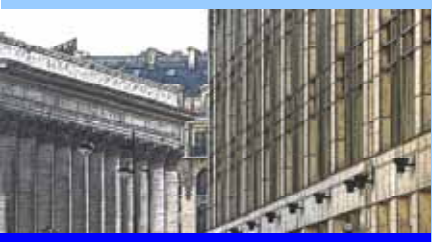
Autorité des Marchés Financiers

Division of Regulation Policy

Research Department

April 2008



Risk and Trend Mapping - n°5

2008 RISK AND TREND MAPPING FOR FINANCIAL MARKETS AND RETAIL SAVINGS

AUTORITÉ DES MARCHÉS FINANCIERS

AMF

CONTENTS

FOREWORD

One year ago, as part of its Better Regulation initiative, the Autorité des marchés financiers (AMF) published its first comprehensive report on risks and trends in financial markets and the market for savings and investment. The purpose of that mapping exercise was two-fold: to rationalise the monitoring of fundamental trends and identify potential threats within the financial sector. Because the ultimate aim was to provide the AMF with a structured overview of the environment in which it takes its decisions, it was only natural that the risk mapping report should be updated every year. Accordingly, this 2008 edition is the first revised version.

The report has been updated amid the major upheavals that have rocked financial markets since summer 2007. Initially caused by the US subprime mortgage crisis, the problems were subsequently complicated by massive reliance on securitisation and by the associated development of complex financial products, which propagated the crisis and eventually escalated it into a global liquidity crisis. It is important to note that last January's report had foreseen some of the risks involved in structured finance products. It singled out the risk of illiquidity in certain complex asset classes, particularly in the event of a market downturn, and also queried the quality and reliability of the measurement of credit risk, notably by rating agencies. The questions thus raised became acutely relevant in the second half of 2007.

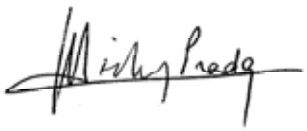
More generally, last year's report guided and enhanced the AMF's 2007-2008 work programme. The major sources of risk identified in the report prompted the AMF to conduct research and set up working groups to delve deeper into the issues concerned and, where appropriate, to supply answers.

The 2008 update has benefited from the numerous constructive comments submitted to the public consultation launched by the AMF when the first edition was published in 2007[1]. One of the main changes this year is the structure of the report. The original mapping exercise was organised around two key areas: retail and wholesale markets. This year's report is divided into three parts. The first, an overview of the financial environment in 2007, concentrates largely on the crisis. The second part deals with developments in the wholesale markets while the third and final section looks at the major trends observed last year in retail investment and fund management.

In parallel, the AMF is releasing its work programme for 2008-2009. Readers of this year's report will note the close link between the risks that have been identified in the report and the main work areas for the coming months.

I hope that this new edition will, like last year, give rise to a meaningful and productive dialogue among all the stakeholders in the markets and also that it will lead to a better understanding of the issues underpinning the AMF's domestic and international strategy.

Enjoy the report!



Michel Prada

[1] A summary of the five responses to the consultation is available on the AMF Website.

Summary

➡TRENDS IN WHOLESALE FINANCIAL MARKETS AND RISKS FOR INTERMEDIARIES, LISTED COMPANIES AND INSTITUTIONAL INVESTORS

Turbulence on financial markets was a major feature of the international environment in 2007 and early 2008, stemming from subprime mortgage lending in the United States and ill-managed use of complex arrangements to refinance these loans through securitisation. Banks were primarily affected by the turbulence because of their policy of investing in structured finance products and their massive needs for liquidity to refinance certain asset-backed commercial paper conduits or structured investment vehicles. Equity prices were hit hard by the banking crisis, dropping sharply since the third quarter of 2007. The market correction was exacerbated further by problems on the market for structured finance products, including the lack of robustness and the unreliability of credit risk assessment models, as well as the lack of transparency in some securitisation vehicles.

Before the impact of the financial turbulence made itself felt, structured finance issuance in Europe increased to some €500 billion in 2007. Until the third quarter, these issues were boosted by the growth of mortgage lending amid buoyant housing markets and by large numbers of leveraged buyouts in which loans were primarily refinanced through securitisation. The supply of securities met demand from investors on an all-out search for higher returns, against a backdrop of excess liquidity and very low interest rates. The growing number of large-scale leveraged buyouts put pressure on financial and legal arrangements, as “covenant-lite” loan contracts became more common and weakened protection for creditors.

Equity market issues showed an overall increase in 2007. Another highlight of the year was the substantial increase in mergers and acquisitions, which rose to a worldwide level of some $4 trillion and nearly $2 trillion in Europe, before dropping off sharply in early 2008. In the three leading financial centres, the trend towards greater numbers of listed companies stemmed mainly from the growth of unregulated “organised” markets, such as the Alternative Investment Market (AIM) on the London Stock Exchange and Alternext in Paris. Meanwhile, the overall number of listings on regulated markets continued to decline, as the number of listings of foreign companies fell.

Investment funds increased their presence in all financial markets. More specifically, assets under management in hedge funds and private equity funds, as well as sovereign wealth funds, reached an outstanding size in 2007. Hedge funds’ management methods have given them a leading role in the transactions conducted on certain markets, such as the credit derivatives market. In some cases, the increasing strength of these investment funds as a whole has brought with it growing problems of shareholder activism, in a situation where conventional collective investment schemes are still relatively passive about their role in the corporate governance of listed companies.

Derivatives markets are still growing rapidly. The demand for such products is driven by major factors linked to changes in asset management for third parties and to financial innovations introduced by

investment banks. The fastest expansion was seen in over-the-counter markets, which were boosted by the strong growth of credit derivatives.

Financial exchanges continue to adopt industrial-scale processes. These stem from developments in governance, in the wake of the demutualisation and listing of exchanges, and from technological progress, which spurs exchanges to seek economies of scale. Under these circumstances, growth strategies are aimed at two objectives. The first is horizontal diversification, through which regulated markets are attempting to extend their areas of activity, and the second is vertical integration. These strategies are primarily a response to the opening-up of trading to competition from intermediaries that are increasingly vying with the predominant established markets. This has had many consequences for the organisation of markets, with new and innovative structures, such as Alternative Trading Systems and dark pools of liquidity, offering intermediaries and institutional investors increasingly sophisticated solutions for their specific needs at keenly competitive introductory prices.

Given the competitive context, post-trade infrastructures are highly strategic, since they are in many respects the keys that open up access to the markets themselves. This seems to be particularly true in derivatives markets. These markets are growing more rapidly than cash equity markets, which were historically the first markets to be structured around modern technological infrastructures. Nevertheless, before addressing the strategic aspects, the central concerns regarding European integration of post-trade systems need to be operational and systemic risks.

Risk of contagion from the subprime crisis

Companies financing is the first sector at risk, especially as far as acquisitions are concerned. From 2005 to the first half of 2007 there was a surge in LBO transactions involving greater leverage and higher acquisition prices, along with a substantial reduction in creditor protection clauses. The surge was made possible by the market's capacity to absorb transactions through securitisation vehicles such as CLOs. The current market climate could eventually make it difficult to refinance debts if:

- The earnings of the target companies decline, as economic growth slows and their pension liabilities become more vulnerable to a prolonged dip in interest rates;
- Uncertainty persists about securitisation vehicles' default risk and the volatility of their ratings as a result of changes in rating methodologies;
- Investors reject structured finance products;
- Bankruptcy proceedings in the event of a default in such a climate are not robust.

Credit derivatives are the second sector at risk. The expansion of securitisation in recent years, even after the primary market seized up in the second half of 2007, was possible only because banks relied massively on credit insurance derivatives, such as credit default swaps (CDS). Despite recent rises in risk premiums, these instruments, which are backed by counterparty services supplied by monoline insurers and hedge funds, ensured a smooth secondary market for market practitioners' credit risks. The robustness of this market and of the underlying legal commitments with regard to credit insurance could be subjected to a full-scale, real-world stress test following the downgrading of the monoline insurers' credit

ratings in early 2008, an increase in defaults, as the business climate deteriorates, and a weakening of certain hedge funds.

Valuation risks stemming from a lack of liquidity and market depth for certain assets

The subprime crisis has revealed shortcomings in the secondary market price formation mechanisms for certain assets. Too few transactions and insufficient transparency on the secondary market made it difficult to determine a reliable fair price for valuing portfolios. The handful of instruments that can be used as price benchmarks are usually index derivatives and it is difficult to assess their representativeness and reliability. Furthermore, the lack of market liquidity is combined with concentration of trading by a small number of operators. Investment banks and hedge funds seem to account for the bulk of trading, especially in the riskiest segments. This aggravates the risk of a cornered market or price manipulation in those segments.

The risk of post-trade system failure on OTC markets

OTC derivatives markets have seen extremely rapid growth in recent years, as alternative investment methods evolved and new financial instruments, such as credit derivatives, emerged. The secure growth of these markets could be jeopardised by major operational problems and failures of their post-trade systems, making these systems a source of systemic risk for market participants. The systems could also turn out to be ineffective for regulators seeking to supervise the integrity of the market.

Governance risk for listed companies and lack of transparency in takeovers

The growing use of certain techniques for trading or acquiring equity interests have raised a number of questions about the potential impact on market operations in general and on listed companies in particular. The current volatility of equity prices creates market opportunities and a growing number of new types of market players are using investment vehicles based in offshore jurisdictions that lack transparency. These developments require special vigilance with regard to several risks:

- The risk of price manipulation by spreading rumours while taking positions or arbitraging in different classes of a company's securities;
- The risk of creeping takeovers after dissimulating the acquisition of significant interests and concert parties through the use of various parking or fronting techniques;
- The risk of manipulating shareholder activism, by using methods that are opaque for the other shareholders and the market, such as the misuse of securities lending to separate voting rights at general meetings from the associated economic interest in the company;
- The risk of insider dealing in financial transactions, especially takeovers involving large numbers of players in long and delicate negotiations that are prone to leaks of inside information.

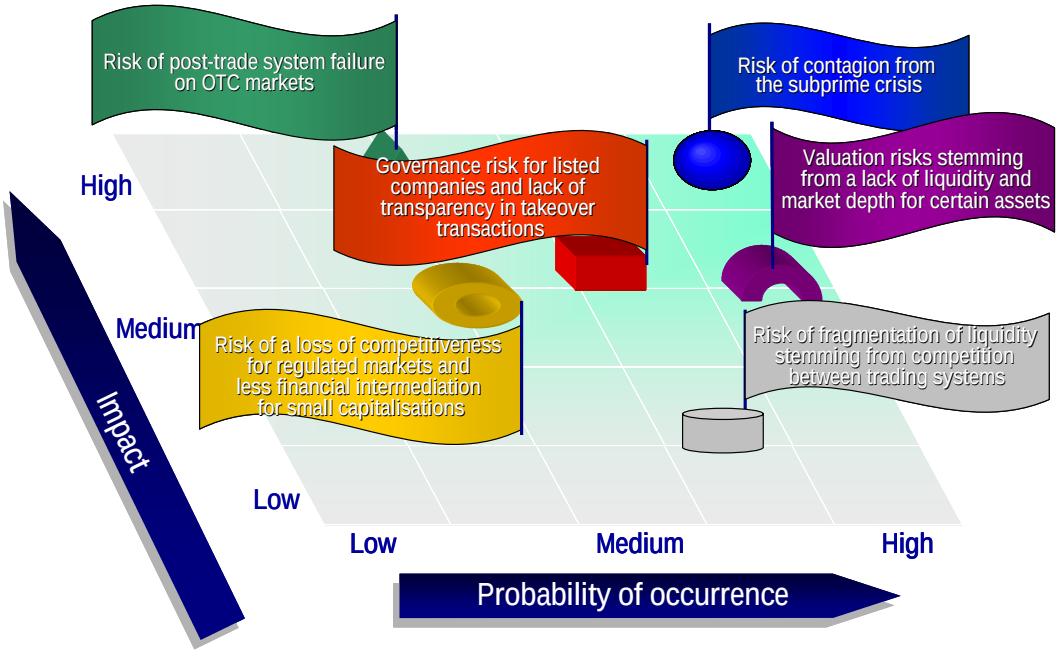
Risk of fragmentation of liquidity stemming from competition between trading systems

The entry into force of MiFID in Europe promoted competition for equity trading by ending the concentration rule requiring orders to be executed on stock exchanges. Competition from new execution services provided by Alternative Trading Systems or by brokers that can "internalise" orders is still limited at this point. Some of the initiatives that have been announced are not yet fully operational. However, this is for example the case for Nasdaq-OMX project and the initiative of a consortium of seven investment banks called Turquoise. Consequently, the strategic choices made by each of the players should be examined to see how the larger number of execution venues might fragment liquidity for certain types of securities.

Risk of a loss of competitiveness for regulated markets and less financial intermediation for small capitalisation stocks

The surge in the use of organised, but unregulated, trading platforms, such as AIM in the UK and Alternext in France was a key feature of European equities markets in 2007. On the other hand, listings on regulated markets continued to decline as regulations were tightened following the transposition into national law of the Directives adopted under the European Financial Services Action Plan. Regulated markets seemed to be attracting more collective investment structures, such as alternative investment funds or diversified holdings, rather than business undertakings per se. These changes call for greater emphasis on the risk of a loss of transparency and overall security on the markets in their new configuration. At the same time, the supply of financial intermediation for small caps is drying up in some countries, bringing the risk of declining liquidity for medium-sized and small listed companies because of insufficient secondary market trading and market making.

RISK MAP FOR INTERMEDIARIES, LISTED COMPANIES AND INSTITUTIONAL INVESTORS



****

In light of the above risks, regulators have several possible courses of action:

- Subprime contagion risk calls for greater international efforts to enhance the transparency of primary and secondary credit markets and the activities of market participants, especially credit rating agencies;
- Valuation risk for assets on illiquid markets calls for closer supervision of market transactions, verification of intermediaries' compliance with the rules of conduct and conflict of interest rules, and an analysis of the quality of the price indicators used as benchmarks by all market participants;
- The risk of post-trade system failure on OTC markets calls for continued work at the European level on post-market infrastructures, in collaboration with the European Central Bank;
- The risk of market abuse and manipulation of shareholder activism calls for enhanced market surveillance, especially through international discussions of the delicate matter of off-shore financial centres, and monitoring of corporate governance practices and, more specifically, the way that general meetings of shareholders are run;
- Liquidity fragmentation risk calls for special statistical indicators to monitor transactions in order to see how the best-execution rules are working and to observe the role of new trading platforms;
- The risk of a loss of competitiveness calls for continued work on enhancing the attraction of a public listing, especially for small and medium-sized companies, or for companies from outside the European Union.

➡TRENDS IN PERSONAL AND COLLECTIVE INVESTMENT MARKETS AND THE RISKS FOR RETAIL INVESTORS

In 2006 and 2007, life insurance and conventional bank savings products still accounted for more than 80% of French households' assets. French households occupy the middle ground, with the United Kingdom and the Netherlands on one side, where life insurance and pension funds account for the predominant share of households' financial assets, and Spain and, to a lesser extent, Germany and Italy and on the other side, where households invest a substantial share of their financial assets in conventional bank savings products.

Directly held listed shares still accounted for less than 6% of French households' financial assets, which was the lowest level in Europe, but aggregate holdings of shares through all investment channels increased substantially, since 2002, to reach nearly 18% at the end of December 2006. Indirect holdings of shares grew with the marketing of unit-liked life insurance policies, but all other types of intermediated investment also contributed to this growth. More generally, the breakdown of French households' financial assets by risk levels shows that their portfolios incurred very little aggregate risk, since 75% of their investments were risk free at the end of 2006. The crisis on the securitisation market had major effects on the collective investment market. It primarily affected investment funds buying structured products of this type, such as funds categorised as "dynamic money market funds". But its widespread effects hurt all segments of the collective investment market, with French-based funds showing net redemptions for the year as a whole. A similar pattern was seen in the leading countries serving as bases for collective investment schemes in Europe. Looking beyond the short-term consequences, various factors are bound to underpin growth in asset management. Some non-harmonised funds (or "non-UCITS"), such as

institutional and alternative funds, seem to have withstood the crisis better. More generally, funds that are likely to provide more diversification opportunities compared to conventional asset classes (hedge funds, private equity funds, real estate funds and even commodity funds) should contribute to the growth of the asset management industry.

With regard to collective investment management, innovation has created a multi-polar industry with passive management products, which are often exchange-traded, and innovative products, which are potentially very diverse and generally cost more. The development of the latter type of products has been facilitated by the loosening of the European regulatory framework, which allows for greater use of alternative strategies.

Despite the current crisis, the collective investment industry should remain profitable and seems to be prepared, on the whole, to meet the challenges of technological progress and European integration. The main problem with the diversification and multiplication of collective investment schemes now seems to be how to market them. Furthermore, looking beyond the differences in the legal wrappers used for products, these developments are a good opportunity for a review of the competition between promoters in a context where substantial price differences between similar funds still persist.

Risk of inefficient allocation in household portfolios

The distribution of French households' financial assets by risk level shows that in aggregate, these portfolios still have very little exposure to financial markets. At year-end 2006, 75% of households' investments bore no principal risk. From the standpoint of investor protection, this finding might appear reassuring, but it also highlights very clearly that households' investments are insufficiently diversified and their investment horizons are probably inappropriate (yield loss for long term investments devoted to retirement preparation). This situation is explained in part by tax factors and probably also by a high level of psychological aversion to risk of loss. The highly procyclical tendency of household investments in equities – as suggested by the surge in inflows to unit-linked life insurance contracts since the 2004 low, paralleling the stock market recovery – is further cause for concern. The consequent risk is that investment behaviour will be systematically inappropriate to market conditions, with investments in risky assets being made just when prospective returns are likely to be lowest.

Risk of mis-selling and poor investor understanding of some products

Financial innovation and the increasing complexity of some investment products often make it difficult to comprehend how they work. Since the revision of the UCITS Directive, changes at EU level in the nature of eligible assets of coordinated funds have enabled the general public to benefit from advanced investment strategies, notably when volatility is high or markets are retreating. However, the techniques that are used have engendered greater difficulty in harmonising transparency standards across Europe for the whole offered products. The consequent risk is that investors tend to misunderstand the specific risk/return profile of such products unless the marketing of them is systematically accompanied by advice tailored to the customer's situation.

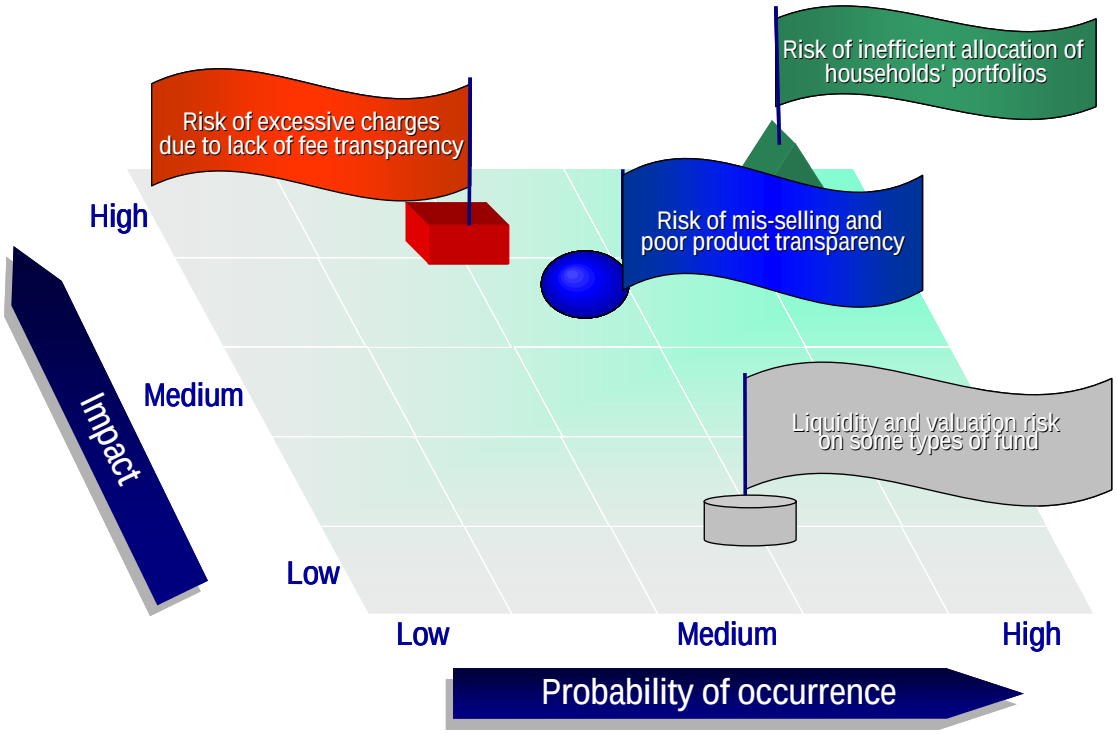
Risk of excessive fees associated with inadequate pricing transparency

The decline in returns across all financial markets in 2007 puts the issue of fees charged on financial products into even starker relief. A number of developments stand to impair transparency of fees, starting with the complexity of products that use derivatives and techniques to take on market exposure in excess of the amount invested. These techniques require a rising number of participants, thereby lengthening the chain of intermediaries and making it hard to quantify margins on a given transaction. Moreover, the proliferation of competing wrappers adopted for tax and legal purposes to structure and market what is, from an economic standpoint, the same product, may make it difficult to get a fair assessment of the fees charged on it and their impact on its future performance.

Liquidity risk and wrong valuation risk in certain types of funds

Questions relating to fund liability management have been brought to the fore again by the subprime crisis. A number of funds characterised as "dynamic" money market funds have encountered liquidity problems owing to their exposure to structured products. These developments raise questions as to how well investors actually understand the valuation risks or the risks entailed by limits on redemptions at funds invested in inherently illiquid assets such as private equity, alternative funds, small-cap funds or property – all of which have seen significant growth in recent years.

SUMMARY OF TRENDS AND RISKS FOR RETAIL INVESTORS



****

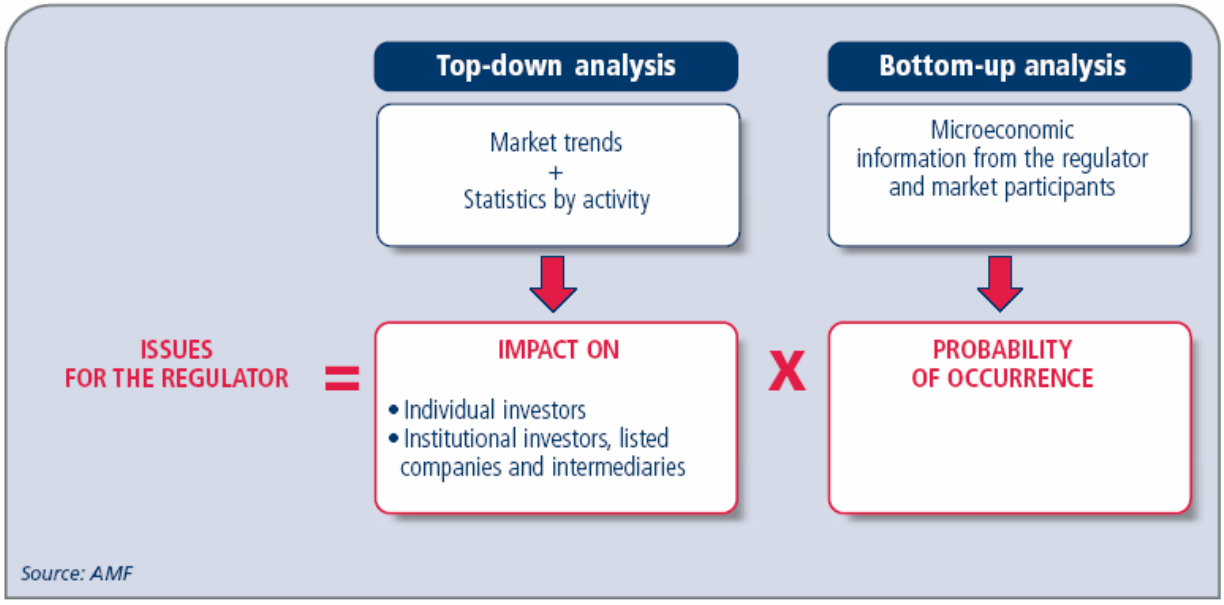
The risks identified in the preceding paragraphs suggest a number of courses of action for the regulator:

- the risk of inefficient asset allocation calls for more efforts in financial education, along the lines of the initiatives already taken in this area with the creation of France's Institute for Public Financial Education (IEFP).
- the risks of inappropriate marketing and excessive fees call for continued efforts to improve the information given to the public at the time of acquisition of a financial product. In particular, the work at EU level on simplifying the fund prospectus ought to give some thought to developing more satisfactory and comprehensible indicators of the risk and return characteristics of financial products, in connection with the horizon of investment – indicators that can be understood by the public at large.
- the liquidity and valuation risks on certain types of investment funds call for reconsideration of how liability constraints are adapted to investment policy when that policy includes complex or illiquid assets.

INTRODUCTION

During its 2007 risk mapping exercise, the AMF analysed various short- and medium-term trends. As part of this process, it identified and ranked a number of risks to the financial sector and its main participants. The methodology consisted in analysing a range of areas by examining microeconomic data supplied by participants and regulators, and macroeconomic information on overall trends in retail savings and financial markets. Each risk was ranked according to its likelihood of occurrence and its potential impact on markets and participants.

AMF risk-ranking method



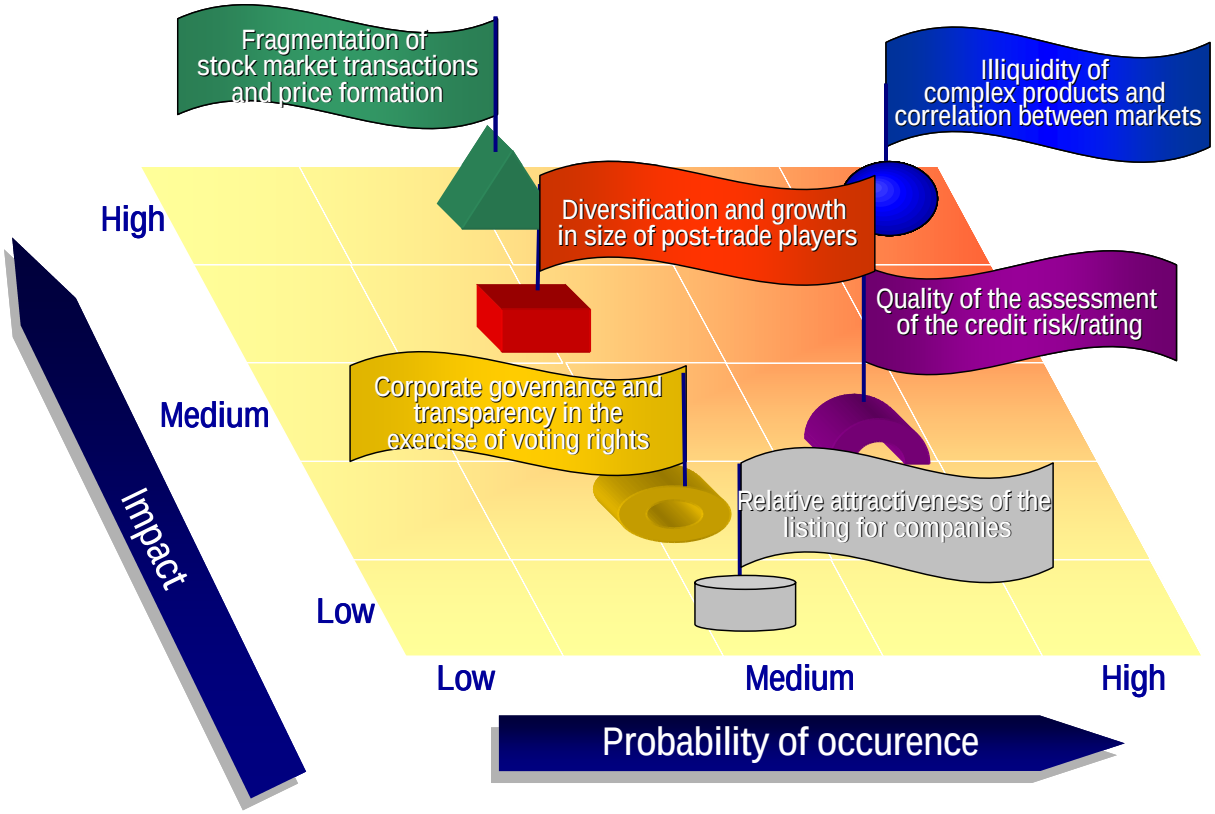
In keeping with the spirit that led to the introduction of this risk monitoring exercise, the AMF began several new initiatives, both at home and as part of its participation in European and international projects. All of these were aimed at reducing the probability of occurrence and potential impact of the identified risks. Five main areas of action were established based on the risks detected in the 2007 mapping exercise:

– the role of rating agencies and issues relating to the transparency and liquidity of the market for complex structured finance products. In addition to work done by the AMF as part of its annual report on rating agencies, this topic was addressed separately, notably in a study on the rating of subprime residential mortgage-backed securities (RMBS) in the USA[2]. The AMF drew on these contributions to convey its position at international forums such as the International Organization of Securities Commissions (IOSCO), which will shortly issue a report on rating agencies, and during discussions at the Financial Stability Forum (FSF) on transparency and pricing of complex products;

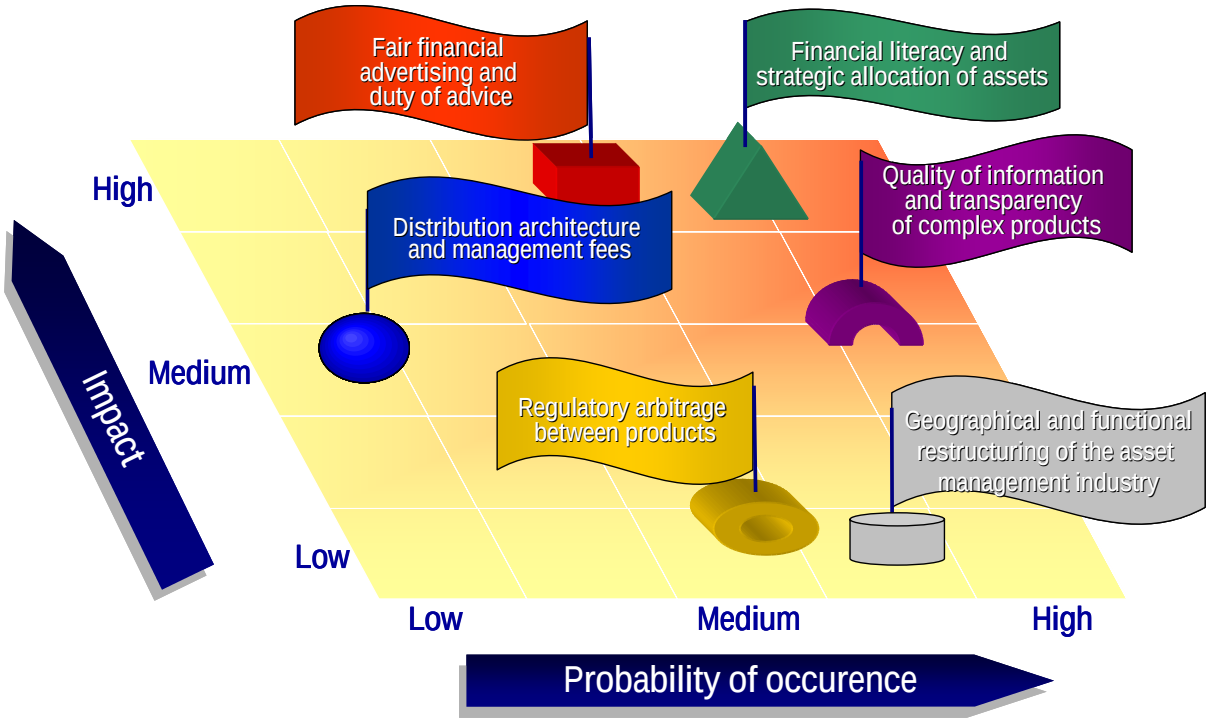
[2] The study of the AMF, entitled "Analysis of subprime RMBS ratings in the USA", published in January 2008, provides a detailed analysis of the behaviour of rating agencies towards subprime RMBS in 2007. It stresses that there was a lag in downgrades relative to the US housing market downturn. It also shows that the downgrades were substantial and concentrated over a very short space of time, and affected a large number of tranches.

SUMMARY OF RISKS PUBLISHED IN JANUARY 2007:

WHOLESALE MARKETS



RETAIL SAVINGS AND FUND MANAGEMENT MARKETS



– the French regulator also paid considerable attention to the evolution of market infrastructures and the challenges posed by the transposition of the Markets in Financial Instruments Directive (MiFID) at European level, particularly in terms of the introduction of competition between different trading systems and venues. Since it was impossible to conduct factual analyses of these nascent developments, the AMF began an initial round of work aimed at listing and organising the many questions raised by these potential developments and at preparing appropriate statistical indicators to monitor the market as its contours change[3]. The structure and regulation of financial markets was selected as the theme for the Scientific Advisory Board's annual conference, which was organised jointly with the Securities and Exchange Commission in 2007. The event provided an opportunity to enhance European perspectives by learning more about US experiences. At European level, the AMF is participating actively within the Committee of European Securities Regulators (CESR) in discussions on changes to post-market infrastructures, in partnership with the European Central Bank (ECB);

– during the last mapping exercise, the section on financing approaches and governance of listed companies raised the issue of the shrinking number of listed companies on the main European equity markets and the risk of inappropriate shareholder activism in connection with the rise of certain types of alternative investment. The AMF set up working groups to look at both these issues. The first group, which was set up in April 2007 in partnership with Middlenext[4], proposed adjustments to the financial disclosure requirements for small and mid caps. Following a public consultation, the AMF incorporated these recommendations by publishing two guides specifically to help small and mid caps draft registration documents and internal control reports. The second group looked at securities lending before general meetings of shareholders. Its report, which was published in January 2008, contained a number of proposals to limit the negative effects of using securities lending to influence corporate governance. The proposals ranged from making securities lending more transparent to all shareholders and company management, to suspending the voting rights attached to loaned securities;

– a number of initiatives were launched on risks relating to misallocation of household financial assets and imperfect and inadequate information about the nature of financial products. A partnership with the academic community was set up to better identify the determinants of retail investor investment behaviour[5]. This project, which is also being taking forward through the support that the AMF provides to the Institute for Public Financial Education, has special importance in the context of MiFID, which places new obligations on distributors of savings products in terms of understanding investor needs and satisfying advisory requirements. Also as part of MiFID's introduction, the AMF carried out an assessment of the approaches used to market financial products and stepped up its controls over financial advertising. Furthermore, the AMF chaired a CESR working group aimed at simplifying and clarifying the prospectuses for funds marketed to the general public in Europe;

[3] See "Equity market strategies: overview, policy issues and outlook" published in December 2007 in the AMF's Economic and Financial Newsletter.
[4] Industry association representing listed mid caps in France.
[5] This partnership resulted in the publication in May 2007 of a AMF Working Paper entitled "How do French investors integrate the time factor into their portfolio management?".

– on questions relating to the asset management industry, the AMF addressed the risk of regulatory arbitrage between products that are subject to different jurisdictions (asset management, bank and insurance products). It covered this topic in discussions both at home and at European level, and notably via its participation in the work of the European Commission on substitute products and the need to harmonise sector legislation. The challenges posed by the geographic and functional organisation of activities, both in terms of the competitiveness of the domestic financial centre and in terms of investor protection, prompted a study by a research team from Paris-X Nanterre University on the factors that determine the location of alternative investment activities.

The 2008 risk report uses the same methodology as that of 2007 and looks at the same main areas of activity. This year, however, it is divided into three sections. The first gives an overview of the financial environment in 2007, in which the financial crisis figures large. The second section looks at developments on wholesale financial markets, while the final section considers the broad trends at work last year in retail savings and fund management. Both of the last two sections end by summarising the main risks in that area and sketching out the lines of discussion and action that will go into the AMF's work schedule for the next two years[6].

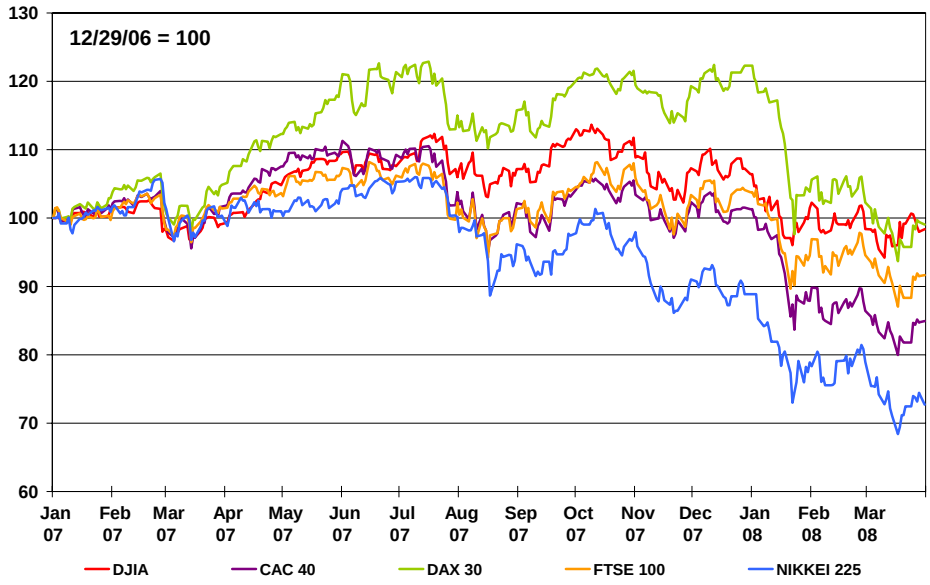
[6] See "Meilleure régulation: le premier bilan. Programme de travail de l'AMF 2008/2009", Autorité des marchés financiers (forthcoming).

GLOBAL ENVIRONMENT IN 2007:

IMPACTED BY THE FINANCIAL CRISIS

From a financial perspective, 2007 was a year of two very different halves. In the first, equity markets performed strongly on sustained economic growth in the main regions, outstanding corporate profits and a surge in mergers and acquisitions (M&A). Despite a soft patch in March caused by early bad news on the US housing market and fears of a reversal on Chinese equity markets, market indices made substantial gains in the first six months of the year. In Europe, the CAC40 rose by 9.3% and the DJ Euro STOXX 50 by 9.0%, while in the USA, the S&P500 put on 6.0% over the same period.

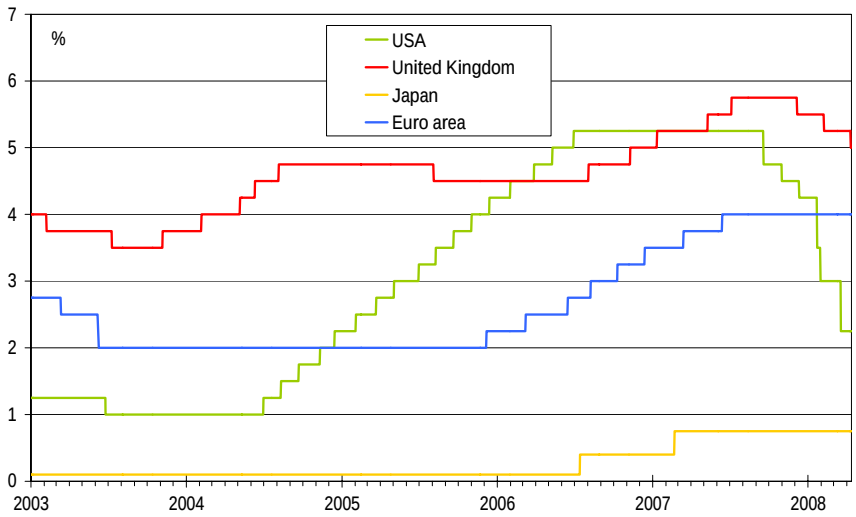
Figure 1: Main stock market indices in 2007



Source: Thomson Financial

The economic growth underlying the equity market rises, combined with higher inflation, influenced the stance of monetary policies and bond market performances. In the USA, where the economy was at the peak of its cycle, the Federal Reserve held policy rates at 5.25%, after a long series of tightening moves between summer 2004 and mid-2006 (Figure 2). In the euro area, the ECB continued raising rates, pursuing a milder cycle of increases set in train much later than that of the Fed. The ECB's main refinancing rate rose to 4% in June, i.e. 50 basis points higher than its level going into the year.

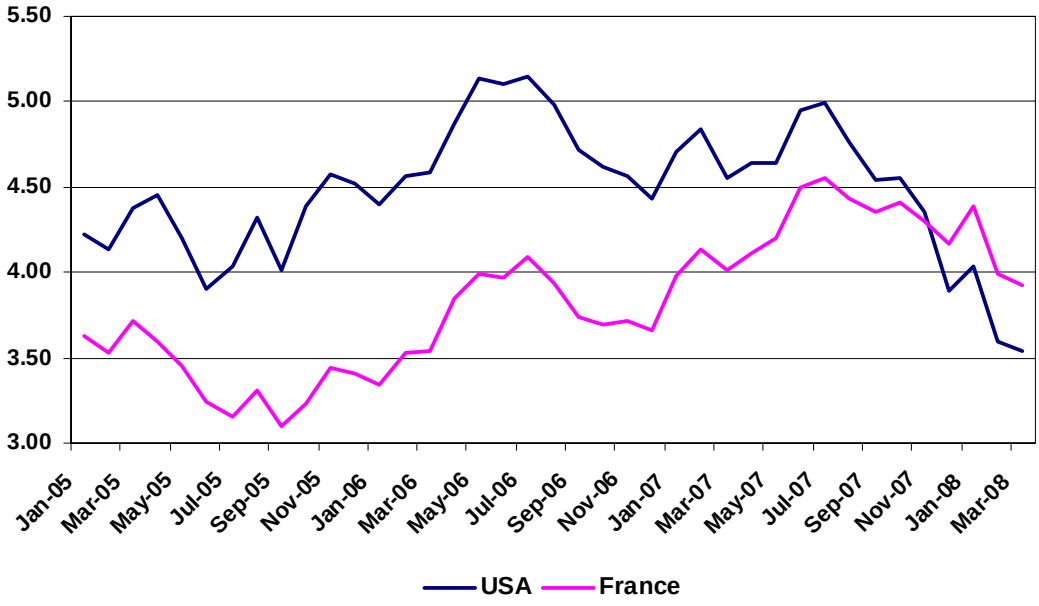
Figure 2: Key monetary policy rates



Source: Datastream

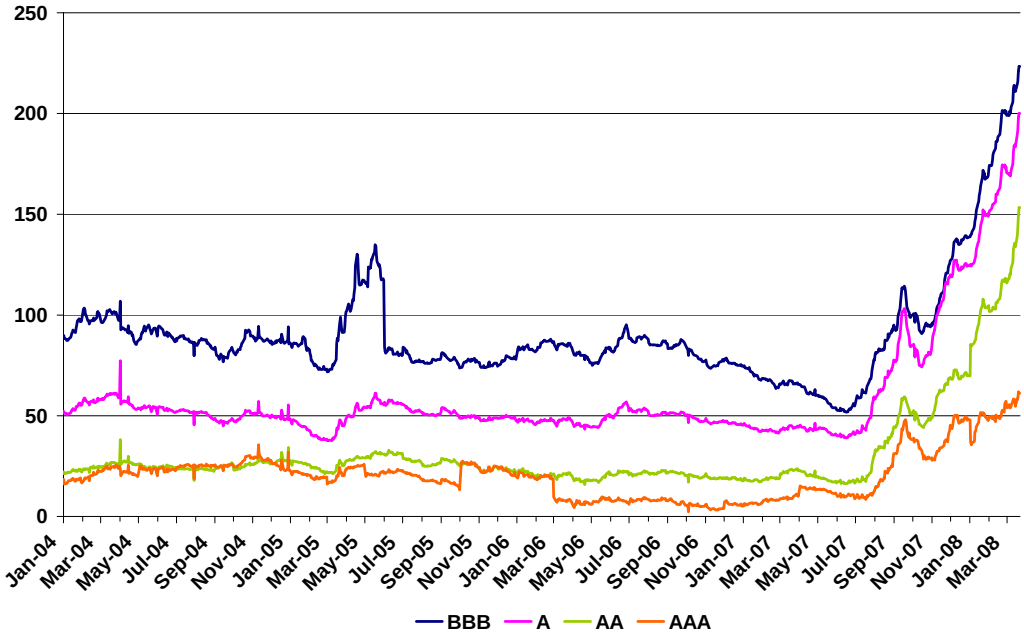
Bond markets moved in step with economic conditions and monetary policies. Long-term yields on government bonds rose sharply in the first half (Figure 3). This was particularly true in the euro area, where yields were influenced by the rise in short-term rates and inflationary pressures. The corporate bond market was lifted by healthy business profits and historically low default rates. Spreads on BBB issuers narrowed significantly, with the Iboxx index for this type of rating reaching a low of just 53 basis points (Figure 4).

Figure 3 – 10-yr government bond yields (%)



Source: Datastream

Figure 4: Iboxx index of credit spreads in Europe



Source: Datastream

The second half 2007 financial markets suffered severe turbulence.

1. The financial crisis erupted in the spring 2007 and worsened through the summer

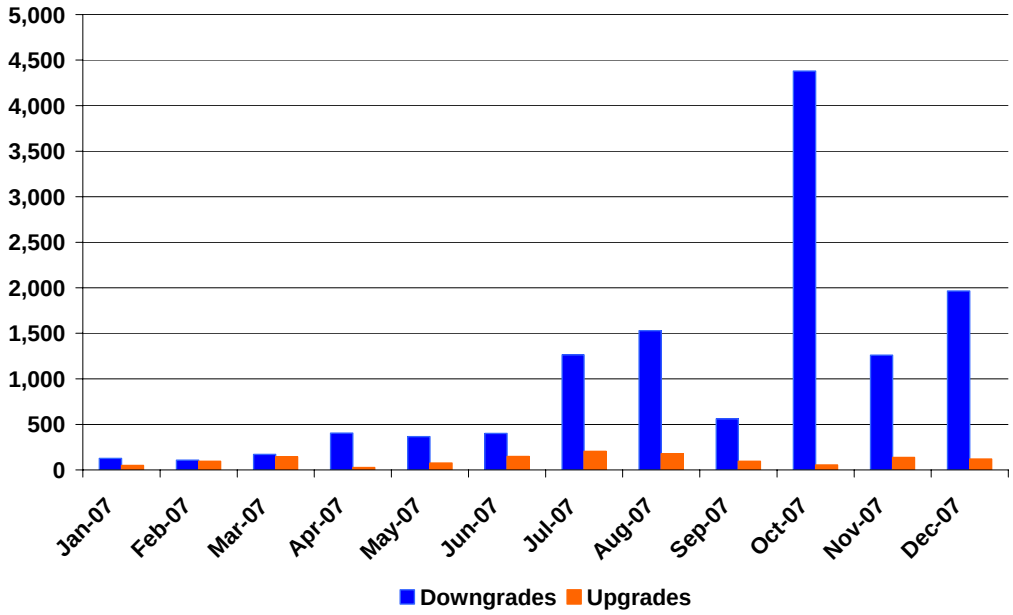
The financial environment was transformed in the second half 2007 as the subprime loan crisis erupted. Poorly controlled distribution of mortgages in the USA spread abruptly through a series of complex transmission mechanisms, turning into a global liquidity crisis. All areas of financial markets were affected, albeit to varying degrees.

The origin of the crisis can be traced back to the USA, where huge volumes of adjustable-rate mortgages based solely on the value of the property were distributed to households with poor credit histories or shaky finances. When the Federal Reserve began raising rates in 2004, monthly mortgage repayments increased rapidly, a situation that was exacerbated because falling house prices from mid-2006 had prevented households from refinancing at attractive rates. This combination of factors triggered a substantial deterioration in creditworthiness and a rise in default rates beginning in the second half of 2005. From the United States, the downturn spread to all other financial markets through complex transmission mechanisms.

The first link in the chain was the refinancing approach used by the institutions that originated the subprime loans. They made extensive use of securitisation techniques, which entailed transferring the loans to special-purpose vehicles that then financed the purchase by issuing residential mortgage-backed securities (RMBS). These securities were then distributed to a broad community of investors around the world. But distribution of the subprime debt did not stop with the primary securitisation process. Many RMBS were in turn included in secondary securitisation vehicles, including collateralised debt obligations (CDOs) and structured investment vehicles (SIVs).

Financial products created by subprime securitisation were understandably worst affected when US housing market indicators turned downwards. After an initial fall in February and spring 2007, the prices of these products then declined sharply beginning in the summer, as reflected in credit derivatives indices. The change in the behaviour of rating agencies in the second half of 2007 seems to have played a pivotal role in this respect. The abrupt upward revision to forecast default rates for the underlying assets, combined with revisions to rating methodologies, prompted the main rating agencies to start slashing the ratings of many RMBS tranches beginning in June 2007. CDOs of all rating levels were downgraded from October onwards (Figure 5). Spillover effects caused risk premia on corporate debt markets (cash and especially derivatives) to be substantially revised as well. Prior to the sudden across-the-board rise, credit spreads, particularly on the lowest-rated issues, had been narrowing sharply since May 2005.

Figure 5: subprime RMBS rating downgrades and upgrades



Source: Bloomberg, AMF calculations

The surge in risk aversion caused a flight to quality, as investors moved away from risky assets and into government bonds. This caused a break in the upward trend in long-term interest rates, which was replaced by a decline that was more or less pronounced depending on the region. In the USA, where the Federal Reserve began cutting policy rates at the end of the summer, long-term interest rates fell by around 100 basis points between their peak in the early summer and the end of December. The movement was more moderate in the euro area, where the monetary policy outlook was different. French long rates, for example, fell by some 30 basis points. Long-term interest rates have continued to decline since the start of 2008, particularly in the USA, where the Fed has made more rate cuts. A similar but less pronounced trend has been observed in Europe.

2. The crisis revealed banks' heavy exposure and the rapid reintermediation of credit risk

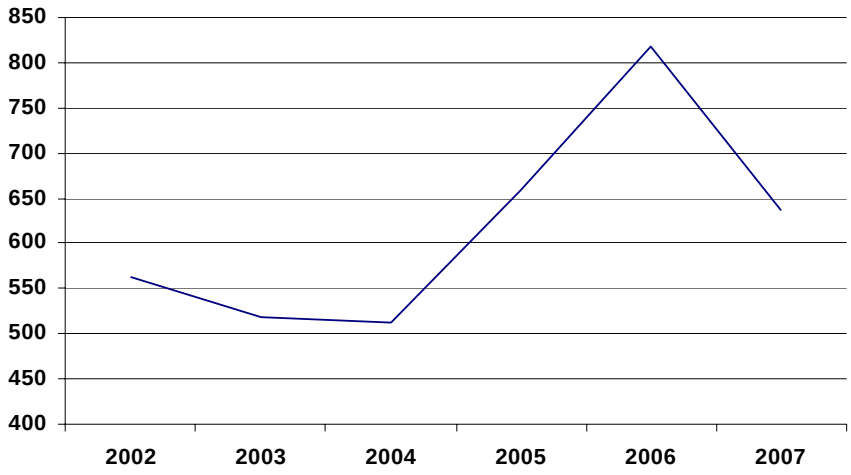
Although the financial crisis can be traced back to solvency problems for US households, it turned into an international crisis to which banks were heavily exposed. This highlighted problems in the disintermediation process, which was characterised by an originate-to-distribute approach by banks, a noteworthy effect of which was to cause credit risk to be reintermediated during the crisis. Banks' exposure stemmed from several factors. In recent years, the riskiest securitised products in the subprime RMBS category could be placed on the market only through complex CDO-type refinancing structures, whose junior tranches were bought by hedge funds thanks to the leverage that banks provided by investing massively in the senior tranches of the same CDOs. Investment banks were first exposed to the subprime crisis through these investments, which saw them take on large portfolios of structured finance products[7]. The massive devaluation of these products on the market in spring 2007 resulted in huge writedowns for

[7] Goldman Sachs estimated total bank exposure to subprime risk at around $400 billion at the end of 2007. Almost two-thirds of this exposure stemmed from investments in RMBS or CDO securitisation vehicles and one-third from direct holdings of subprime loans (cf. L. Pitt, 2007 "Global Banks and Finance: Where did all the cash go?", Yankee FIG Conference, New York City, December).

the banks. News of this caused interbank lending rates to jump higher and put downward pressure on banks' capital from end-July 2007.

Banking liquidity was then tested by guarantees granted by banks to the off-balance-sheet ABCP and SIV conduits that they had set up. When these vehicles were unable to refinance on the money market in August 2007, the banks had to honour their commitments by providing the necessary funds[8]. A look at the pattern of outstandings in US ABCPs reveals the break on the market during the summer. Total outstandings fell by around $175 billion in the third quarter and by $79 billion in the fourth (Figure 6). More generally, the need for liquidity was exacerbated by the "shut-down" of securitisation markets and hence by the inability of banks to transfer to the market the corporate debt – particularly from leveraged buyouts – that they had accumulated on their balance sheets. Faced with this situation, central banks, notably in the USA and Europe, were forced to make several exceptional interventions on the money market to provide banks with the liquidity that they could not obtain from market participants and to enable them, through repurchase agreements, to continue to obtain short-term refinancing for their medium-term securitisation products.

Figure 6: US ABCPs, total outstandings ($ billion)



Source: Federal Reserve

The writedowns were also partly attributable to the deterioration in banks' counterparty risk. In particular, when monoline insurers ran into difficulties and were downgraded by the main agencies, banks automatically had to write down the assets insured by monolines[9].

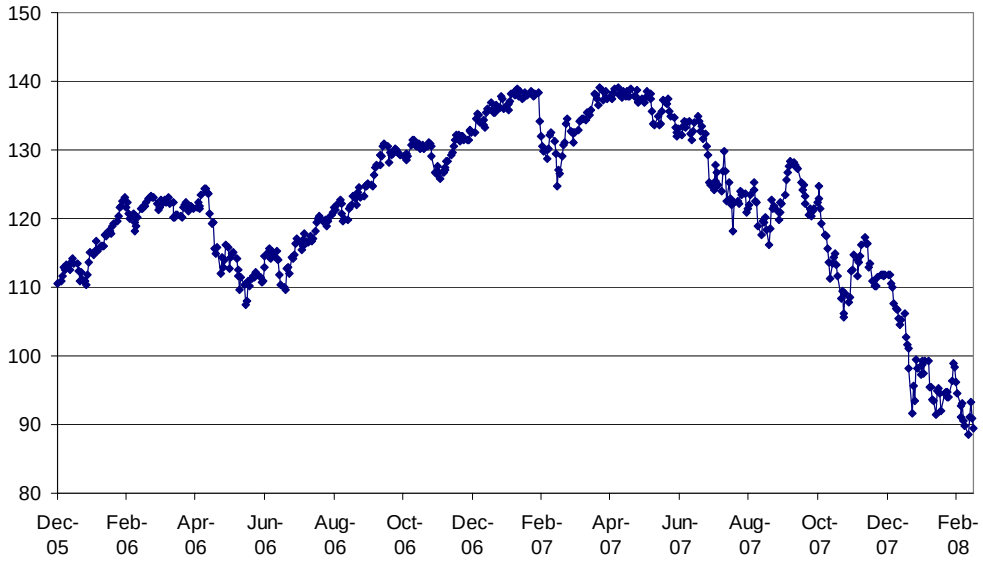
[8] Sometimes, even when there was no formal commitment to make up the conduits' funding shortfalls, banks acted solely to avoid reputation risk (see. L. Clerc, 2008, "A primer on the subprime crisis", February, Occasionnal Paper n°4,Banque de France).

[9] Ambac and FGIC were downgraded in early 2008, and ACA, a mid-sized monoline, was downgraded in December 2007 (cf. Financial Agency of the Embassy of France in the United States, 2008: "Quelle sortie de crise pour les assureurs monoline?", Wall Street Watch, 21 February).

These events ultimately caused banks' share prices to fall sharply after a period of major gains (Figure 7). The MSCI index of euro area financial stocks plunged by 16% between June and December. Setting aside the immediate and multi-faceted impact of the crisis on profits and earnings, the slide in equity prices likely also reflected longer-term concerns about the business models of some banks that were heavily focussed on credit securitisation and complex structured finance products.

Figure 7: MSCI index of euro area financial stocks

(in €)



Source: MSCI

3. Equity markets were indirectly hurt by the fall of the finance sector

Though initially confined to bond markets, the subprime crisis quickly spread to equity markets, including stocks outside the financials category. To a large extent, the initial spillover was caused as heavily leveraged participants were forced into distress sales, divesting themselves of their most liquid assets in response to creditors' margin calls (cf. below). Between mid-July and mid-August, the Dow Jones and Dax indices gave up 8% and 10% respectively. The CAC40 index fell by 14% from 6,200 points in July to below 5,300 points in August, returning to its level of late 2006. In the latter half of the year, market performance followed a sawtooth pattern. While the immediate and massive injection of liquidity by central banks, coupled with the publication of reassuring indicators about the state of the US economy, caused indices to rebound between mid-August and mid-September, uncertainty about the size and impact of the mortgage crisis and record oil prices exerted downward pressure at the end of the year. Fears that a credit crunch might be on the way because banks were undercapitalised relative to the actual risks on their balance sheets, led to concerns about a larger-than-expected economic slowdown in the USA.

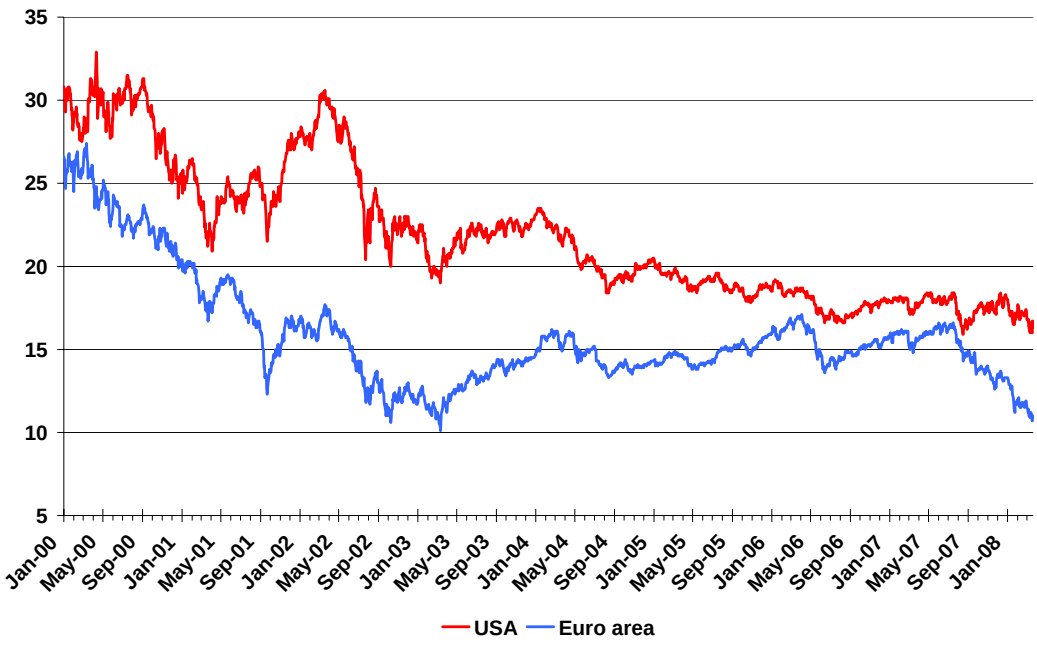
Overall, US and European equity markets posted a mix of performances in 2007. Broadly, though, returns were well down on those of the previous year (Table 1). In Europe, the MIB30 fell by 6.5%, the DAX30 rose by 22%, and France's CAC40 put on 1.3%. In the USA, the S&P500 was up 3.5% and the Dow Jones gained 6.4%. The Nikkei was off by 11.1%. These performances were low overall given the large profits being made by companies. They therefore helped to keep valuations down, even causing them to contract, as illustrated by the pattern of PERs in the USA and the euro area (Figure 8).

Table 1: Equity market performances

	14 March 2008	10-year historical high	Date	Chg since 31 Dec. 07 (%)	2007	2006
DOW JONES INDUSTRIALS - PRICE INDEX	11,951.1	14,164.5	09/10/07	-9.9%	6.4%	16.3%
S&P 500 COMPOSITE - PRICE INDEX	1,288.1	1,565.2	09/10/07	-12.3%	3.5%	13.6%
NASDAQ COMPOSITE - PRICE INDEX	2,212.5	5,048.6	10/03/00	-16.6%	9.8%	9.5%
FRANCE CAC 40 - PRICE INDEX	4,592.2	6,922.3	04/09/00	-18.2%	1.3%	17.5%
DAX 30 PERFORMANCE - PRICE INDEX	6,451.9	8,105.7	16/07/07	-20.0%	22.3%	22.0%
FTSE 100 - PRICE INDEX	5,631.7	6,930.2	30/12/99	-12.8%	3.8%	10.7%
MILAN MIB 30 - PRICE INDEX	32,211.0	51,093.0	06/03/00	-17.2%	-6.5%	17.5%
DJ EURO STOXX 50 - PRICE INDEX	3,566.6	5,464.4	06/03/00	-18.9%	6.8%	15.1%
NIKKEI 225 STOCK AVERAGE - PRICE INDEX	12,241.6	20,833.2	12/04/00	-20.0%	-11.1%	6.9%

Source: Datastream

Figure 8: Price earning ratios



Source: Datastream

The situation in equity markets has deteriorated considerably since the beginning of 2008, reflecting growing investor concerns about the likelihood and scale of an economic recession fuelled by the international liquidity crisis. The stimulus plan introduced on 18 January by the US administration failed to win over investors and actually triggered a wave of panic across markets. In the euro area, the ECB's determination not to lower policy rates because of the resurgence in inflationary pressures also played a part in the slide in market indices. Between 31 December 2007 and 15 March 2008, most indices posted falls, ranging from 9.9% for the Dow Jones to 20% for the DAX30 and the Nikkei. The CAC 40 lost 18.2%.

4. The destabilising effects of market failures exacerbated these trends

Overall, financial markets sustained extremely heavy losses relative to the underlying factors that led to the crisis, namely defaults on subprime mortgages. This was due to amplifying effects linked to major failures on debt markets:

- some securitisation vehicles instantly suffered from a liquidity shortfall on the secondary market. This was attributable to their complexity, their lack of standardisation and in some cases problems in their legal documentation. The portfolio adjustments demanded by investors in response to the downturn on the US property market could not be carried out under normal market conditions for want of buy-side counterparties. This caused prices to collapse, with adverse consequences for the marked-to-market balance sheets of holders, notably banks. The lack of liquidity also created serious pricing problems. Efforts were made to circumvent these difficulties by using credit derivative indices like ABX, whose representativeness and appropriateness are still unproven, notably given the speculative pressures placed on them;

- the lack of information on the scope and nature of the risks borne by certain participants and vehicles fuelled considerable uncertainty among investors and market participants generally. This uncertainty was exacerbated by the lack of transparency about secondary transactions and post-trade systems, which made it difficult to gain an overall picture of relative positions on the market. This led to increased risk aversion and tension, particularly on the interbank market, where central banks had to intervene several times with exceptional injections of liquidity;

- the delayed, large-scale response of rating agencies with respect to RMBS and CDO vehicles, which was connected with changes to rating methodologies, increased the uncertainty about the actual value of these vehicles and the level of credit risk to which they were exposed. The lack of transparency about the parameters of underlying assets meant that the weakness of those assets was hard to predict, and the rating volatility caught the market off-guard. An analysis of the behaviour of rating agencies reveals that the process of downgrading securitisation vehicles was not a gradual one. Rather, it was concentrated over a short period of time and included many large revisions[10]. Moreover, the bulk of the downgrades affected vehicles that had been issued recently (2005 and especially 2006 vintages), when pressures were already becoming apparent on the US housing market;

- furthermore, the across-the-board slide was definitely exacerbated by the close links on certain segments between two types of highly-leveraged participant, namely investment banks and hedge funds, via prime brokerage activities. These participants are inherently impatient and vulnerable to market fluctuations because of their weak capital base and the way that counterparty risk is managed through collateral securities and regular adjustments of positions through margin calls. Since the market for structured finance products was heavily concentrated, at least in the riskiest tranches, with these two sorts of participants, the price declines were fuelled by forced sales. These were caused by margin calls carried out by prime brokers on hedge funds. Furthermore, the fact that some market participants, driven by obscurely-sourced rumours, were able to arbitrage

[10] In one-half of all cases, the tranche in question was downgraded to speculative grade. Also, ratings were extremely unstable, with many vehicles being downgraded several times in swift succession by the same agency (cf. C. Romey and B. Drut: "Analysis of subprime RMBS ratings in the USA", Risk and Trend Mapping, No. 4, January 2008, Autorité des Marchés Financiers).

between the assets and the debt or equity instruments on the same issuer may also have created opportunities for price manipulation. The UK, US and European regulators recently decided to conduct investigations in this area.

TRENDS IN THE WHOLESALE FINANCIAL MARKETS AND RISKS FOR INTERMEDIARIES, LISTED COMPANIES AND INSTITUTIONAL INVESTORS

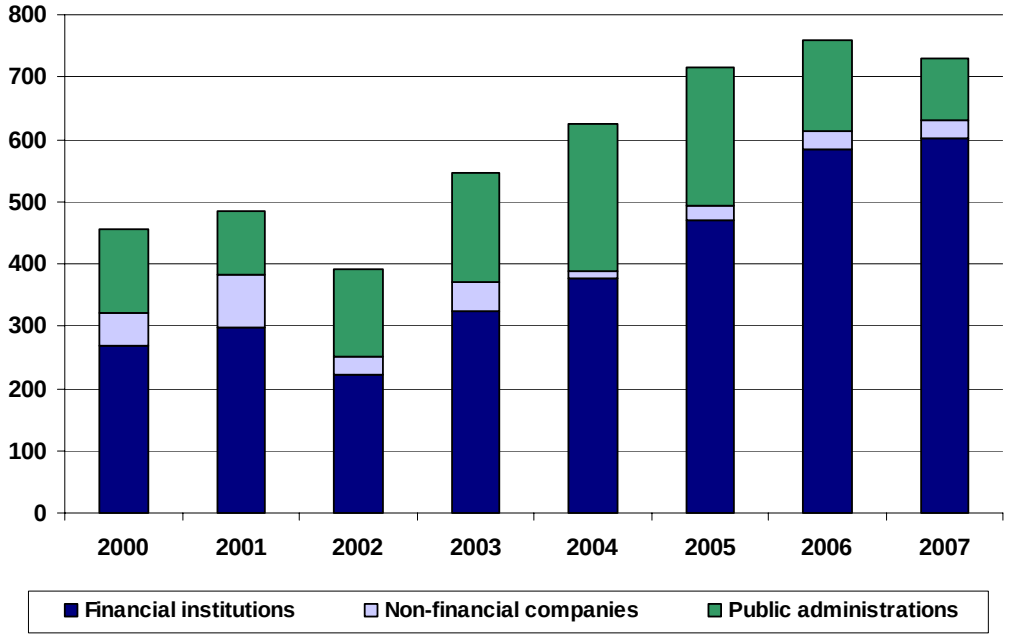
I. MARKETS IN 2007

1. The rising share of risky debt has become a major characteristic of global bond markets

The main factors of supply and demand on debt markets continued on their previous path in the first half of 2007. Cash poured into US and European bond markets, particularly from emerging economies with sizeable balance-of-payments surpluses. Heavy demand for securities from this source, coupled with demand from domestic institutional investors, was chiefly absorbed by large-scale issues by financial institutions and, to a far smaller extent, government. Non-financial companies, by contrast, had virtually negligible requirements, and issuance from this segment remained modest overall. Net of redemptions, non-financial companies in the euro area issued just €30 billion in bonds over the course of 2007 (Figure 9). In the USA, where businesses are more used to tapping the bond market for financing, issuance was certainly higher (€314 billion over the same period), but still accounted for just 15% of net issuance of long-term debt (Figure 10).

Figure 9: Net issuance of long-term debt securities in the euro area

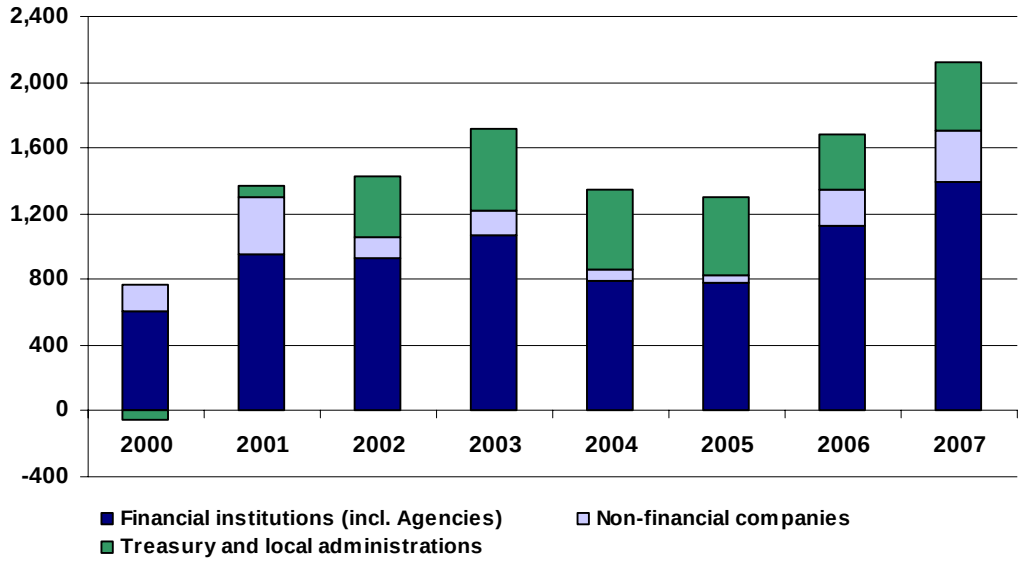
(€ billion)



Source: European Central Bank

Figure 10: Net issuance of long-term debt securities in the USA

($ billion)



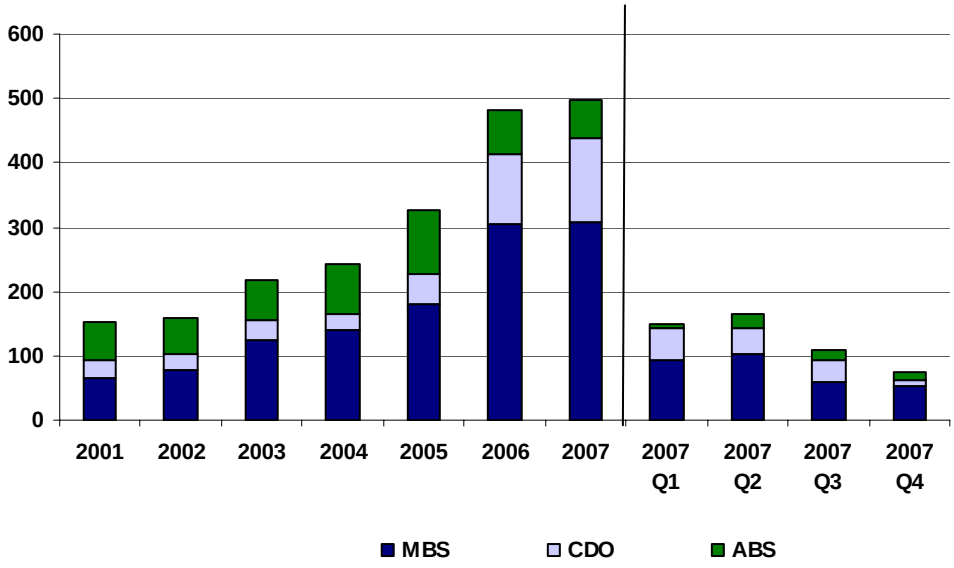
Source: Federal Reserve

A noteworthy aspect of the overall picture is the strong growth in securitisation in Europe until the subprime crisis brought it to a jarring halt in the summer (Figure 11). Over 2007 as a whole, buoyed by carry-over from the first half, issuance by securitisation vehicles amounted to €496.7 billion, exceeding 2006's robust performance[11]. The European securitisation market had been driven for two years by strong housing market growth, which fuelled large-scale issuance of commercial mortgage-backed securities (CMBS) and especially residential mortgage-backed securities (RMBS). Annual MBS issuance in 2006-2007 was sharply up on previous years, amounting to around €300 billion. The CDO market was also a major source of growth. Though modest until 2005, issuance of this type of instrument soared to around €131.7 billion in 2007, or 26.5% of the total securitisation market. In 2006, CDOs were the main investment vehicles for the riskiest tranches of structured products on the market.

[11] In the first half of 2007, issuance by securitisation vehicles amounted to €315 billion, sharply up on 2006. This trend came to an abrupt halt after the subprime crisis broke out, as investors become much more risk averse and fled all securitisation products, irrespective of their underlying assets. The statistics for the third quarter of 2007 and especially the fourth clearly illustrate the break, with issuance coming to just €107.8 billion and €73.9 billion respectively (Figure 11).

Figure 11: Issuance of securitisation vehicles in Europe

(€ billion)

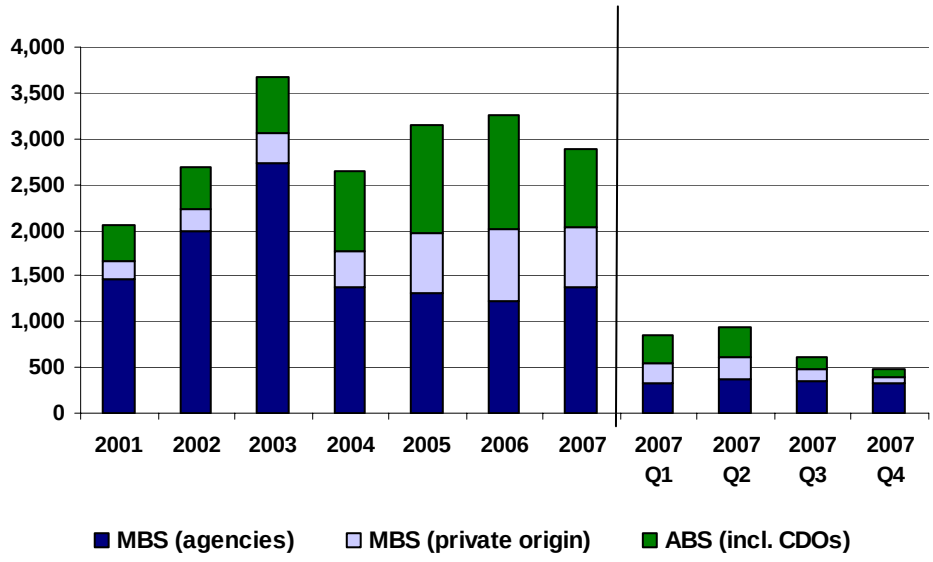


Source: European Securitisation Forum

The US securitisation market differs considerably in size and structure from the European market owing to the presence of public agencies that refinance mortgages and that help fuel much of the issuance. As in Europe, there was strong growth between 2005 and the first half of 2007 in ABS/CDOs and in MBS from private sources (Figure 12). This last category includes issuance of subprime RMBS, which was especially sustained over the period. Also as in Europe, the subprime crisis that began in the summer impacted the market's ability to continue absorbing all the existing securitisation vehicles, leading to an abrupt fall in issuance. Viewed overall, total issuance by securitisation vehicles in 2007 fell slightly relative to the previous two years.

Figure 12: Issuance by securitisation vehicles in the USA

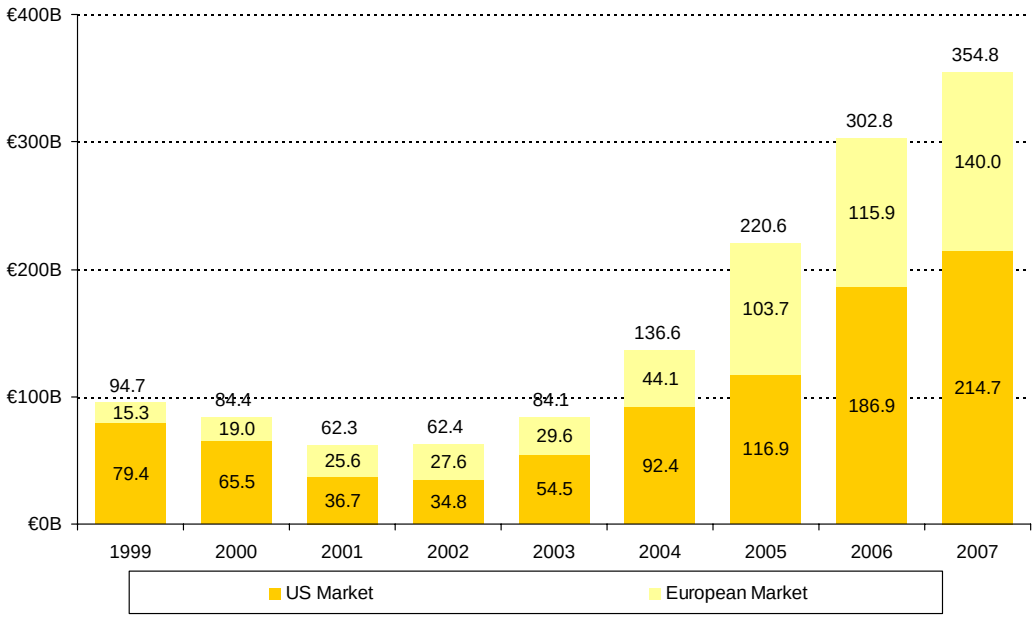
($ billion)



Source: SIFMA

The many leveraged buyouts (LBOs) and recapitalisations organised by private equity funds, and the loans that these generated, also played a big part in the expansion of the market for structured products (Figure 13). One feature of acquisitions in the first half was that bank loans were almost always refinanced through CLOs, since banks did not want to keep claims with high capital charges on their balance sheets[12]. The supply-side growth was also a response to demand from investors who were hoping that this kind of vehicle, which was riskier than a conventional loan because of its leverage, would provide additional returns in a setting of low interest rates and high corporate creditworthiness. It is enlightening in this respect to consider the statistics on the holders of leveraged loans. They clearly show how the burden of credit risk has shifted since the early 2000s. By 2006/2007 in Europe, institutional investors held almost 55% of leveraged loans, compared with just 7% at the start of the 2000s (Figure 14).

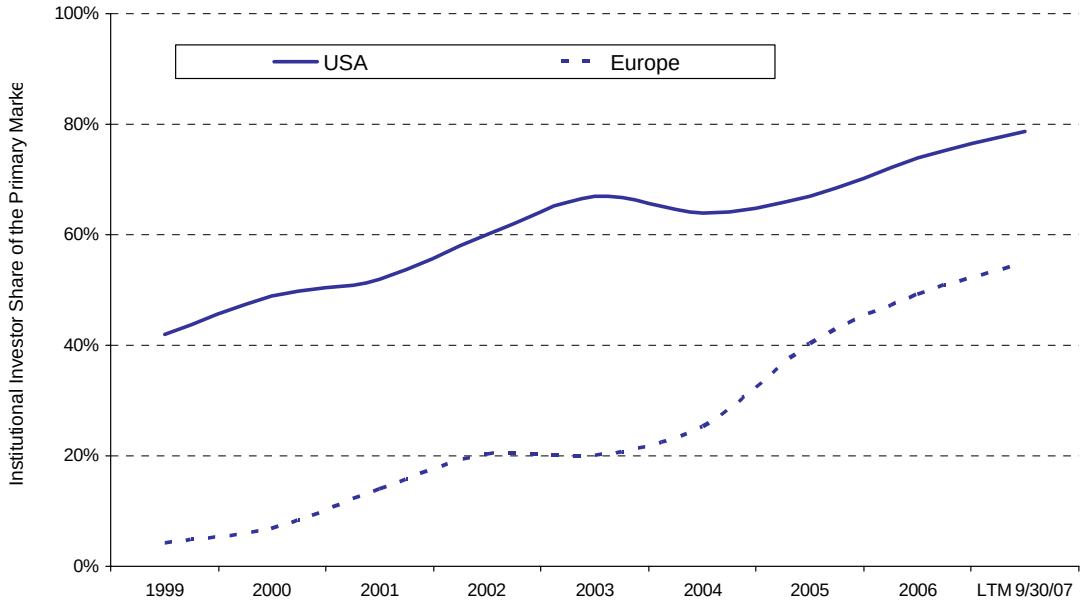
Figure 13: Loan issuance in the context of LBOs



Source: Standard & Poor's LCD

[12] Cf. ECB (2007): "Large banks and private equity-sponsored leveraged buyouts in the EU", April.

Figure 14: Institutional investor share of leveraged loans acquired on the primary market (%)



Standard & Poor's LCD

Furthermore, huge issuance of leveraged loans and their inclusion in securitisation vehicles went hand in hand with a decline in the level of creditor protection, both in Europe and the USA[13]. As institutional investors hunted frantically for returns, and with ample liquidity to invest, credit conditions were eased, and not just in the US mortgage sector. Through to the end of the first half of 2007, this was reflected in a series of developments, including:

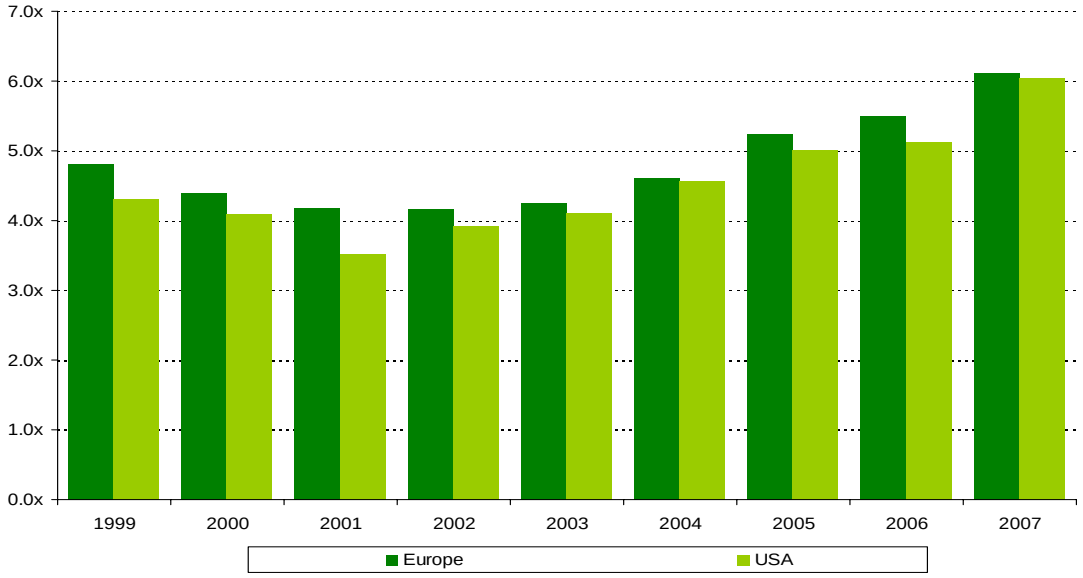
- less restrictive covenants in loan agreements. Notably, "incurrence covenants", which require the borrower to comply with certain ratios at specific times, often replaced "maintenance covenants", which require the borrower to comply with the ratios throughout the duration of the loan. Some "covenant-lite" loans actually had no financial covenants[14];

- an increase in the share of second lien loans, whose repayment is subordinate to that of senior loans, and bullet loans, which allow repayment of the principal to be deferred and so lessen the borrower's regular payments;

- increased leverage, which was reflected in an increased share of debt relative to equity contributions in buyouts and in higher debt/EBITDA ratios (Figure 15).

[13] Cf. IMF (2007): "Assessing risks to global financial stability", Chapter 1, Global Financial Stability Report, September.
[14] Cf. Fitch (2008): "Developments in the US leveraged loan and CLO markets", 7 February. Cf. also Fitch (2007): "US leveraged loan covenant decline accelerating in 2007".

Figure 15: Debt /EBITDA ratio –Leveraged buyouts



Source: Standard & Poor's LCD

2. Equity markets were affected by intense M&A activity and equity issuance

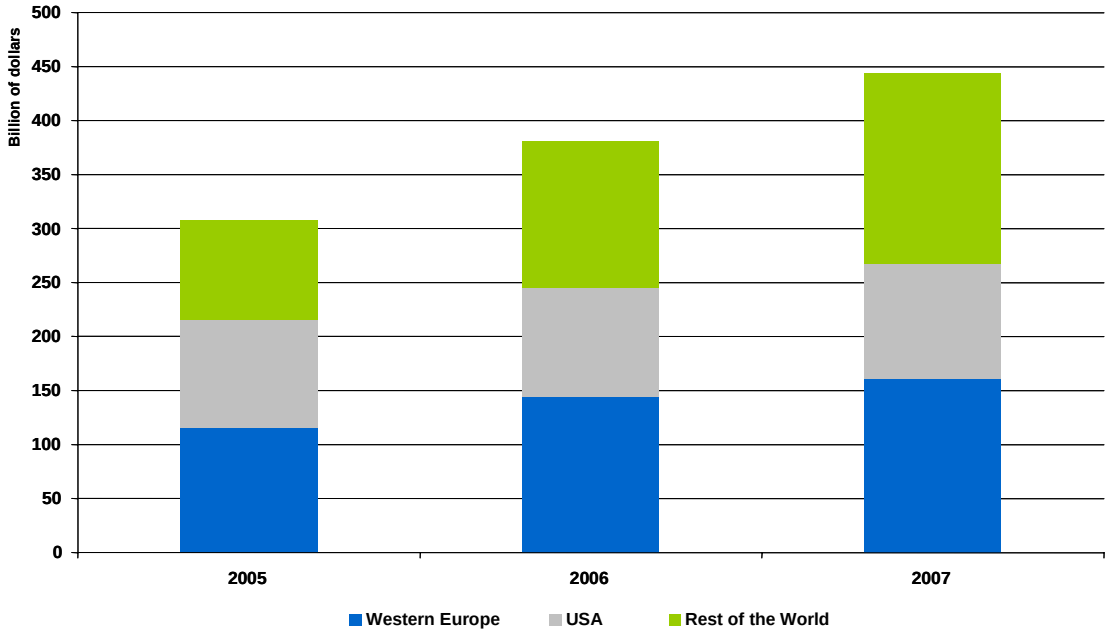
As on the bond markets, activity on equity markets was heavily shaped by the subprime crisis. Some trends that were visible in the first half vanished in the second. This shift in pace must be borne in mind when assessing the full-year performance for 2007.

Although financial conditions deteriorated in the second half of the year, equity issuance actually trended upwards overall in 2007 (Figure 16). In Europe, issuance totalled $160.9 billion, slightly higher than in 2006. US issuance came to $106.4 billion, i.e. on a par with 2006. It is always instructive to compare gross issuance against share buybacks and cancellations to capture the role of equity markets as a source of net financing for businesses. In Europe, the balance was positive and markedly higher than in 2006 (Figure 17). So despite the tendency among companies to make large share buybacks in an effort to manage their financing structures and reward shareholders, net issuance by euro area firms totalled some €67 billion, while net issuance by UK firms came to €3.3 billion. The situation in the USA was completely different. Stepping up a trend that had been in effect for many years, companies once again made enormous share buybacks that far exceeded issuance. Thus, in 2007, according to estimates by the Federal Reserve, total equity issuance net of buybacks and cancellations was a negative $572.2 billion, after a negative $465.7 billion in 2006. These statistics confirm the tendency among US firms to conduct share buybacks in order to massively distribute earnings to their shareholders[15]. They also suggest that companies were lacking investment opportunities for the substantial profits earned in recent years. Furthermore, market conditions, particularly the major share price correction in the second half of the year, may have prompted companies to accelerate their buyback programmes.

[15] Several considerations factor into a company's decision whether to reward shareholders by distributing dividends or buying back shares. Aside from tax aspects, a significant advantage of buybacks for company management is that they are not viewed by investors as permanent income. As a result, they give companies more flexibility in the total amount of profits distributed each year to shareholders.

Figure 16: Equity issuance by listed companies, worldwide

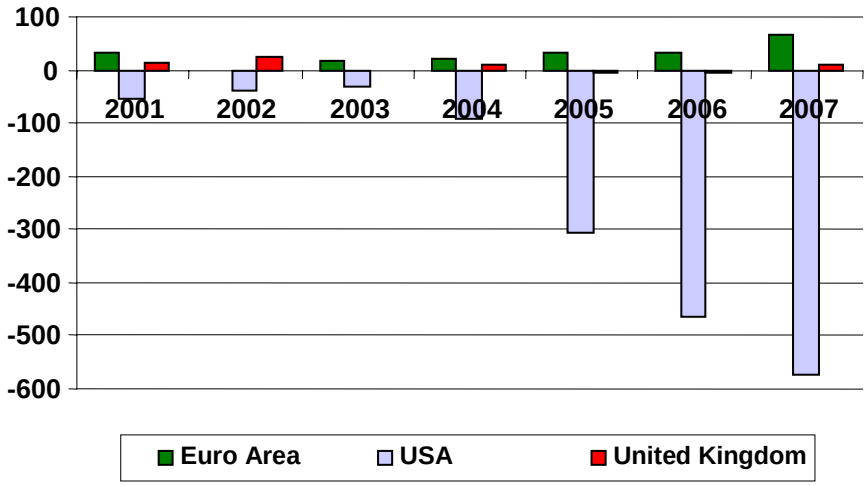
($ billion)



Source: Bloomberg

Figure 17: Net equity issuance by non-financial companies

(€ billion)



Sources: ECB, Federal Reserve and ONS

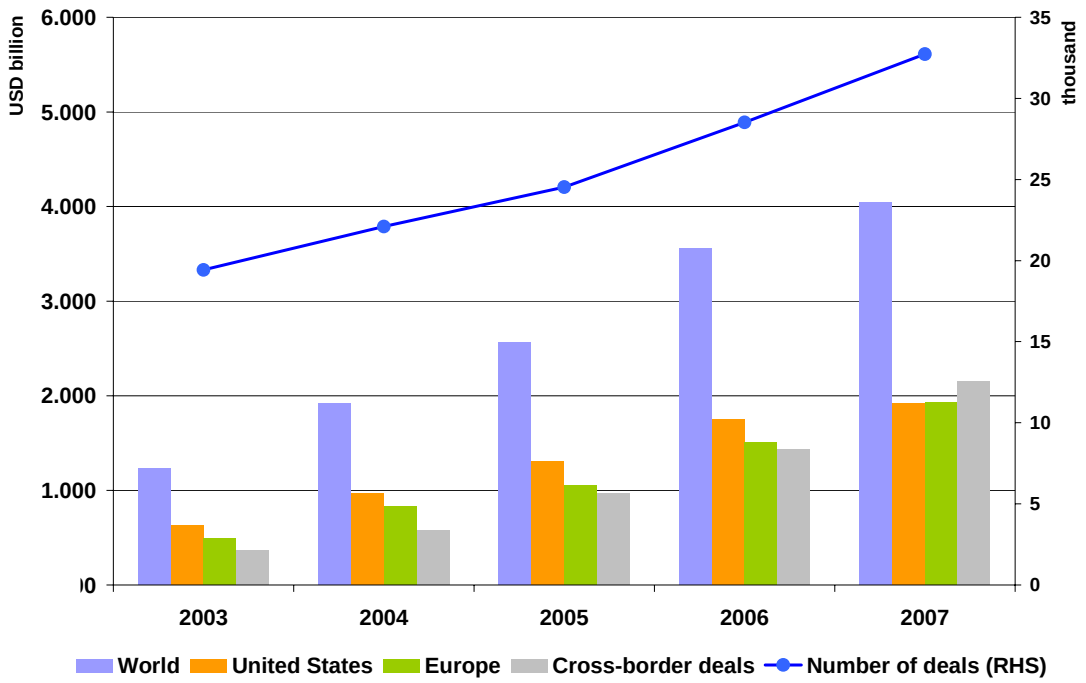
M&A activity on equity markets was intense throughout 2007. The global M&A market hit a new record as the overall value of deals exceeded $4,000 billion, which was 13.8% higher than in 2006. There was a 15% increase in the number of deals (Figure 18). France followed the general pattern in terms of the number of transactions, which increased by around 25% on 2006 according to Bloomberg, a market data provider. However, these deals were on a small scale, with the result that their total value was down 5% compared with the previous year[16]. Activity peaked in the second quarter. Because the deterioration in

[16] The number of AMF-approved public takeover bids that were carried out increased from 67 in 2006 to 76, but the value of the deals fell sharply, from €27 billion in 2006 to €14 billion in 2007 (based on deals whose results were

financial conditions from the summer onwards was unfavourable to large-scale deals, there were fewer of them in the second half of the year. Indeed, the largest deals reported in 2007, including the takeover of ABN AMRO by a consortium made up of Fortis, Banco Santander and Royal Bank of Scotland, took place in the first seven months, before the onset of the subprime crisis (Table 2).

The M&A market in 2007 was similar to that of previous years in significant ways. Cross-border deals continued to rise at the same pace as in 2006 (with a 50% increase in value terms). In 2007, one-quarter of all M&A deals involved companies from different countries, and cross-border transactions alone accounted for more than one-half of total deal value. There was similarly little change relative to 2006 from a sector perspective, that is, M&A transactions involved a diverse range of sectors, although banking and financial companies made up a relatively large share of deal value.

Figure 18: M&A activity, by region



Source: Bloomberg

published in 2007). However, a closer analysis reveals that the valuation method played a large part in this result. Under the standard method, which is used to compile AMF statistics, share exchange offers are not valued. Information providers, though, value such deals at the opening price for the purposes of making international comparisons. While activity in 2006 was heavily supported by major standing market offers (Sanef, Autoroutes du sud de la France and Autouroutes Paris-Rhin-Rhône), 2007 featured some large combined offers, including NYSE-Euronext and AGF/Allianz.

Table 2: Largest deals in 2007, worldwide

Announced in	Target	Acquirer(s)	Amount ($ billion)
April 2007	ABN AMRO	FORTIS/BANCO SANTANDER/ROYAL BANK OF SCOTLAND	100.0
April 2007	ENDESA	ACCIONA/ENEL	53.3
February 2006	ENERGY FUTURE HOLDINGS	KKR & CO/TPG	43.2
July 2007	ALCAN	RIO TINTO	42.9
June 2007	BCE	PROVIDENCE EQUITY PART/ONTARIO TEACHERS PENS/MADISON DEARBORN PART/MERRILL LYNCH & CO	42.4
May 2007	CAPITALIA	UNICREDITO ITALIANO	29.6
April 2007	FIRST DATA	KKR & CO	27.5
May 2007	ALLTEL	TPG CAPITAL/GOLDMAN SACHS GROUP	27.1
July 2007	HILTON HOTELS	BLACKSTONE GROUP	26.2

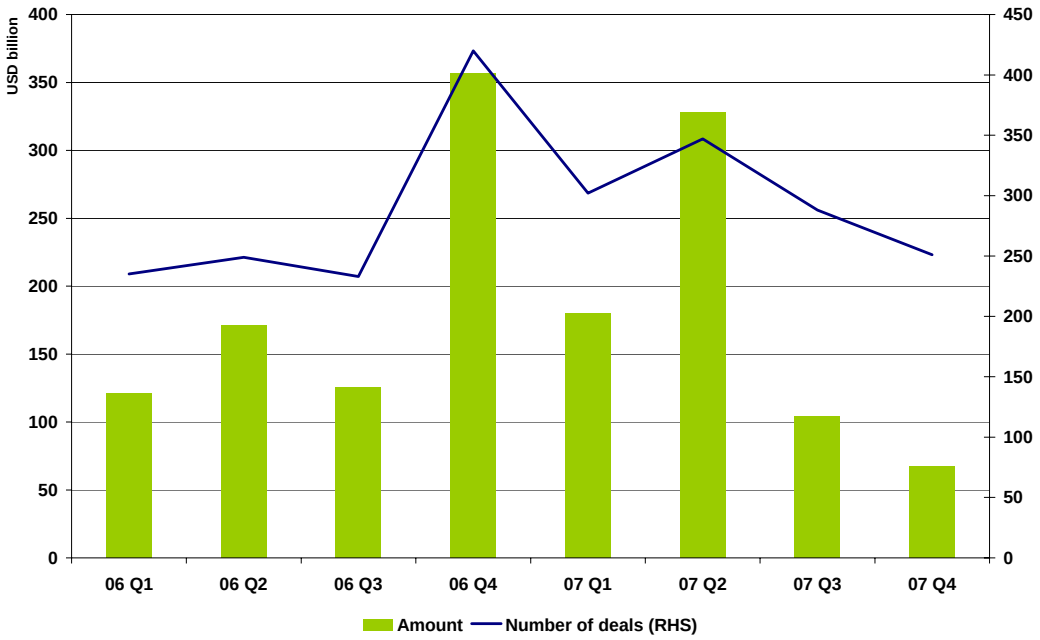
Source: Bloomberg

Intense M&A activity through to the end of the first half of 2007 was coupled with growing importance of private equity funds, which had already played a significant role in the previous year. Although these funds are theoretically confined to the unlisted sector, some of them, through massive fund raising and easy access to the debt market, acquired major financial firepower that allowed them to extend their acquisition policy to include large – in some cases listed – companies. In 2007, worldwide buyouts by private equity funds totalled $679.2 billion, or around 17% of the total value of M&A deals over the same period (Figure 19)[17]. Ranking 2007 M&A deals by size clearly reveals the important role now played by some of these funds, such as KKR, which took part in the takeovers of Energy Future Holdings (over $43 billion) and First Data ($27.5 billion), or Blackstone, which acquired Hilton Hotels for $26.2 billion.

[17] In Europe, it is noteworthy that of all the leveraged buyouts by private equity firms on European companies, almost half of the deals (by value) involved listed targets. It should be pointed out that these buyouts of listed firms are not representative of the activity of private equity investors, whose chief focus is financing the development or leveraged buyouts of small and medium-sized unlisted companies. Deals targeting listed companies are inherently much larger in size, which skews the analysis. A very different picture emerges if only the number of deals is taken into account.

Figure 19: Leveraged buyouts reported, worldwide

($ billion)

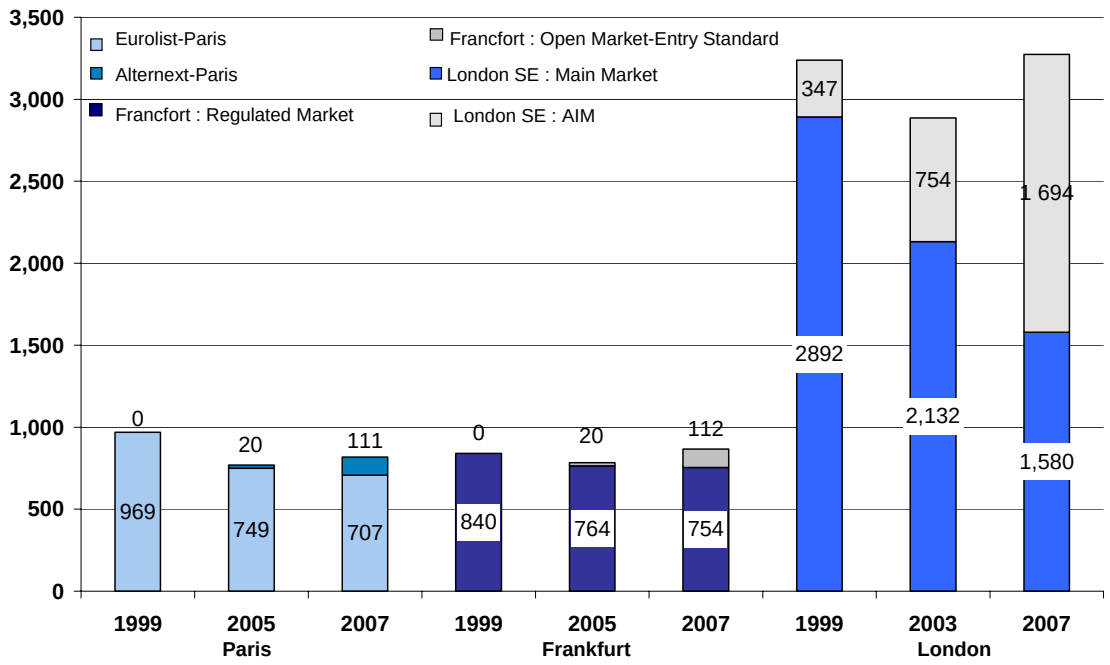


Source: Bloomberg

3. Listing on regulated markets continued to decline to the benefit of unregulated "organised" markets

The recent trend towards an increase in listed companies continued on the leading European exchanges in 2007. But in the three main financial centres, the increase was chiefly attributable to improved access for small and mid-sized enterprises (SMEs) to equity markets, and more specifically to the rise of markets or market segments dedicated to mid caps, namely the Alternative Investment Market (AIM) of the London Stock Exchange (LSE), Alternext on Euronext and the Entry Standard segment of the Frankfurt Open Market. Regulated markets experienced continued shrinkage in 2007, to the point that for the first time, the LSE had more companies listed on the AIM than on its main market (Figure 20).

Figure 20: Number of listed companies in Paris, Frankfurt and London

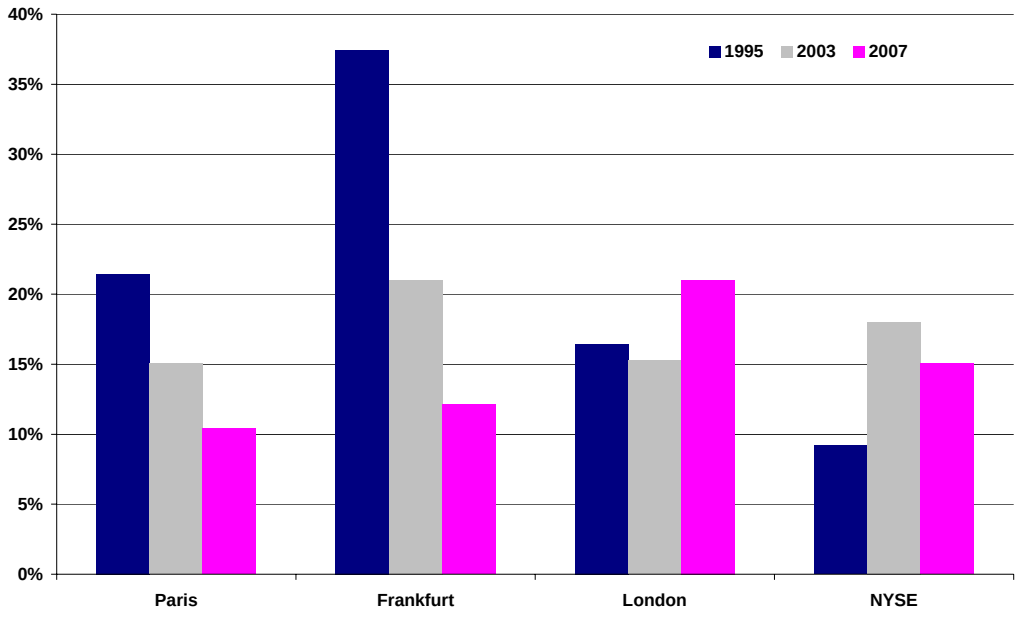


National sources
Notes: Eurolist-Paris is the result of the 2005 combination of the Premier, Second and Nouveau Marchés. Similarly, the Frankfurt regulated market was created from the merger of the Amtlicher Markt and the Geregelter Markt. Data for the Neuer Markt are included before 2003. Alternext and the Entry Standard segment were set up in 2005.

The increase in the number of listed companies has been accompanied in some countries by a decline in the presence of foreign firms (Figure 21). The proportion of non-French companies listed in Paris has been falling steadily and relatively sharply since the mid-1990s, from 20% in 1995 to just 10% at the end of 2007[18]. This decline should be seen in the context of the persistently low proportion of IPOs by foreign companies in Paris[19] coupled since 2003 with an increase in the number of delistings by multi-listed foreign companies looking to refocus on their main market. This trend is certainly not confined to France. A similar pattern has been observed in Germany, where numbers of foreign firms have declined even more markedly. More recently, the NYSE has also become far less attractive since the Sarbanes Oxley Act came into force in 2002, bringing tighter regulations for listed companies. This situation contrasts with that of the LSE, which has seen an increase in the proportion of foreign listed companies. Between 2004 and 2007, one-quarter of IPOs on the LSE and, more importantly, almost half of the funds raised during these offerings, were attributable to foreign companies, which accounted for over 20% of all companies listed in London at end-2007.

[18] Excluding Marché Libre, including Alternext.
[19] They accounted for just 10% of IPOs between 1995 and 2007 and most were the direct result of takeovers.

Figure 21: Proportion of foreign companies in population of listed firms (%)



National sources
Note: Paris excl. Marché Libre, incl. Alternext; LSE incl. AIM; Frankfurt excl. Freiverkehr, incl. Open Market Entry Standard

4. OTC markets experienced strong growth, driven mainly by credit derivatives

Overall, derivatives markets remain on a trajectory of rapid growth. Demand for this type of instrument is underpinned by major factors of support connected with developments in asset management and financial innovation by investment banks. Changes to asset management vehicles are tending to create ever-greater reliance on derivatives markets, linked in part to the swift and widespread rise of hedge funds and, in some countries, structured funds. Also, issues of structured finance products such as CDOs in recent years have stimulated demand for credit derivatives.

The statistics for first-half 2007 show that organised and OTC derivatives market posted contrasting growth performances. The notional principal outstanding in derivatives traded grew far less quickly on organised markets (14.5%) than on OTC markets (39.8%) as measured year-on-year at end-June (Tables 3 and 4). Organised markets were hurt by fairly modest growth on their main segment, which is concentrated on interest rate derivatives (12.1% year-on-year growth at end-June). Meanwhile, the segments for foreign exchange contracts and equity derivatives, which are smaller according to indicators published by the Bank for International Settlements (BIS), grew vigorously, putting on 61.2% and 38.7% respectively.

OTC markets, by contrast, were strong across all segments. Interest rate derivatives were up 32.4% year-on-year in June, while foreign exchange contracts increased by around 28%. Credit derivatives stood out with annualised growth of 109%. This remarkable performance saw the total notional principal outstanding in credit derivatives ($42.6 trillion) draw closer to the total notional amount of foreign exchange contracts ($48.6 trillion).

Table 3: Derivatives markets – organised markets (notional amounts, $ billion)

	Dec. 2005	June 2006	Sep. 2006	Dec. 2006	June 2007	Chg, yoy (%)	Sep. 2007	Chg, yoy (%)
Foreign exchange	174	181	194	240	303	67.8%	310	59.8%
Interest rate	52,297	76,829	68,075	62,593	86,135	12.1%	83,632	22.9%
Market indices	5,318	7,388	7,304	7,611	10,246	38.7%	10,941	49.8%
Total	**57,788**	**84,398**	**75,572**	**70,443**	**96,684**	**14.6%**	**94,883**	**25.6%**

Source: BIS

Table 4: Derivatives markets – OTC markets (notional amounts, $ billion)

	June 2005	Dec. 2005	June 2006	Dec. 2006	Chg, yoy (%)	June 2007	Chg, yoy (%)
Exchange rate	31,081	31,364	38,091	40,239	28.3%	48,620	27.6%
Interest rate	204,795	211,970	261,960	291,115	37.3%	346,937	32.4%
Equity	4,551	5,793	6,782	7,488	29.3%	9,202	35.7%
Commodity	2,940	5,434	6,394	7,115	30.9%	7,567	18.3%
Credit default swaps	10,211	13,908	20,352	28,650	106.0%	42,580	109.2%
Other	27,915	29,199	35,928	39,682	35.9%	61,501	71.2%
Total	**281,493**	**297,670**	**369,507**	**414,290**	**39.2%**	**516,407**	**39.8%**

Source: BIS

5. Investment funds are increasing their presence on financial markets

Institutional investors, from pension funds to insurance companies and collective investment schemes (CIS), are major holders of assets on financial markets. This has long been true for Anglo-Saxon economies, because of their funded pension systems. It has more recently become the case in continental Europe. Some types of professional investor have experienced especially strong growth in recent years, namely hedge funds, private equity funds and sovereign wealth funds.

These funds have grown for different factors. Hedge funds and private equity funds have been lifted by substantial demand from traditional institutional investors and some wealthy private investors looking to diversify their portfolios and invest in assets that are supposedly uncorrelated with the main market indices[20]. Also, with some assets – particularly government bonds – offering extremely low yields in a setting of excess liquidity, many investors started looking for additional returns from leveraged, illiquid financial instruments. There has been constant change on the supply side, too, which has become more organised. Private equity, for example, has become a far more professional industry. The rise of sovereign wealth funds is attributable to a completely different set of factors. Owned by governments or public bodies, these funds are financed by a variety of sources, ranging from oil revenues in the case of oil-

[20] Private equity funds considerably differ by nature from hedge funds. According to AFIC (Association Française des Investisseurs en Capital) private equity is defined as an equity investment in the capital of an unlisted company or a company which is not intended to be listed. This investment is made in order to allow the financing of the company's start-up, development or buyout phase. The holding period of an investment is, as a general rule, between 3 to 7 years.

producing countries like the United Arab Emirates, Norway and Saudi Arabia, to trade surpluses and foreign reserves in the case of some Asian countries, including China, Singapore and Hong Kong[21]. They also have a variety of purposes. Some play a budget-smoothing or stabilising role, especially in economies whose main financial resources depend on volatile markets like food or commodities. Others have a longer-term goal, such as intergenerational wealth transfer. They may also be geared to optimise the management of foreign reserves.

It is hard to estimate exactly what presence these funds have on different market segments. At the end of 2007, hedge funds managed a portfolio estimated at $1,070 billion excluding leverage (and excluding funds of hedge funds), which was 32% higher than in 2006 (cf. below). Sovereign wealth funds were estimated to hold assets of over $3,000 billion in 2007 (Table 5), and projections suggest that this figure will increase substantially over the coming years[22]. While it is difficult to estimate the assets managed by private equity operators, their fund-raising has been growing strongly worldwide since the mid-2000s, reaching around €74 billion in Europe in 2007. Also, note the value of M&A deals in which they were involved (cf. above) and the proportion of leveraged buyouts by these funds involving listed companies.

Table 5: Sovereign wealth funds, worldwide
(estimated assets based on data for 2004-2007)

Country of origin	Fund	Assets ($ billion)
United Arab Emirates	Abu Dhabi Investment Authority (ADIA)	875
Singapore	Government of Singapore Investment Corporation (GIC)	330
Norway	Government Pension Funds - Global (GPFG)	322
Saudi Arabia	Various funds	300
Kuwait	Kuwait Investment Authority (KIA)	250
China	China Investment Company Ltd.	200
Hong Kong	Hong Kong Monetary Authority Investment Portfolio	140
Other countries		773
Total		**3,190**

Source: Deutsche Bank research

Total assets under management is not the only way to measure the presence and potential influence of these investors on financial markets. Hedge funds hold a relatively small share of securities compared with the capitalisation of the main equity and bond markets. However, they occupy a significant share of certain specific markets for complex and/or risky assets that more conventional investors usually stay away from. Hedge funds are typically reckoned to be major holders of the equity tranches of securitisation vehicles. The management techniques used by hedge funds mean that they may account for a very large or even dominant share of buying and selling flows on some market segments (Table 6). According to statistics, hedge funds are responsible for 30% of trades on equity markets and 60% of trades on CDS markets.

[21] Cf. Kern, S. (2007): "Sovereign wealth funds – state investments on the rise", Deutsche Bank Research, 10 September. See also IMF (2007): "Sovereign wealth funds", Annex 1.2., Global Financial Stability Report, October.
[22] Morgan Stanley (2007): "How big could sovereign wealth funds be by 2015?", Morgan Stanley Research, 3 May.

Table 6: Share of hedge funds in financial instrument trading, in the US

	%
Equity markets (cash)	30
Credit derivatives "plain vanilla"	60
Structured finance products	33
Emerging bond markets	45
Distressed debt	47
Leveraged loans	33
High-yield bonds	25

Source: Financial Times using Greenwich Associates data

The approaches to portfolio allocation and shareholding strategies of these funds also have to be taken into account. Whereas traditional investment funds usually have well-diversified portfolios and follow a passive shareholding approach, hedge funds, private equity funds and sovereign wealth funds sometimes take huge stakes in certain companies and may pursue activist shareholder strategies. Sovereign wealth funds, for example, recently acquired large stakes in the capital of several major US banks as part of post-subprime recapitalisation efforts. Some hedge funds took an aggressively activist stance as they sought to influence the industrial strategies of Deutsche Borse, Euronext, and ABN AMRO. As for private equity funds, their value added lies precisely in their involvement as majority shareholders in the governance and strategy of the companies in their portfolios. Moreover, this may lead to delistings, since company restructurings do not necessarily adapt well to all the constraints associated with listing, notably in terms of reporting.

Increased shareholder activism may also be accentuated in some countries by a shift in the behaviour of traditional investors, particularly CIS. In France, the last stock market cycle seemed to bring a change in shareholder behaviour at general meetings. One visible sign of the shift was the increase in attendance rates, which increased to two-thirds of the shares of SBF250 companies in 2007, compared with 58% in 2004, according to Proxinvest, a proxy voting advisory firm. This increase was supported by the introduction of measures designed to improve the participation of institutional investors at general meetings. For example, the Financial Security Act of 1 August 2003 requires management firms to exercise the voting rights held by the CIS under their management or explain why they did not. More recently, the requirements for taking part in general meetings were modified following the introduction in late 2006 of the record date principle[23]. Another sign of the more active participation of shareholders is the increased proportion of challenged resolutions, which reached a record in 2007 of 5.1% of the total number of votes cast for SBF 250 companies, up from with 1.27% in 1999[24].

[23] According to this principle, access to the general meeting is determined by the list of shareholders drawn up three days before the meeting. This facilitates voting by shareholders, especially non-residents. An annual member survey by the French Asset Management Association (AFG) found that 70% of management firms surveyed had stepped up their attendance of general meetings in 2007.

[24] Source: Proxinvest. Some of the most significant challenges were in the following areas: anti-takeover measures, amendments to articles of association that curbed shareholder rights, capital increases without pre-emptive rights, and transactions reserved for employees and directors (free shares, options, company savings schemes).

II. TRADING AND POST-TRADE INFRASTRUCTURES

Market infrastructures have undergone major changes in recent years. Stock exchanges' strategies can be seen as a move towards consolidation, combined with diversification into other activities that could be more profitable than their conventional cash equity trading operations. Regulators must pay special attention to these strategies, because the underlying choices with regard to market infrastructures are mostly irreversible and, consequently, warrant a harmonised regulatory framework at the international level. Regulators' vigilance is also required because some of the specific complexities in the organisation of financial markets make it difficult to foresee the effects that such choices will have on competition between trading venues and the fragmentation of liquidity.

1. The accelerating pace of change in market infrastructures stems from regulatory and technical developments

We can identify three structural factors of change in market infrastructures.

- The first is the evolution of stock exchanges' governance and their transformation into "market undertakings". Governance of stock exchanges has changed substantially over the last ten years. The usual phases of these changes have been demutualisation, followed by listing (Figure 22 and Table 7). These changes probably stem from the difficulties of mutually owned structures to cope with the demands for change and development in modern markets. In all events, the changes have had two types of effects. The first is the effect on ownership, as brokers who had formerly been members of the exchanges sold off significant stakes in listed exchanges, in particular to hedge funds. More generally, the second effect relates to the change of the exchanges' business model and its impact on the balance of power between the various stakeholders. The implications of this change have yet to be fully assessed, but it is already clear that some clients, especially institutional investors and hedge fund managers, have increased their influence relative to listed companies. Strong growth of their assets under management, which is likely to continue, has meant that institutional investors, and mutual funds in particular, account for a larger share of stock exchanges' revenues, especially their revenues from equity trading. Alternative investment funds and hedge funds may have fewer assets under management, but their active management strategies mean that they generate a substantial proportion of trading volume, which is the basis for the exchanges' revenues. Such funds may account for up to 40% of the trading volume on the London Stock Exchange (LSE) and 30% on Deutsche Börse[25].

[25] See Rupak Ghose (2006).

Figure 22: Phases in stock exchange governance changes over the last twenty years

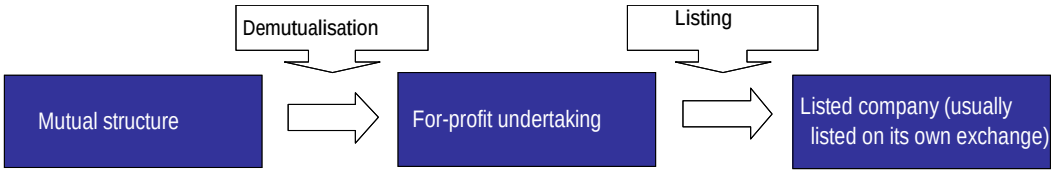


Table 7: Listings of major equity exchanges

Exchange	Countries of operation	IPO
OM Group	Denmark, Finland, Sweden, Baltic countries	1987
Australian Stock Exchange	Australia	1998
Hong Kong	Hong Kong	2000
Singapore Exchange	Singapore	2000
Deutsche Börse AG	Germany	2001
Oslo Exchange	Norway	2001
Instinet (ECN)	USA	2001
Euronext	Belgium, France, Netherlands, Portugal, UK	2001
London Stock Exchange	UK	2001
Nasdaq	USA	2002
CME	USA	2002
NYSE	USA	2004
CBoT	USA	2005
Bolsas y Mercados Españoles	Spain	2007
São Paulo Stock Exchange	Brazil	2007
CBoE	USA	2007

- Technological progress is the second factor of change in market infrastructures. As open outcry trading has been phased out, markets structured around screen-based systems and electronic order books have gradually become the norm. The widespread switch to electronic systems has many implications. It facilitates access to markets, and it is noticeable that some investors require more and more frequently direct market access[26]. It also creates more possibilities for connections between different systems and operators, which will help consolidate pools of liquidity dispersed among separate trading venues. Ultimately, it will make increasing integration of the value chain possible, from the implementation of investment strategies to post-trade processing.

  As we can see, technological progress primarily affects the nature of the services on offer and makes it possible to customise them with optional features to meet the needs of certain customers or segments of the customer base. But, above all, the widespread switch to electronic trading system has slashed the cost of trading infrastructures and their management. This opens up competition for the core business of established markets, as can be seen in the example of BATS,

[26] Direct Market Access (DMA) may refer to different real-life situations, depending on whether the notion reflects the desire simply to shorten execution times and leads to a form of relocation of the market intermediaries' connection infrastructures to their customers' premises, or whether it reflects the investors' desire to become market members.

which has grown from a very small financial base to become the third-ranking equity market in the USA in only two years.

- Changes in market regulation is the third factor. It seems to be fairly closely linked to the other two factors because it reflects the market changes mentioned above. But the adoption of the Markets in Financial Instruments Directive (MiFID) in Europe in November 2007 and the amendments to Regulation NMS (National Market System) in the USA in October 2007 are also aimed at organising future market developments in order to reduce transaction costs through competition between trading systems and, ultimately, to lower financing costs for companies.

2. There are various strategic reasons for the recent increase in initiatives taken by market undertakings

Broadly speaking, stock exchanges use two types of strategies.

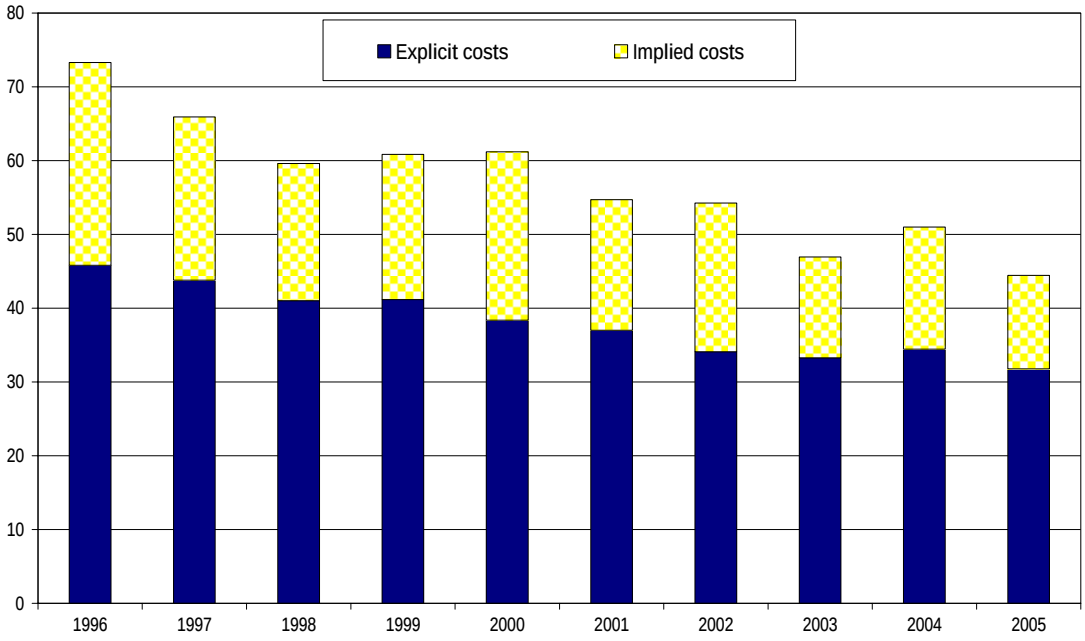
The first type consists of defensive strategies. In recent years, the exchanges' quest for growth led to a growing number of alliances, cross-shareholdings and takeovers by major players, such as the mergers of NYSE and Euronext, Borsa Intaliana and the London Stock Exchange, or Nasdaq and OMX. This quest can primarily be seen as a move to preserve newly vulnerable positions in the exchanges' historical core business of cash equity trading. Generally speaking, external growth strategies are aimed at achieving economies of scale by consolidating technical infrastructures. Large players however also enjoy a specific advantage in terms of market participation and, thereby, greater liquidity. In this respect, markets can be seen as networks where the members' advantages increase with the number of participants[27].

The fact that these strategies are called defensive may be a surprise, given the large profits earned lately in this business sector. But cyclical factors, such as the increased volatility of markets in a crisis, explain much of the current profitability. At a more fundamental level, the outlook for growth in primary markets is restricted and keener competition will limit their potential profitability[28]. Meanwhile, on secondary markets, the structural trend towards higher trading volumes, as institutional investors shorten the time horizons for their trading portfolios and alternative investment strategies develop, could mean smaller profits for stock exchanges in the future, because investors and intermediaries are increasing pressure to bring down transaction costs by seeking out or even creating competing execution venues (see below).

Ultimately, the squeeze on the exchanges' revenues from cash equity trading (see Figure 23) is bound to become more intense as regulatory changes in Europe and the USA organise and promote keener competition.

[27] This can be understood as a principle whereby "liquidity begets liquidity".
[28] Listings of small caps and mid caps and emerging companies seem to be a major growth area. The success of London's Alternative Investment Market (AIM) spurred various exchanges to actively seek out foreign issuers, particularly from Russia and Asia. For example, Euronext developed the Alternext market for such issuers in Paris and, more recently, a market reserved for qualified investors, with looser transparency requirements for issuers.

Figure 23 – Changes in worldwide transaction costs (1995-2005*) (bp)



*Source: Elkins-McSherry Transaction Cost Analysis. * Sample: data from 235 institutional investors operating on 208 exchanges in 42 countries in 2005 for a trading amount of 5 billion dollars. Explicit costs (directly observable): commissions paid to intermediaries, duties and taxes. Implied costs: liquidity costs (measured by the price spread and estimated market impact).*

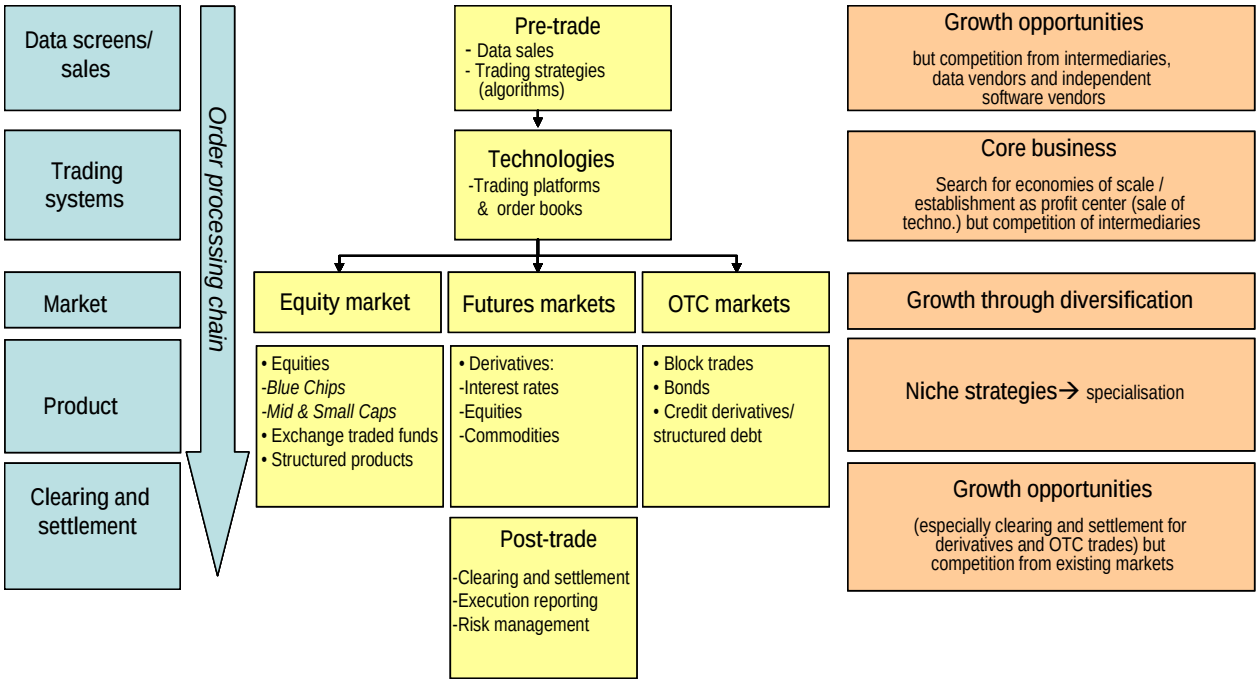
The second type of strategy is offensive, aimed at finding new growth areas and diversifying revenues. They primarily reflect the participants' desire to differentiate themselves by entering less mature markets where the competition is weaker. Even though it is hard to generalise, these strategies can be broken down into vertical diversification strategies and horizontal diversification strategies (see Figure 24).

Horizontal diversification of trading services leads exchanges to markets with stronger growth potential, dealing in products that are not as standardised as cash equity trading. The advantage of this diversification is that it shelters exchanges from the cyclical shifts that affect their revenues from cash equity trading. It primarily involves regulated derivatives markets[29], but it also encompasses more exploratory operations relating to products that are mainly traded over the counter at present (bonds, derivatives, investment funds, commodities, etc.) Consequently, this diversification is likely to have an impact on innovation.

Vertical diversification involves the provision of pre-trade services in the order-processing chain. This may be the provision of data and solutions for integrating and rerouting order flows, or else the provision of post-trade services, such as clearing and settlement.

[29] The examples of LIFFE for NYSE Euronext and Eurex, created out of the merger between Deutsche Terminbörse and SOFFEX (Switzerland) were the first steps in this diversification trend. More recent examples, such as the takeover of SFE by ASX in Australia in 2006 or the merger of the Montreal Stock Exchange with the Toronto Stock Exchange in 2007, show that the trend is continuing.

Figure 24: Stock exchanges' growth and diversification strategies



There are two areas here that are worthy of special attention. The first is trade execution, especially with the changes in European and North American regulations. The second is post-trade services, which take on a special strategic importance in derivatives markets, especially OTC markets, where the ability to automate settlement processing seems to be a key to accessing to trading on these markets on revenues, as well as to related revenues.

3. The impact of the new regulatory trade-offs between competition and fragmentation of equity markets has yet to be assessed

Financial regulations take on particular importance when it comes to market infrastructures because they drive choices that are difficult to reverse. Decision-making in this area is fraught with difficulties stemming from the multitude of legacy systems and rules, and the sensitivity of transaction flows to details of market structures.

In equity trading, established markets are encountering competition from many innovative new systems, such as Alternative Trading Systems (ATS). The new systems use a range of technologies to provide securities trading for diverse customer bases. Nevertheless, they can be broken down into three broad categories (see Table 8), according to their role in the price discovery process or their transparency:

- Dark pools of liquidity, which make connections between hidden pockets of liquidity outside of regulated markets. They are used for trading illiquid stock or making large block trades and they are not subject to rigorous pre-trade disclosure requirements. Prices are negotiated in private and independently of the public price discovery process.
- Crossing networks, which match ("cross") orders at prices imported from regulated markets and usually execute them at the midpoint of the bid-ask spread or at the auction price. They speed up the price discovery process, but without adding any informational value.

- Electronic Communication Networks (ECNs), which are based on a private electronic order book. These trading platforms contribute to the price formation process and, thereby, contribute information about latent supply and demand.

Table 8: Classification of the leading Alternative Trading Systems

Dark-pool platform	Crossing network (imported prices)	Electronic order book
Liquifi (Citi) **Sigma X** (Goldman Sachs) **CrossFinder** (Credit Suisse) BNY ConvergEx SmartPool Bids	Liquidnet POSIT (ITG) NYFIX Millenium	**Turquoise** (consortium) BATS **Chi-X** (Instinet/Nomura) Equiduct Nasdaq-OMX

Degree of transparency →

- Mixed governance (exchange/intermediary) or exchange subsidiary
- Financial intermediary (*agency broker, ISP*) - Bold : investment bank
- Independent ATS

In all, these systems seem to have adopted new, and sometimes very aggressive, pricing principles for execution services (where, for example, orders contributing to liquidity may even be remunerated). They may also meet certain specific needs of institutional investors with regard to price ticks, processing speed, automation of complex decision-making processes, and anonymous trading.

However, the counterpart to the expected benefits of competition between trading venues mentioned above could be the risk of fragmenting liquidity. It is still hard to say how sensitive the regulated markets' business will be to competing initiatives under the new regulatory framework. This calls for an analysis of the potential for executing trades outside of regulated markets and thus for making trades that do not contribute to a single price formation process that constitutes a recognised standard for valuing underlying assets.

Two observations can shed light on the analysis, but do not necessarily simplify the task. The first is that regulated market structures are changing in response to this competition and in response to users' new needs. For example, various recent initiatives by NYSE Euronext should be interpreted from this angle:

- The acquisition of controlling interests or substantial stakes in alternative trading platforms (SmartPool in Europe and BIDS in the USA);
- Euronext's internal matching facility, developed as the entry into force of the Markets in Financial Instruments Directive (MiFID) approached incorporates a major change in the order matching algorithm as it allows changes in the price-time priority rules. In a similar vein, Euronext reduced its minimum pricing increment to meet the needs of arbitragers and others;

- At a more fundamental level, NYSE Euronext is developing a unified trading platform as part of its transatlantic merger. The new system is likely to come with new features.

Similarly, other exchanges also adapt their market structures such as, for example, the London Stock Exchange, which intends to circumvent taxation of equity trades by offering to process trades in contracts for difference (CFDs) through its order book[30].

The second observation is that the dynamic nature of competition calls for medium-term monitoring. The first wave of competition for American regulated markets from ECNs in the late 1990s ended largely in failure, despite the early promise of some initiatives. Few of those initiatives survived, and those that did were taken over by the regulated markets themselves. More generally, history tends to show that few competing initiatives have been able to vie with the established pools of liquidity in blue chip markets[31].

In the short term, however, attention should be paid to the interplay of best-execution rules in Europe. This can be done through the market monitoring system that has already been implemented as part of data exchanges between Europe's national regulators under CESR's Transaction Exchange Mechanism (TREM). This monitoring process is needed to assess the degree of fragmentation induced by the new platforms since MiFID entered into force. Yet, cases of substantial fragmentation of liquidity for blue chips are still relatively rare. At this stage, Chi-X seems to be the most advanced initiative since MiFID (see Table 9). However, initiatives announced by Turquoise and Nasdaq-OMX could possibly change the picture.

Table 9: Percentage of trading volume executed on Chi-X Europe*

Stock	Date	%
Philips Kon ORD	1 October 2007	21.00%
British Energy Group	6 December 2007	20.81%
Royal Dutch Shell (London)	5 October 2007	20.42%
ING Groep ORD	18 December 2007	19.52%
BASF	1 October 2007	18.78%

* "Percentage of Combined Chi-X Europe and Primary Exchange Volume Executed on Chi-X Europe". Source: Chi-X® Europe Trading Statistics -Q4 2007 (http://www.instinet.com/about/releases/Chi-X_Europe_Q4_2007_trading_stats_.pdf)

More fundamentally, some pre-MiFID studies show that the services rendered by crossing networks, which seem to be a response to the specific need to expand interdealer markets, do not undermine the price formation process on regulated markets[32]. But we still need a more general assessment of how the structural factors of financial market growth, such as the expansion of institutional asset management, are likely to hinder the development of trading outside of the regulated markets.

[30] A CFD is a contract under which the seller will pay the buyer the difference between the current value of the underlying asset (an equity in this case) and its value upon exercise of the contract, which does not have a fixed expiry date in this case. If the difference is negative, the buyer owes the seller the difference.

[31] Cf. T. Foucault, A. Menkveld; (2008) "*Competition for Order Flow and Smart Order Routing Systems*", Journal of Finance, American Finance Association, vol. 63(1), February, highlights the fact that, despite the failure of the Dutch Trading Service in London to vie with the trading of Dutch securities on Euronext Amsterdam, the competition between the two trading venues did produce benefits.

[32] See "*The Effect of Crossing-Network Trading on Dealer Market's Bid-Ask Spreads*", C. Gresse, 2006, and the presentation to the AMF scientific colloquium on 14 May 2007 (available for download on the AMF website).

4. Post-trade infrastructures: increasingly challenging risks and strategic issues

The more competitive framework for post-trade infrastructures in Europe raises many operational issues. This explains the technical complexity of the European Commission's monitoring of the code of conduct that the post-trade industry has adopted at the Commission's behest[33].

The Target 2 Securities project managed by the Eurosystem and launched in July 2006 could be an answer to many of these problems. It could provide a high-level of interoperability between the participating central securities depositories, eliminate certain barriers to the integration of settlement systems that were identified in the Giovannini Group reports and, by creating a single securities settlement platform or engine, help to improve the settlement rate and speed up fund transfers, thus ensuring that funds and securities are ready for re-use more rapidly.

In addition to these aspects, which, in many ways, determine the development of the industry in Europe, there are two other issues raised by changing post-trade infrastructures that need to be discussed. They stem from the more fundamental concerns of market regulators.

First, looking beyond Europe, the current crisis highlights the operational risks that are likely to arise in the order-processing chain in OTC derivatives markets. Once again, the regulator's actions in this case may promote implementation of harmonised solutions at the international level with the cooperation of industry professionals. The risk areas concerned could be as follows:

- Operational risks relating primarily to trade confirmation backlogs;
- Compliance risks relating to contracts that may not be enforceable in all the jurisdictions concerned, or that fail to define events of default appropriately, thus exposing buyers to a high level of legal risk;
- Counterparty risk, stemming from the fact that a market participant does not know the risks incurred by the counterparty to a contract;
- Systemic risk related to netting. This risk must be minimised through proper management of participants' outstanding trades and collateral;
- The risk of inadequate traceability of transaction volumes and prices, making it difficult to ensure transparency with regard to the market and periodic reporting to the competent authorities.

From a strategic point of view, the topics mentioned seem to indicate that regulated markets could become major players in post-trade services for derivatives markets. A number of regulatory issues have arisen in the regulated derivatives business, however. These issues were revealed by questions raised in the USA during the major moves to consolidate futures markets. These questions concerned the control that the main futures market exercised over its clearing system and they are likely to concern European regulators too.

Recent events have obviously raised the question of knowing which market players will be able both to propose and to deliver solutions for the orderly operation of post-trade infrastructures at the global level. Such solutions must be both financially rational and secure from the regulatory point of view, including with regard to applicable securities laws, but they must not undermine the competitive environment or detract from the need for healthy emulation between market practitioners.

[33] See the relevant section on "Monitoring the evolution of prices, costs and volumes of post-trading activities" on the European Commission's website and the Oxera report, dated 2 August 2007 entitled "Methodology for monitoring the evolution of trading and post-trading prices, costs and volumes" found there.

SUMMARY OF TRENDS AND RISKS ON WHOLESALE MARKETS FOR INTERMEDIARIES, LISTED COMPANIES AND INSTITUTIONAL INVESTORS

Risk of contagion from the subprime crisis

Companies financing is the first sector at risk, especially as far as acquisitions are concerned. From 2005 to the first half of 2007 there was a surge in LBO transactions involving greater leverage and higher acquisition prices, along with a substantial reduction in creditor protection clauses. The surge was made possible by the market's capacity to absorb transactions through securitisation vehicles such as CLOs. The current market climate could eventually make it difficult to refinance debts if:

- The earnings of the target companies decline, as economic growth slows and their pension liabilities become more vulnerable to a prolonged dip in interest rates;
- Uncertainty persists about securitisation vehicles' default risk and the volatility of their ratings as a result of changes in rating methodologies;
- Investors reject structured finance products;
- Bankruptcy proceedings in the event of a default in such a climate are not robust.

Credit derivatives are the second sector at risk. The expansion of securitisation in recent years, even after the primary market seized up in the second half of 2007, was possible only because banks relied massively on credit insurance derivatives, such as credit default swaps (CDS). Despite recent rises in risk premiums, these instruments, which are backed by counterparty services supplied by monoline insurers and hedge funds, ensured a smooth secondary market for market practitioners' credit risks. The robustness of this market and of the underlying legal commitments with regard to credit insurance could be subjected to a full-scale, real-world stress test following the downgrading of the monoline insurers' credit ratings in early 2008, an increase in defaults, as the business climate deteriorates, and a weakening of certain hedge funds.

Valuation risks stemming from a lack of liquidity and market depth for certain assets

The subprime crisis has revealed shortcomings in the secondary market price formation mechanisms for certain assets. Too few transactions and insufficient transparency on the secondary market made it difficult to determine a reliable fair price for valuing portfolios. The handful of instruments that can be used as price benchmarks are usually index derivatives and it is difficult to assess their representativeness and reliability. Furthermore, the lack of market liquidity is combined with concentration of trading by a small number of operators. Investment banks and hedge funds seem to account for the bulk of trading, especially in the riskiest segments. This aggravates the risk of a cornered market or price manipulation in those segments.

The risk of post-trade system failure on OTC markets

OTC derivatives markets have seen extremely rapid growth in recent years, as alternative investment methods evolved and new financial instruments, such as credit derivatives, emerged. The secure growth of these markets could be jeopardised by major operational problems and failures of their post-trade systems, making these systems a source of systemic risk for market participants. The systems could also turn out to be ineffective for regulators seeking to supervise the integrity of the market.

Governance risk for listed companies and lack of transparency in takeovers

The growing use of certain techniques for trading or acquiring equity interests have raised a number of questions about the potential impact on market operations in general and on listed companies in particular. The current volatility of equity prices creates market opportunities and a growing number of new types of market players are using investment vehicles based in offshore jurisdictions that lack transparency. These developments require special vigilance with regard to several risks:

- The risk of price manipulation by spreading rumours while taking positions or arbitraging in different classes of a company's securities;
- The risk of creeping takeovers after dissimulating the acquisition of significant interests and concert parties through the use of various parking or fronting techniques;
- The risk of manipulating shareholder activism, by using methods that are opaque for the other shareholders and the market, such as the misuse of securities lending to separate voting rights at general meetings from the associated economic interest in the company;
- The risk of insider dealing in financial transactions, especially takeovers involving large numbers of players in long and delicate negotiations that are prone to leaks of inside information.

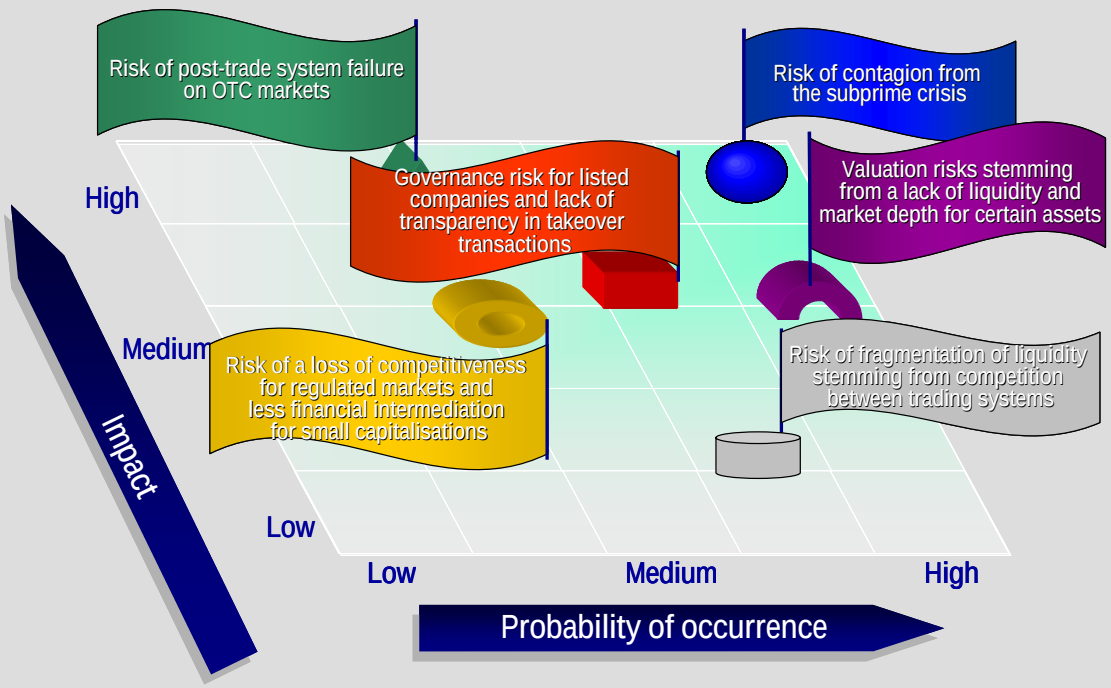
Risk of fragmentation of liquidity stemming from competition between trading systems

The entry into force of MiFID in Europe promoted competition for equity trading by ending the concentration rule requiring orders to be executed on stock exchanges. Competition from new execution services provided by Alternative Trading Systems or by brokers that can "internalise" orders is still limited at this point. Some of the initiatives that have been announced are not yet fully operational. This is the case for Nasdaq-OMX project and the initiative of a consortium of seven investment banks called Turquoise. Consequently, the strategic choices made by each of the players should be examined to see how the larger number of execution venues might fragment liquidity for certain types of securities.

Risk of a loss of competitiveness for regulated markets and less financial intermediation for small capitalisation stocks

The surge in the use of organised, but unregulated, trading platforms, such as AIM in the UK and Alternext in France was a key feature of European equities markets in 2007. On the other hand, listings on regulated markets continued to decline as regulations were tightened following the transposition into national law of the Directives adopted under the European Financial Services Action Plan. Regulated markets seemed to be attracting more collective investment structures, such as alternative investment funds or diversified holdings, rather than business undertakings per se. These changes call for greater emphasis on the risk of a loss of transparency and overall security on the markets in their new configuration. At the same time, the supply of financial intermediation for small caps is drying up in some countries, bringing the risk of declining liquidity for medium-sized and small listed companies because of insufficient secondary market trading and market making.

RISK MAP FOR INTERMEDIARIES, LISTED COMPANIES AND INSTITUTIONAL INVESTORS



****

In light of the above risks, regulators have several possible courses of action:

- Subprime contagion risk calls for greater international efforts to enhance the transparency of primary and secondary credit markets and the activities of market participants, especially credit rating agencies;
- Valuation risk for assets on illiquid markets calls for closer supervision of market transactions, verification of intermediaries' compliance with the rules of conduct and conflict of interest rules, and an analysis of the quality of the price indicators used as benchmarks by all market participants;
- The risk of post-trade system failure on OTC markets calls for continued work at the European level on post-market infrastructures, in collaboration with the European Central Bank;
- The risk of market abuse and manipulation of shareholder activism calls for enhanced market surveillance, especially through international discussions of the delicate matter of off-shore financial centres, and monitoring of corporate governance practices and, more specifically, the way that general meetings of shareholders are run;
- Liquidity fragmentation risk calls for special statistical indicators to monitor transactions in order to see how the best-execution rules are working and to observe the role of new trading platforms;
- The risk of a loss of competitiveness calls for continued work on enhancing the attraction of a public listing, especially for small and medium-sized companies, or for companies from outside the European Union.

TRENDS ON RETAIL AND COLLECTIVE INVESTMENT MARKETS AND RISKS FOR RETAIL INVESTORS

I. HOUSEHOLD SAVINGS IN 2006-2007

1. Most investments still go to life insurance and banking products

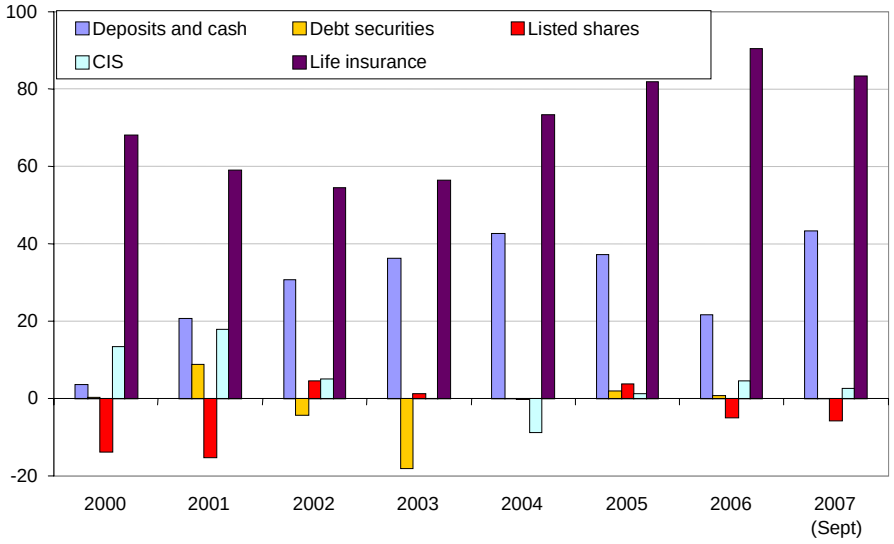
The popularity of life insurance products remains high, despite a slight slowing of investment flows in 2007, as the popularity of more liquid banking products grows

Flows of French households' investments in financial assets stood at EUR 113 billion (excluding unlisted equities) in 2006. This was down slightly from the figure of EUR 126 billion reached in 2005. More than 80% of these investment flows, or EUR 90 billion, went into life insurance policies, highlighting once again the key role that life insurance plays in French households' financial planning. Massive withdrawals from homebuyer savings schemes following changes in tax rules, combined with strong overall stock market performances, were bound to give life insurance a boost, particularly unit-linked policies, even though its dominant position in overall financial investment flows has become a largely structural phenomenon. Life insurance's share of households' total annual investment flows averaged 73% from 2000 to 2006. However, the data available up to the third quarter of 2007 show that investment in life insurance is slowing down, albeit moderately. It now accounts for only 67% of households' total investment flows, even as the aggregate investment flows increased to reach annualised total of EUR 124 billion at the end of September 2007.

Bank deposits ranked second as households' preferred investment in 2006, far behind life insurance, with a share of some EUR 22 billion, accounting for approximately 19% of total investment flows. However, at the end of September 2007, this percentage rose sharply to 43%, as the increase in short-term interest rates made term deposits more attractive. The flow of savings into sight deposits also increased substantially, despite the increased opportunity cost. This is probably a reflection of households' wait-and-see attitude with regard to the prevailing uncertainty on money markets and capital markets.

The remaining investment flows were concentrated on collective investment schemes (including money-market funds). These investments (excluding unit-linked life insurance policies) accounted for 4% of total investment flows in 2006 and only 2% in the third quarter of 2007, on an annualised basis. Households sold off listed shares worth EUR 4.9 billion in 2006 and EUR 5.8 billion in the year to end of September 2007, while their direct acquisitions of debt securities were very minor, accounting for less than 1% of their aggregate investment flows.

Figure 25: French households' financial investments
(cumulative flows over four quarters, EUR billion)

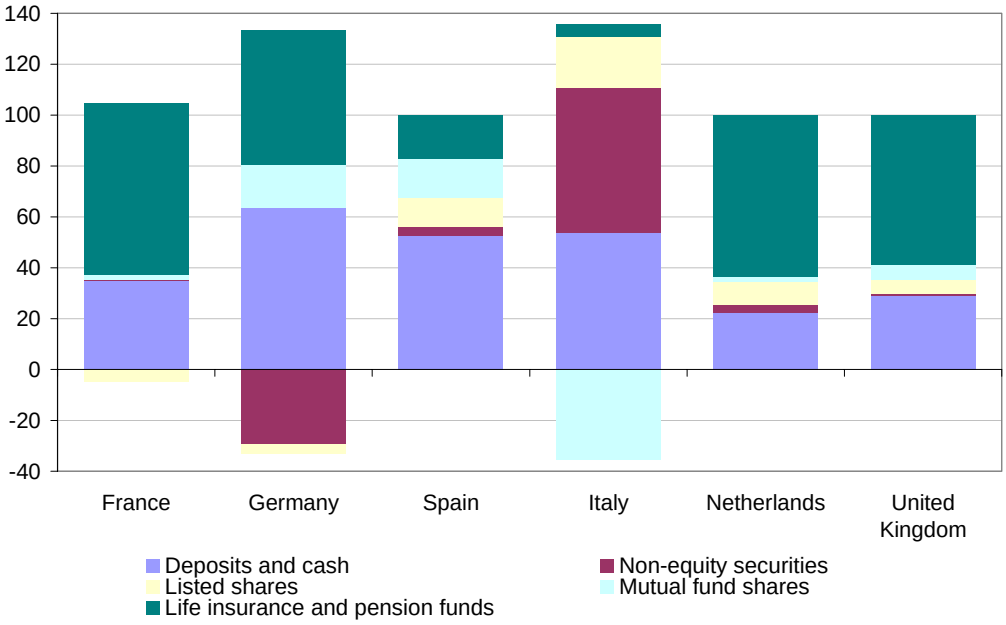


Source: Banque de France

If we compare the structure of French households' financial investments with the prevailing structures in other major European countries in recent months, we see that there are two broad categories of countries:

- Countries where investment flows into life insurance policies and pension funds (where they exist) account for a predominant share of total financial investment flows. This is the case for France, the Netherlands, the UK and, to a lesser extent, Germany;
- Countries were investment flows into banking products are still very high and where the life insurance and pension fund market has not reached maturity. This is the case for Spain and Italy.

Figure 26: Structure of households' annual financial investment flows in the major European countries at the end of September 2007(*)
(cumulative flows over four quarters, %)



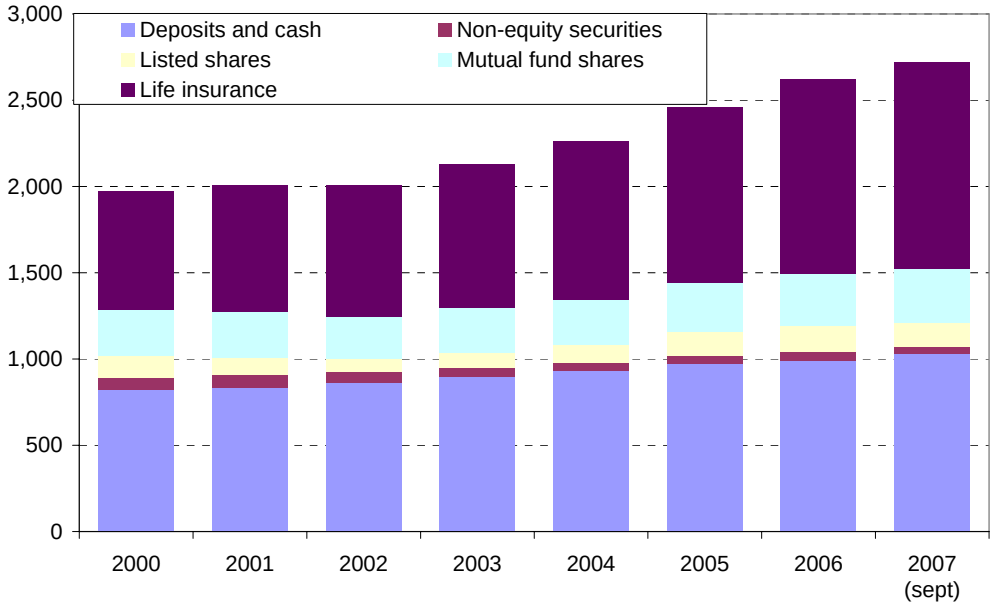
Sources: National central banks, OECD for the Netherlands (*) Figures at end December 2006 for the Netherlands

It is noteworthy that the flow of investment into life insurance as a share of French households' aggregate financial investment flows is nearly the same as that observed in the UK and the Netherlands for "life insurance and pension funds", or, in other words, in countries where social choices have given a large role to funded retirement provision.

The stocks of investments are also highly concentrated on life insurance and bank deposits

The structure of French households' total stock of financial assets (excluding unlisted shares) confirms the main trends seen in their investment flows. Occupying first place since 2004, life insurance increased its share to 43% of the total at the end of December 2006. Banking products still accounted for 38% of financial assets, trailed distantly by direct holdings of collective investment schemes (11.5%), listed shares (6%) and debt securities (1.7%). The breakdown at the end of September 2007 looks much the same.

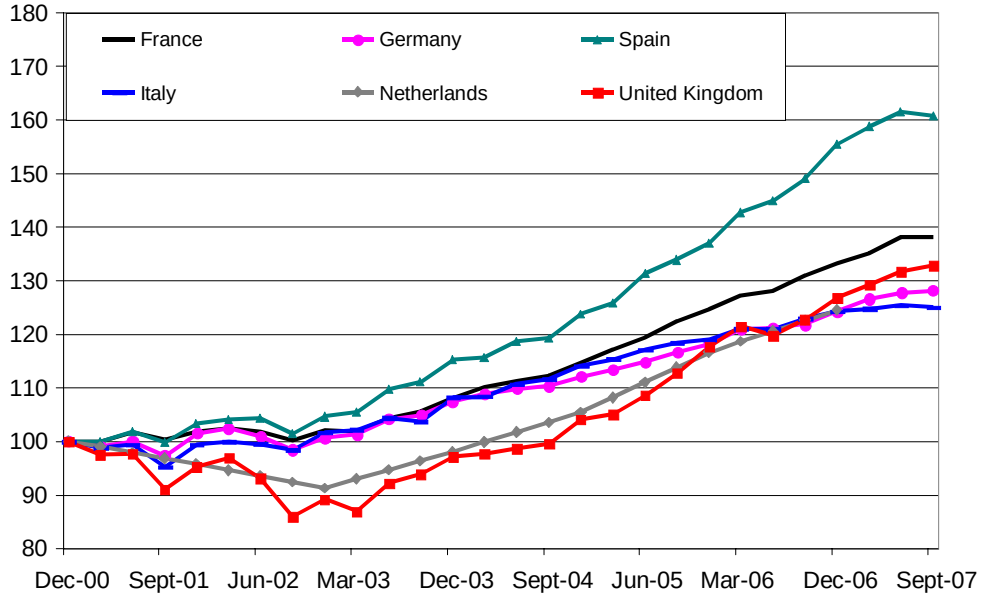
Figure 27: French households' financial assets at the end of September 2007
(stocks in EUR billion)



Source: Banque de France

French households' aggregate stock of financial assets stood at more than EUR 2,700 billion at the end of September 2007, representing an increase of 38% compared to 2000. This growth is in line with the average growth seen the main European countries (see Figure 28 below).

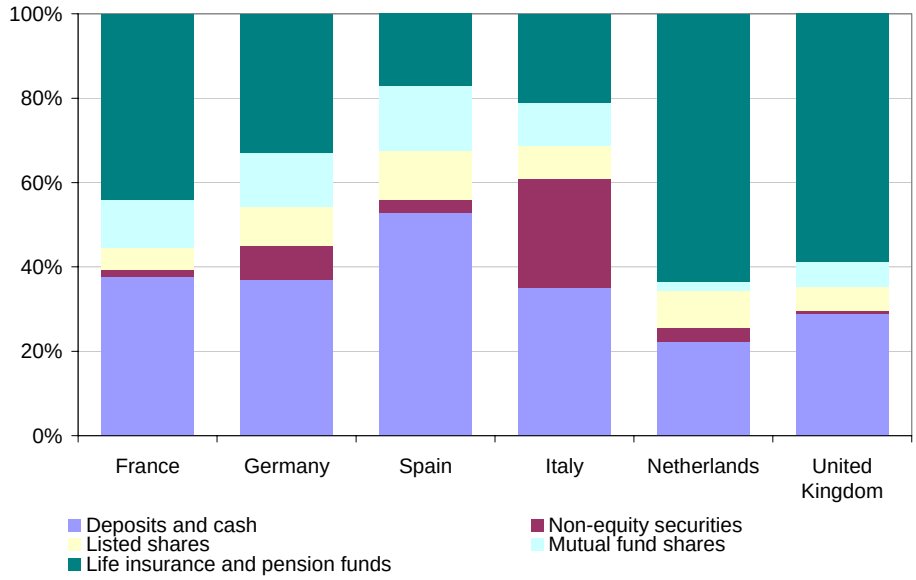
Figure 28: Growth of households' financial assets in the main European countries
(December 2000 = 100)



Sources: National central banks, OECD for the Netherlands. (*) Figures at end December 2006 for the Netherlands

The comparison of French households' financial assets with those of households in the other major European countries shows that France occupies the middle ground, with Spain and, to a lesser extent, Germany and Italy on one side, and the UK and the Netherlands on the other side. French households' financial assets are characterised by the persistence of a large proportion of banking products, as is the case in Italy and Spain. This reflects the significant role that conventional banking intermediation still plays in those countries. However, at the same time, the share of life insurance policies in French households' total financial assets makes them more like their counterparts in the UK and the Netherlands, where the share of bank deposits is very small and the existing pension systems explain the large share of investment in pension funds.

Figure 29: Structure of households' financial assets in the major European countries in September 2007 *(%)*



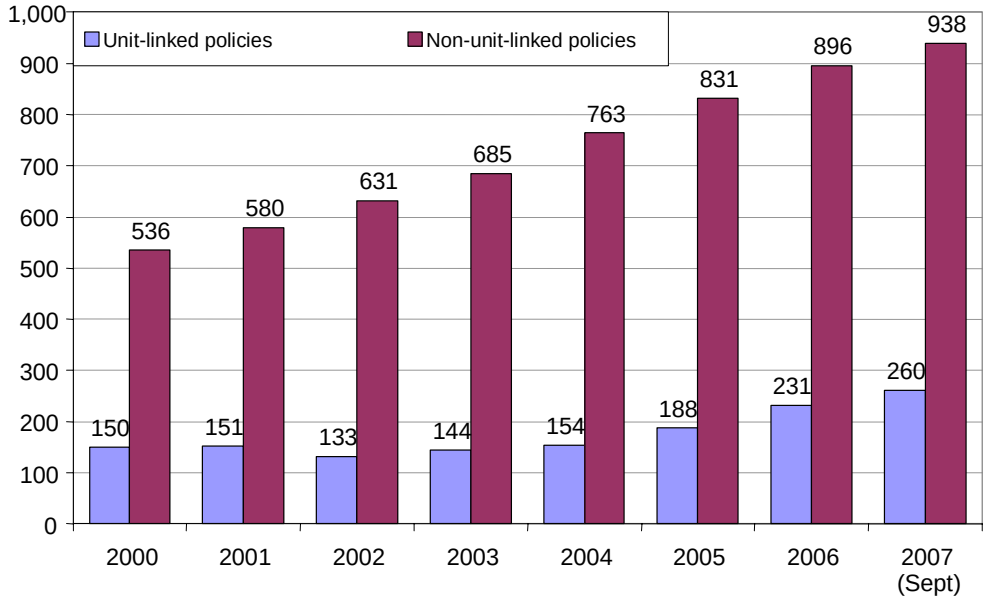
Sources: National central banks, OECD for the Netherlands. (*) Figures at end December 2006 for the Netherlands

2. Collective investment schemes still account for a large share of households' financial investments

Unit-linked life insurance regained its popularity with investors in 2007, following the market recovery that started in 2004

Even though non-unit-linked policies still account for the vast majority of French households' investment in life insurance, unit-linked policies are gaining ground. At the end of 2007, they accounted for nearly a quarter (22.7%) of the stock of life insurance policies held by householders and nearly a third (31.2%) of households' annual investment flows into life insurance products.

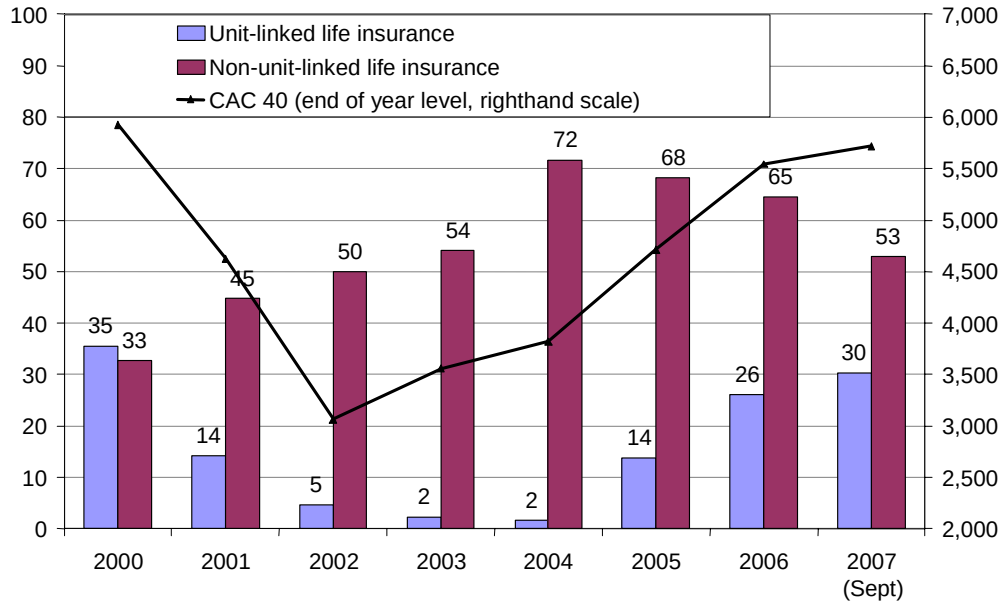
Figure 30: Stocks of non-unit-linked policies and unit-linked policies held by French households at the end of September 2007 *(EUR billion)*



Source: Banque de France

Pro-cyclical investment flows led to contrasting growth patterns for these products in recent years. At the height of the exuberance on stock markets at the end of the 1990s, unit-linked policies attracted large numbers of households hoping to achieve the superior performances made possible by their high equity content, compared to non-unit-linked policies and their declining returns. Soon after 2000, though, they lost ground, as stock markets declined and French households returned to safer non-unit-linked policies. Once the crisis was over, the strong gains of equity markets after 2004 made unit-linked policies more attractive again. In addition, the provisions of the Fourgous amendment came into force at the end of 2005, making it possible to transform a non-unit-linked policy into a unit-linked policy without forfeiting the tax benefits of the original policy. This undoubtedly contributed to the growth of these products at the end of the period too. The biggest increase in investment flows into unit-linked policies took place in 2006, when the stock market indices peaked and, at the same time, households could take advantage of the provisions of the Fourgous amendment. This, once again, highlighted the pro-cyclical nature of households' behaviour with regard to acquiring equities.

Figure 31: Annual flows of household investment into non-unit-linked and unit-linked life insurance at the end of September 2007
(EUR billion)

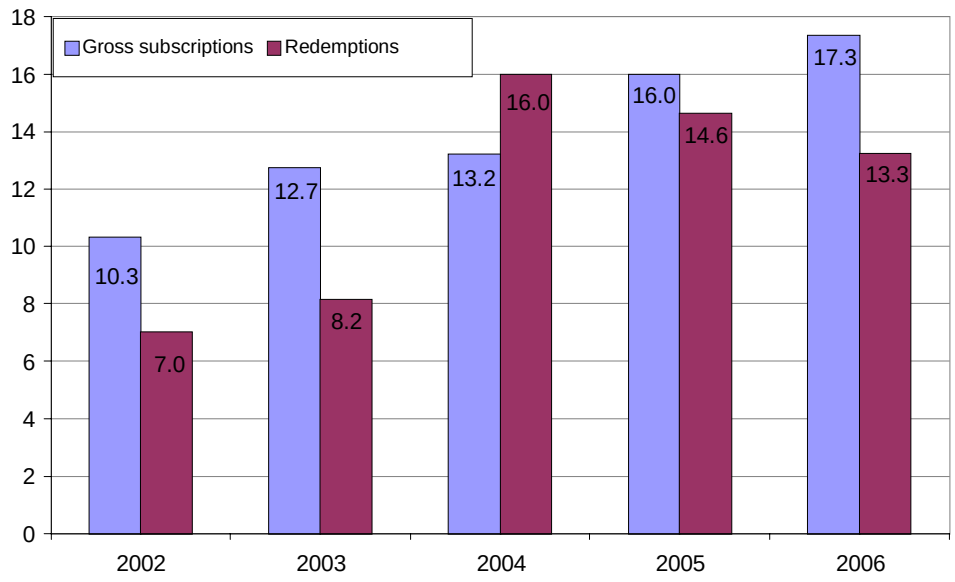


Sources: Banque de France and Thomson Financial

Employee savings plans expanded in 2006 and 2007, but still constitute a minor share of French households' financial assets

In 2004 and 2005 employees' net investments in company savings plans were very small, reaching EUR only 1.3 billion in 2005. 2004 even saw net redemptions of nearly EUR 3 billion from such plans. But the trend reversed in 2006 and 2007, with net subscriptions of units in employee savings plans reaching EUR 4 billion in 2006, and EUR 8.7 billion in 2007.

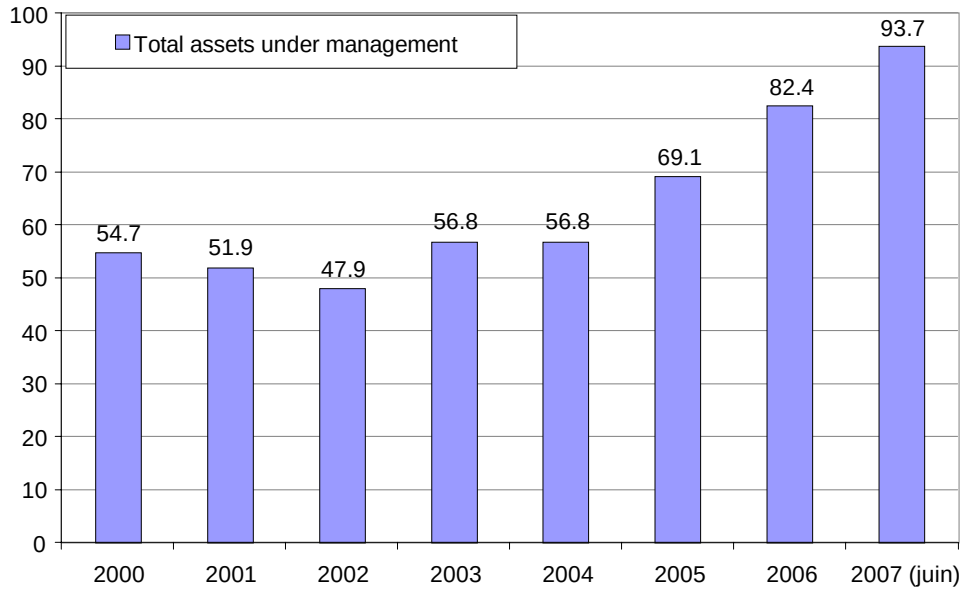
Figure 32: Employee savings plans subscriptions and redemptions
(EUR billion)



Source: AMF

Net subscriptions and strong stock market performances meant that the aggregate stock of employees' savings in company savings plans stood at EUR 87.4 billion at the end 2007, which is close to the psychological threshold of EUR 100 billion. This trend is bound to be pronounced in the years to come, in view of the many advantages and tax breaks offered by company savings products, such as employee savings plans, intercompany savings plans and company pension funds, and growing fears about the soundness of the pay-as-you-go pension system. However, up until now, French households did not really perceive this type of investment as a means of building up financial assets in the long term, especially in comparison to life insurance, where policyholders can opt for an annuity or a cash settlement and enjoy advantages with regard to inheritance. This perception has also been undermined by policies that allow early withdrawals from savings plans that were not specifically designed for retirement provision.

Figure 33: Employee savings plans
(EUR billion)

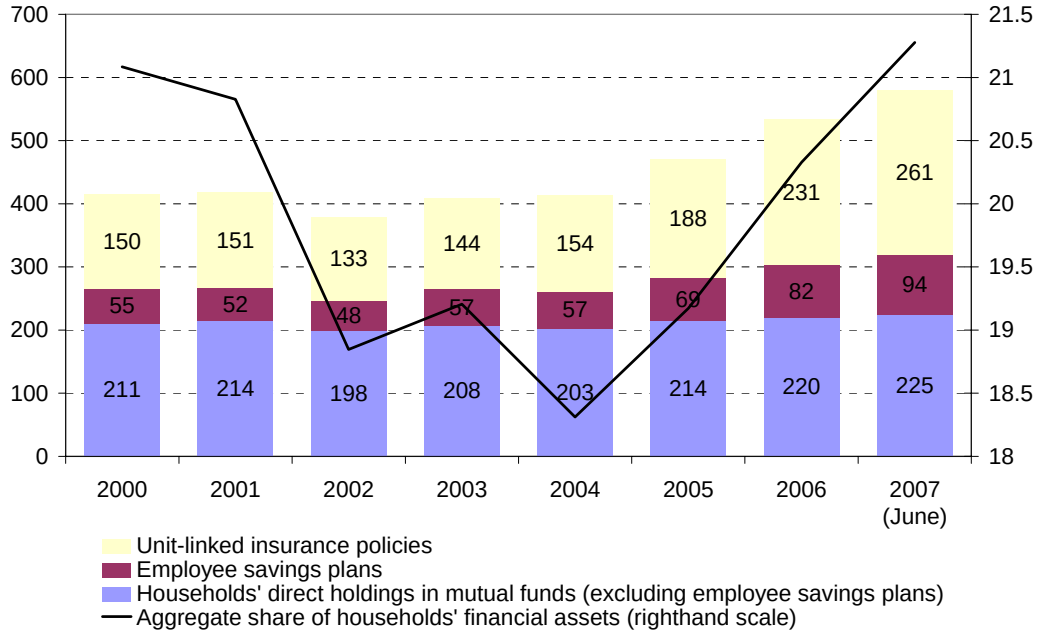


Source: AMF

Direct and indirect holdings in collective investment schemes now account for 20% of French households financial assets

With the substantial growth of unit-linked life insurance policies and, to a lesser extent, the expansion of company savings plans, collective investment schemes in the broadest sense of the term now account for a growing share of French households' financial assets, despite the fact that the stagnation of direct holdings in collective investment schemes seems to suggest otherwise. When direct holdings in mutual funds are combined with indirect holdings in collective investment schemes through unit-linked life insurance policies and company savings plans, collective investment schemes account for 22% of French households' financial assets in the first half of 2007, representing nearly EUR 580 billion in assets. In 2006, life insurance policies became the main vehicle for households' holdings in CIS.

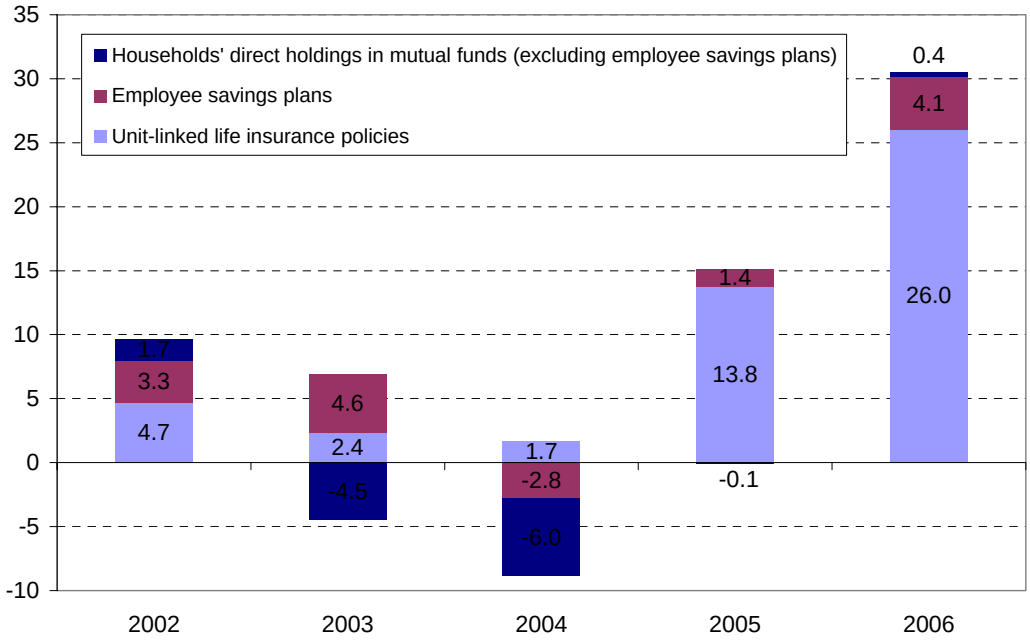
Figure 34: Assets under management in collective investment schemes, and as a share of households' financial assets
(levels in EUR billion and shares in %)



Sources: AMF, FFSA and Banque de France

The aggregate share changes with valuations, of course, but it is also boosted by a net inflow of investment. French households' net investment flows into directly and indirectly holdings in collective investment schemes stood at EUR 30.5 billion at the end of December 2006, which represents 27.1% of all financial investment flows. The figures at the end of September 2007 were EUR 33 billion and 26.7%.

Figure 35: Financial investment flows into collective investment schemes
(annual flows in EUR billion)

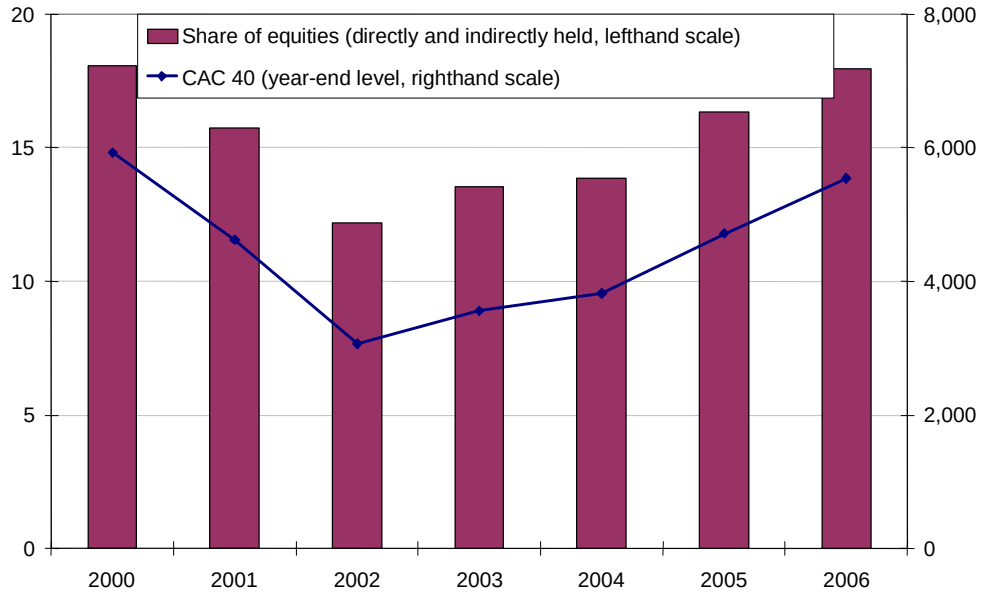


Sources: AMF, FFSA and Banque de France

3. Aggregate holdings of equities expanded as markets recovered

Households' direct holdings of listed shares are not representative of the actual importance of such securities in their financial assets. Households' assets are also invested in listed shares indirectly through other investment vehicles, such as collective investment schemes, employee savings plans and unit-linked life insurance policies. We used statistical data on the composition of different categories of mutual funds to estimate the stock of equities held directly or indirectly by households at some EUR 480 billion at the end of December 2006, which represents 18% of their financial assets. This is the same percentage as in 2000, just before the stock market started to decline. The percentage has varied substantially since 2000, shadowing the ups and downs of equity prices. This situation underscores the relatively passive attitude of households, which allowed their asset structure be deformed by valuation effects. This movement has undoubtedly been driven by the procyclical nature of the flows of households' investments into equities, as can be seen in the popularity of unit-linked life insurance policies (see above).

Figure 36: Share of directly and indirectly held equities in French households' financial assets *(%)*

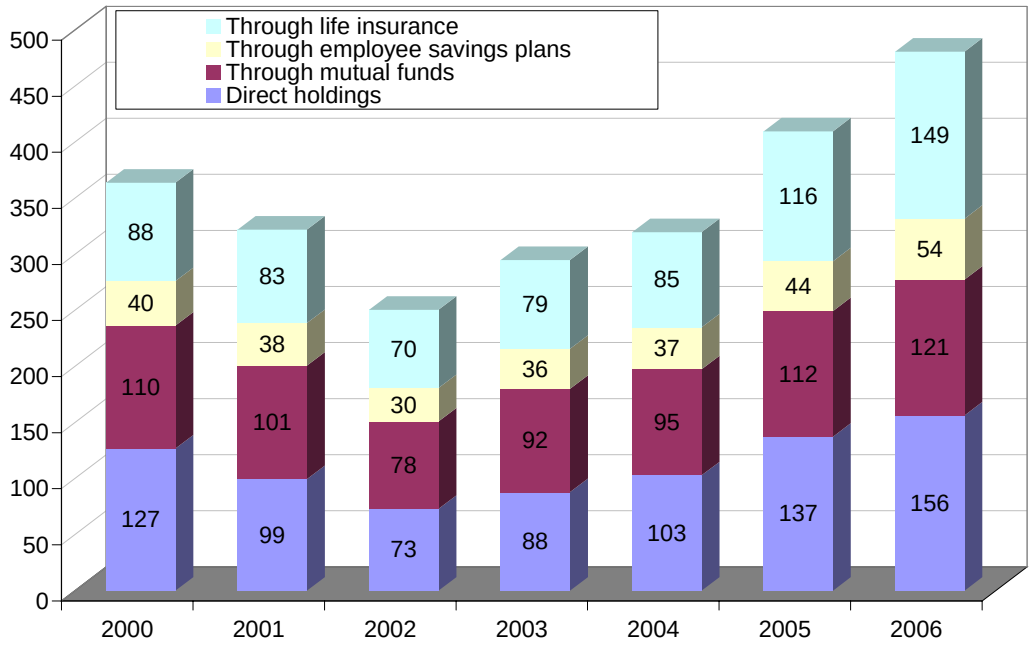


Sources: AFG, AMF, Banque de France and FFSA

In 2006, aggregate holdings of equities broke down as follows:

- EUR 149 billion held through unit-linked life insurance policies;
- EUR 121 billion held through direct investments in collective investment schemes;
- EUR 54 billion held through employee savings plans;
- EUR 156 billion in listed shares held directly.

Figure 37: Amounts of equities held through different investment channels
(EUR billion)



Sources: AFG, AMF, Banque de France and FFSA

In other words, we are seeing the development of new forms of intermediation in equities holdings[34]. The share of equities held through unit-linked insurance policies accounted for 31% of all equities held by households at the end of 2006. This share is up by 6.8 percentage points over 2000. The proportion of equities held through company savings plans was also up, but with a smaller rise from 10.9% in 2000 to 11.3% in 2006. Conversely, the share of equities held directly through mutual funds shrank by 4.9 percentage points to 25.2% at the end of December 2006. On the whole, households preferred intermediated holdings of equities, since their direct holdings shrank by 2.3 percentage points from 34.8% in 2000 to 32.5% in 2006. This means that households assume full responsibility for the management of only one-third of their aggregate equity portfolios.

4. The capital risk exposure in French households' financial assets is still relatively small on the whole

The sweeping restructuring of French households' financial assets over the last 25 years has had an impact on their exposure to capital risk. The growth of multiple layers of intermediation (with investments in life insurance typically being invested in collective investment schemes) makes it a complex matter to estimate the risk incurred. We break down the layers of intermediation here to make a simple estimate of capital risk exposure since 2000. The table below shows a classification of French households' financial assets according to their risk levels[35]. The higher the risk, the higher the risk index number. The "Risk Level 1" corresponds to risk-free or low risk assets. Mutual funds are included through their different distribution channels (direct holdings, or indirect holdings through company savings plans or life insurance policies).

[34] The amount of equities held by households through mutual funds, employee savings plans and life insurance was partly calculated using estimations.
[35] These risk levels are based on a breakdown of the main classes of financial assets, which is common in the academic community. In no-way, they have authority to embody the official position of the AMF related to the implementation of a financial risks' nomenclature, especially as to the different kinds of mutual funds.

Table 10: Definition of risk classes	
Risk Level 1	- Cash - Bank deposits (sight, passbook and term deposits, regulated savings plans) - Money market funds (all distribution channels) - Direct holdings of money market securities - Non-unit-linked life insurance policies
Risk Level 2	- Direct holdings of bonds - Bond funds (all distribution channels) - Guaranteed and structured funds (all distribution channels)
Risk Level 3	- Equity funds - Diversified and alternative funds (all distribution channels)
Risk Level 4*	- Listed shares (including shares held directly in company savings plans)
** The higher Risk Level for listed shares than for equity funds is justified by allocation errors and the lack of portfolio diversification (AMF Working Papers, No. 1, 2006).*	

The breakdown of households' stock of investments using the table above gives the following results:

Table 11: Percentage of French households' financial investments in each risk class			
	2000	**2003**	**2006**
Risk Level 1	72.1	77.7	75.0
Risk Level 2	7.5	7.2	5.5
Risk Level 3	12.3	9.7	11.9
Risk Level 4	8.1	5.4	7.6
Sources: AFG, AMF, Banque de France and FFSA			

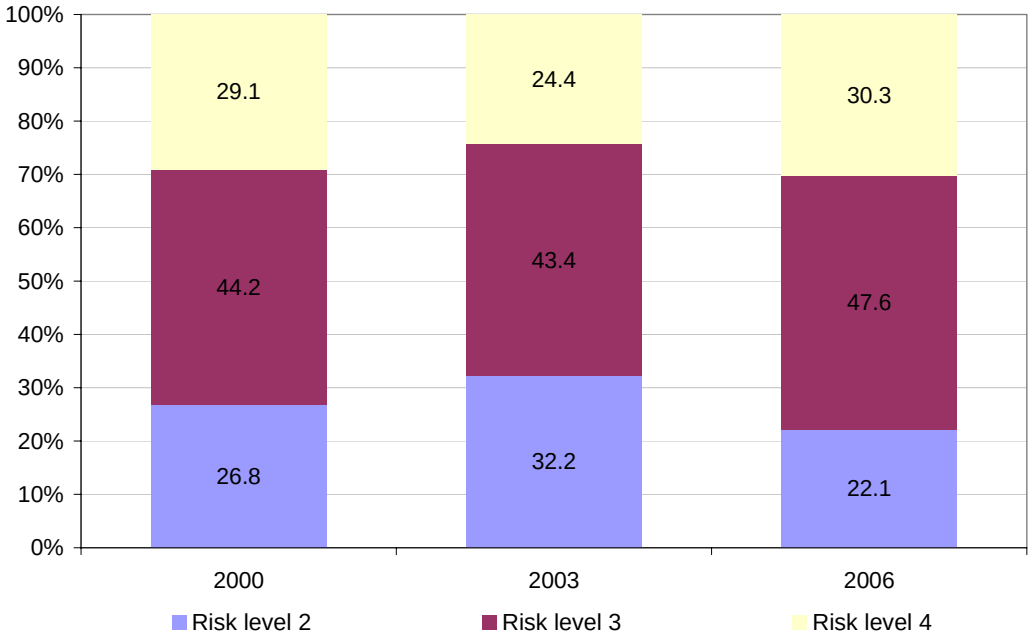
Three-quarters of households' financial assets are not exposed to any capital risk. The proportion of investments in the "Risk Level 1" category grew still further between 2000 and 2006, peaking at nearly 78% in 2003, when the stock market bottomed out. This is a strong signal that risk aversion and loss aversion have remained at high levels. Yet, this does not mean that three-quarters of households' assets are liquid. Much of the "Risk Level 1" asset class is made up of non-unit-linked life insurance policies, which account for 45% of the assets in this class, and illiquid bank deposits, as the overall proportion of bank deposits in regulated savings plans and term deposits for more than 2 years stands at 15%. The growth of long-term savings, which are more suited to retirement provision, does not seem to have led to a correlated increase in risk-taking.

Among the riskier asset classes, only Risk Level 3 accounts for more than 10% of French households' financial assets, whereas the riskiest assets (directly held equities, including those held under employee savings plans) accounted for less than 8% of financial assets at the end of 2006. Ultimately, the only asset class that grew as a percentage of French households' financial assets between 2000 and 2006 was Risk Level 1; all other assets classes saw their shares shrink.

If the analysis is confined to the riskier assets in the Risk Level 2, 3 and 4 categories, it emerges that French households prefer financial assets involving an intermediate level of risk (Risk Level 3), which

means diversified and alternative equity fund from all distribution channels. These assets are particularly popular with unit-linked life insurance policyholders and they accounted for nearly 48% of the total stock of risk assets held by households at the end of December 2006 (see Figure 38 below). This proportion is 3.5 percentage points larger than in 2000, and the share of investments in the Risk Level 4 asset class, including directly held equities, was 1.2 percentage points larger. On the other hand, the proportion of households' risk assets represented by bonds and bond funds and guaranteed funds in the Risk Level 2 asset class was down sharply, shrinking by 4.3 percentage points between 2000 and 2006. In other words, French households preferences in terms of long-term investments in securities have shifted slightly in recent years towards riskier assets that are exposed to the ups and downs of the stock markets. As we have seen, however, this trend does not change the very strong overall preference for risk-free assets.

Figure 38: Households' risk assets by risk level
(%)



Sources: AMF, FFSA and Banque de France

II. COLLECTIVE INVESTMENT MANAGEMENT

1. The financial crisis has significantly reduced inflows into dynamic money-market funds

Market developments in 2007, especially the broad-based crisis in securitisation markets in the second half, have had significant effects on the main participants in France's collective investment market. Direct effects of the crisis can be seen on those managed funds that were heavily exposed to securitised or structured debt instruments, such as so-called "dynamic" money-market funds[36]. The data in the corresponding category in the commercial databases[37], "Money Market EUR Leveraged"[38], show that in France, some 227 funds meeting this description and domiciled in France posted declines of more than 75% in assets under management in the six months ended 31 January 2008. As it happened, the difficulties that some fund sponsors encountered last summer in maintaining liquidity in funds of this type drew considerable media attention and eventually caused investors to anticipate a protracted crisis. The ensuing outflows sharply amplified the valuation effects on this fund category, to the point that some funds were forced to suspend subscriptions and redemptions.

The spreading impacts of this crisis also had effects on products in categories that were in principle less exposed to securitised debt because of their advertised risk profile, but which had nonetheless taken on exposures of this kind in their quest for enhanced performance at a time of low fixed-rate yields. Thus, all but a few of the absolute return funds – a relatively recent category intended fairly specifically for institutional clients – failed to reach their annual performance objectives for 2007.[39] The massive outflow that resulted was fairly widespread throughout Europe. In France, assets under management in this category of fund[40] fell by more than half after July 2007, to EUR 16.6 billion at end-January 2008[41].

Standard non-dynamic money-market funds, a category popular mainly among corporate treasurers and institutional investors but also among retail investors, were likewise affected by the financial crisis. The negative short-term returns posted by some of these funds beginning in August showed that a number of them had resorted to return enhancement techniques involving exposure to various types of medium-term debt securities. This was not a general trend, however, as demonstrated by the aggregate performance of "money market cash funds" in 2007: 3.84% according to Europerformance. A degree of disaffection could nevertheless be seen for this fund category, in that aggregate outflows for all of 2007 amounted to roughly EUR 7.5 billion – an amount more than offset by these funds' reinvestment of income.

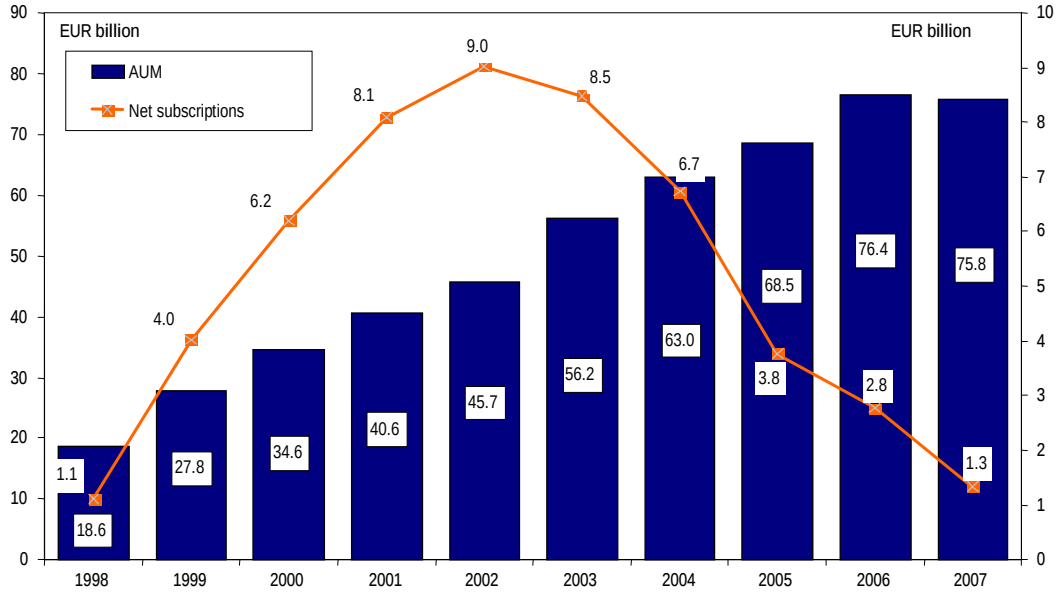
The extension of the crisis to the equity markets resulted in accelerated outflows from equity funds, which, although apparent from the beginning of the year in the Europe-wide data (EUR 6.4 billion withdrawn in the first half of 2007, according to EFAMA[42]), did not significantly affect France until the third quarter of 2007. Among other things, this outflow reflects negative performance by UCITS invested in sectors such as finance or in regions such as North America and Japan. Not all segments of the market were affected in

[36] In reality, funds of this type rarely, if ever, correspond to funds classified by the AMF as money market funds.
[37] Lipper.
[38] Fininfo Europerformance uses the terms "Trésorerie Dynamique" ("Dynamic Cash Flow") and "Trésorerie Dynamique Plus" ("Dynamic Cash Flow Plus").
[39] See, for example, "Absolute return funds struggling but surviving", Financial Times, 14 January 2008.
[40] As measured by the Lipper Hindsight database.
[41] We note here that two funds account for more than half of the assets under management.
[42] European Fund and Asset Management Association.

the same way. Funds involved with commodities and precious metals sectors, as well as emerging market equities.

By contrast, investors did not switch into guaranteed-principal and structured funds, even though conditions were ideal for retail banks marketing and promoting such schemes. Indeed, assets under management in funds offering a full principal guarantee (roughly nine-tenths of all structured funds) were virtually flat in 2007, against a backdrop of near-zero net inflows (Figure 39).

Figure 39: Guaranteed or structured UCITS domiciled in France: assets under management and subscriptions (net)



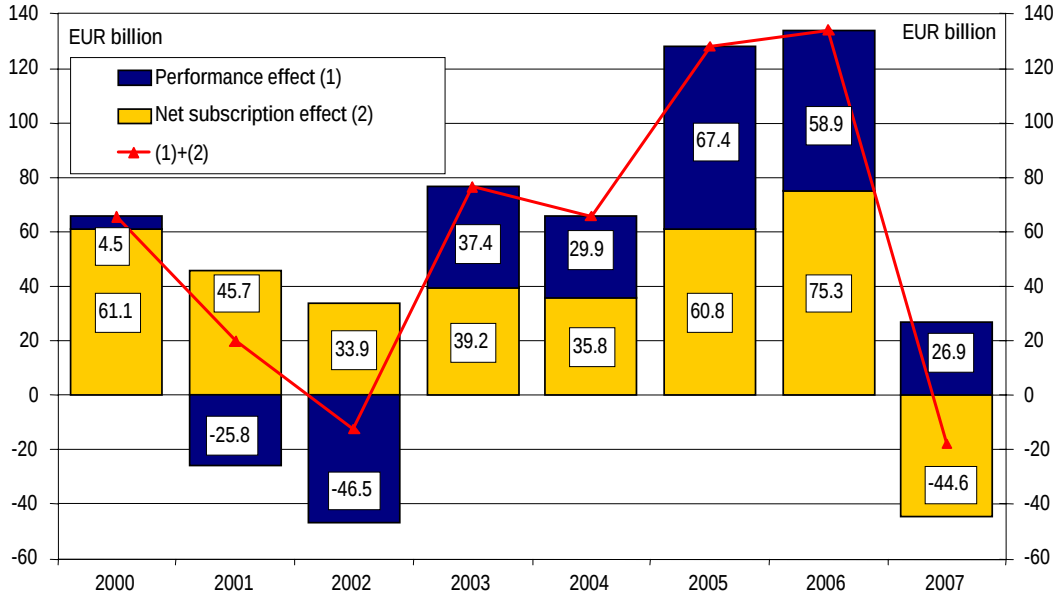
Source: Europerformance

Lastly, and largely independently of what was happening in credit markets, other financial market segments experienced adverse movements, in particular the housing market (according to Europerformance, funds invested in real estate equities were down 22.3% on the year) and to a lesser extent the market for small-cap and mid-cap stocks (down 0.5% for funds invested in French equities). Some market participants were so highly specialised in the small/mid-cap segment that one French firm had to seek recapitalisation in January 2008 to avoid liquidation.

All told, the decrease in assets under management at French UCITS in 2007 was less than in 2002 (Figure 40)[43]. However, unlike in 2002, when positive net inflows offset some of the effect of negative performance, the decline of assets under management in 2007 stemmed from the first aggregate net outflow of the decade.

[43] Europerformance data does not cover the whole population of French-domiciled UCITS from which it excludes in particular dedicated funds.

Figure 40: UCITS domiciled in France: Analysis of change in AUM
(performance and net subscription effects)



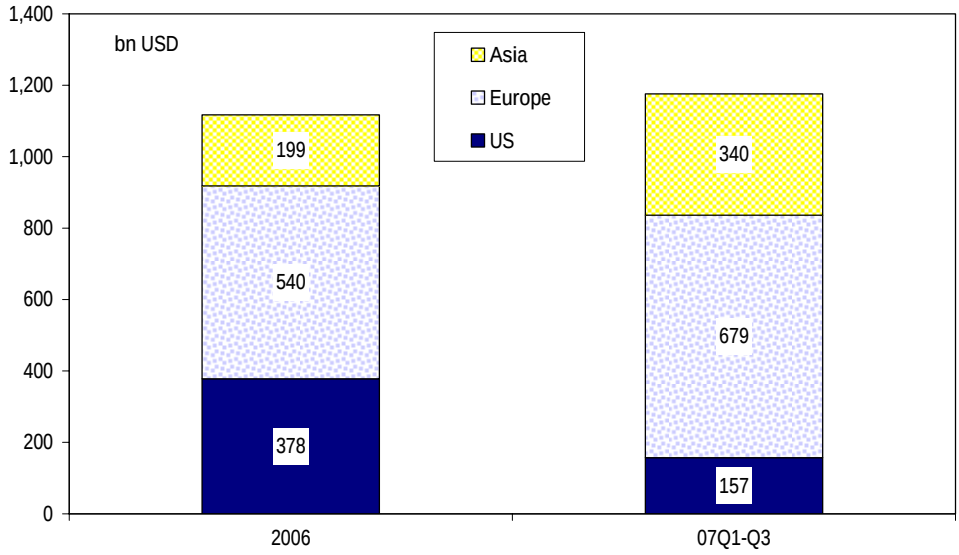
Source: Europerformance

2. Funds' domestic markets were affected in different ways within Europe and around the world

In Europe, some regional differentiating factors were seen. A particularly favourable stock market climate in Germany, where the performance of blue-chip indices (the DAX was up 22.3%) easily outstripped that in other European countries, translated into significant inflows into equity funds, in this case, into exchange traded funds most of all. The market in the UK seems to have been affected later than in most countries of continental Europe, mainly following the failure of Northern Rock, and some countries in central and eastern Europe continued to benefit from structural growth of their markets.

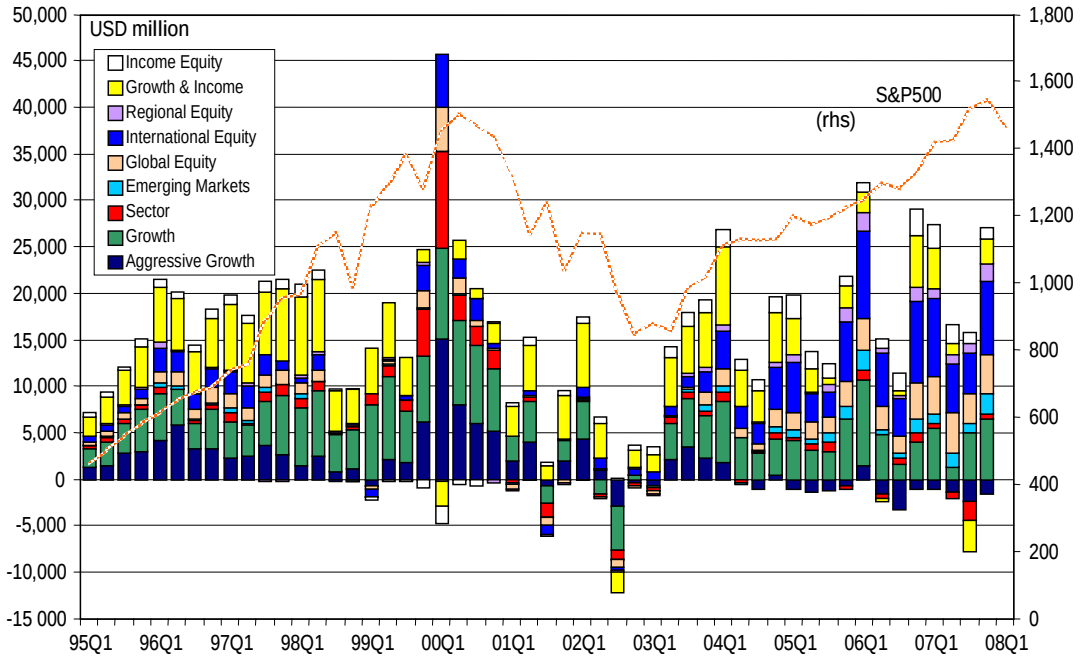
The situation in Europe thus contrasts in certain respects with what is observed outside its borders. Fast-growing emerging markets, especially in Asia (Figures 41 and 43), still seem to be sources of business growth for international players. Paradoxically, the fund management business in the USA was, up until the end of 2007, much less affected by the subprime crisis than it was in Europe. In particular, despite the stock market correction that began in the second half, net inflows remained brisk through the end of the year (Figure 42).

Figure 41 - Net fund inflows by region
(USD billion)



Source: Strategic Insight Global

Figure 42 - USA: Net inflows of equity mutual funds
(quarterly, USD billion)



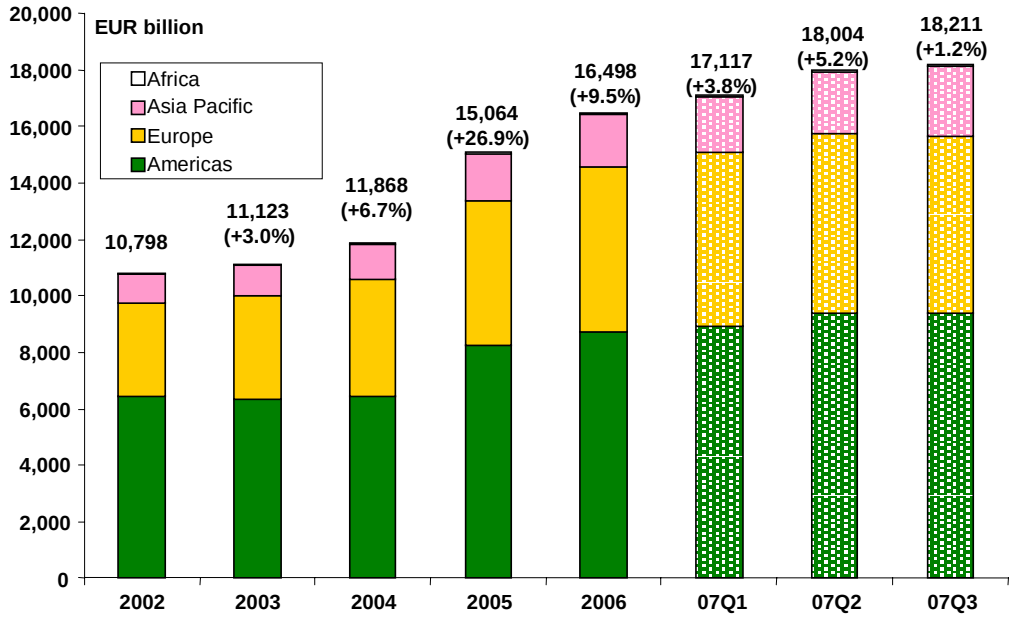
Source: ICI

The effect of the large outflows observed in Europe on assets under management remains open to interpretation. All things considered, the outflows are not without consequence for the positions and strategies of market participants, especially insofar as they reflect reallocations of assets between different participants. They do call, however, for better distinction between transitory and longer-term effects.

In aggregate, even after the outflows in the third and fourth quarters, especially from equity funds, assets under management in UCITS posted growth of 4.2% in 2007, which took them to EUR 6,203 billion (Figure 44). Also, and even though the rise in stock market indices was weak overall (except in Germany), the

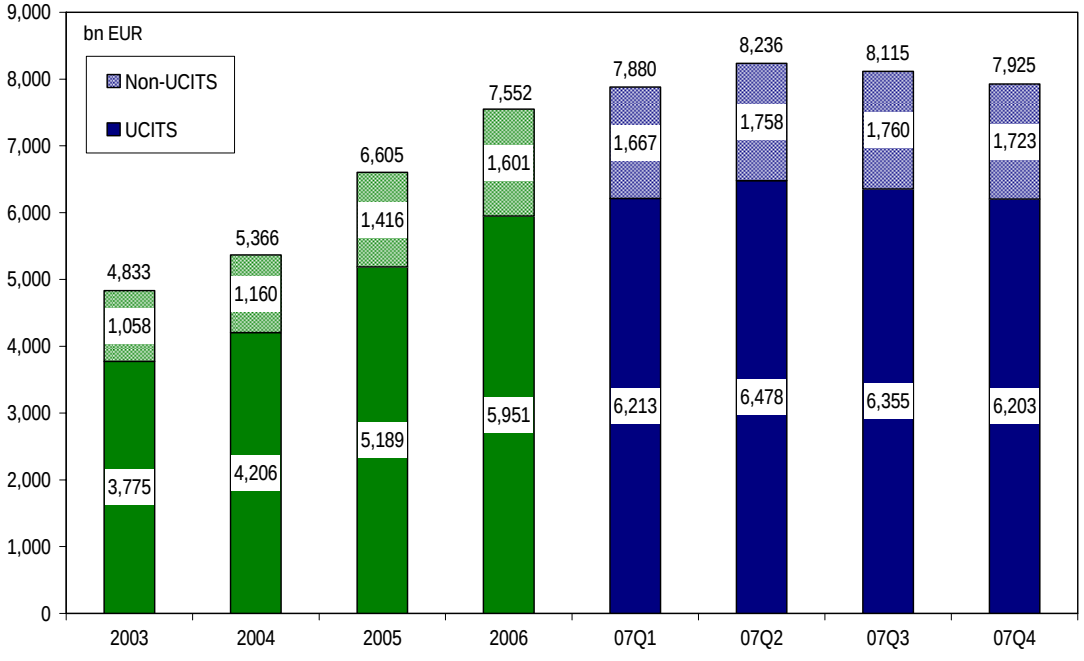
upward trend in assets under management was sustained by a positive, if weak, performance effect for equity funds as well as an income effect underpinned by the uninterrupted rise in short-term interest rates.

Figure 43 - Global net assets of UCITS by region
(EUR billion)



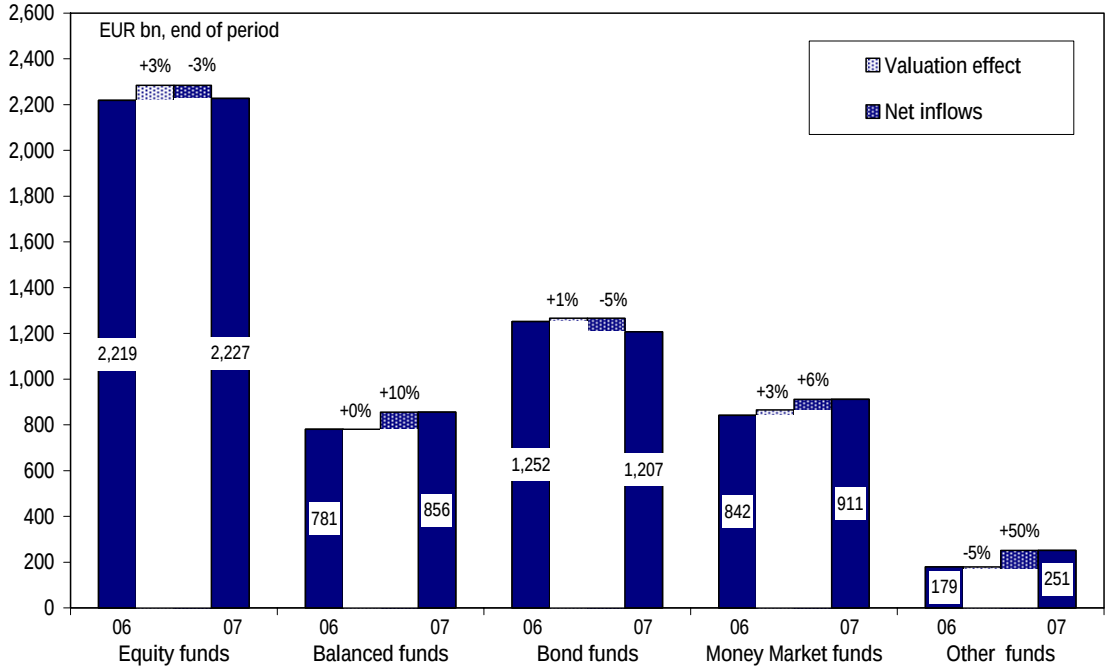
Source: ICI

Figure 44 - Europe: Net assets of UCITS and non-UCITS
(EUR billion)



Source: EFAMA

Figure 45 - Europe: Sources of variation in assets under management in UCITS
(EUR billion)



Source: EFAMA, AMF calculations

3. Non-UCITS funds posted particularly rapid but somewhat varied growth

The expansion of the asset management industry is measured not only by assets under management of UCITS but also by assets of collective investments schemes without harmonised status ("non-UCITS") marketed primarily to qualified institutional and wealthy individual investors. This is coupled with strong growth in "reintermediation", where assets managed by institutional investors (such as insurance companies and pension funds) are in turn invested in various kinds of managed products, including funds of funds.

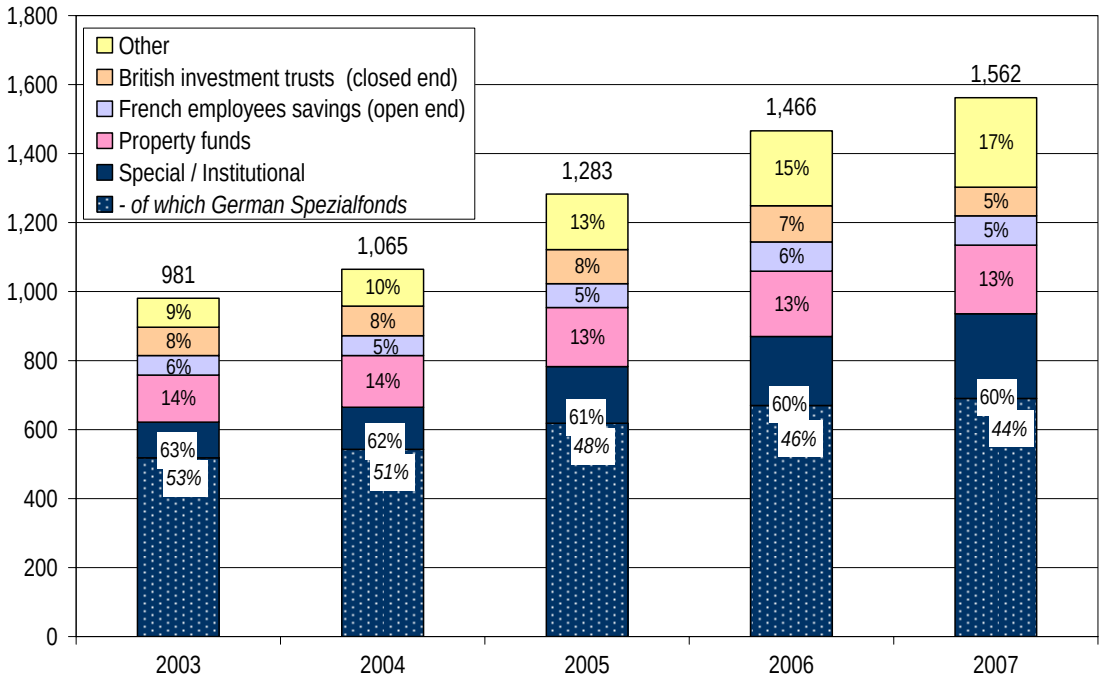
European statistics on non-UCITS at end 2007 reveal some pronounced trends (Figure 46). They show non-UCITS assets growing at an annual pace of 6.5%, or significantly faster than UCITS assets (4.2%). Two considerations limit the reach of these observations: the considerable differences between the non-UCITS funds included, which in general are organised under national-law regimes related to those for harmonised funds; and the scope covered by the European data, which do not count "offshore" funds such as hedge funds and do not include private equity funds other than those organised under a regime similar to one for coordinated funds, such as France's FCPR regime for venture capital funds. This said, a closer analysis of the sources of growth of assets under management[44] is instructive.

First off, one observes vigorous growth of **institutional funds**, within non-UCITS. At end 2007, institutional funds accounted for 60% of the EUR 1,562 billion total of assets under management in non-UCITS funds covered by the data. Their growth is probably a reflection of a more general, structural trend in institutional investment management (Figure 47). As such, the same trend is likely to be present for discretionary asset

[44] Even when historical data are available for assets under management, one is seldom able to measure the effects resulting specifically from inflows of new money as distinct from effects associated with performance on previously invested funds.

management under mandate. In this regard, the available data for France show that assets under discretionary management amounted to close to two-thirds of total assets managed by UCITS. For want of relevant statistics for the rest of Europe, however, it is difficult to make comparisons of the relative importance of discretionary management.[45] Besides, the non-UCITS fund category, probably owing to its longer-than-average investment horizons and higher proportion of "safer" assets, seems to be less sensitive to the valuation effects that affect the fund management business as a whole, making it somewhat more immune to economic downturns.

Figure 46 – Europe – Assets under management in non-UCITS*

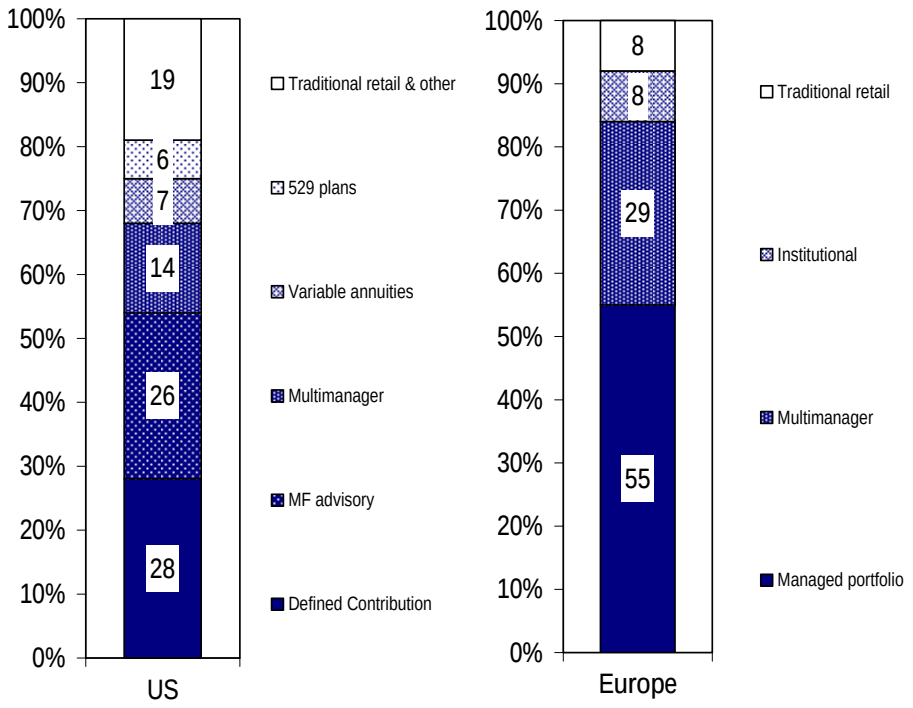


** Excluding Irish funds, for which detail by subcategory of non-UCITS funds is not available.*

Source: EFAMA

[45] Work currently being done by EFAMA may soon shed more light on this issue.

Figure 47 - Estimated net inflows by form of vehicle (2006)



Source: Jefferies Putnam Lovell on the basis of information from Strategic Insight, Cerulli Associates, Investment Company Institute, Lipper FERI, Plan for Life.

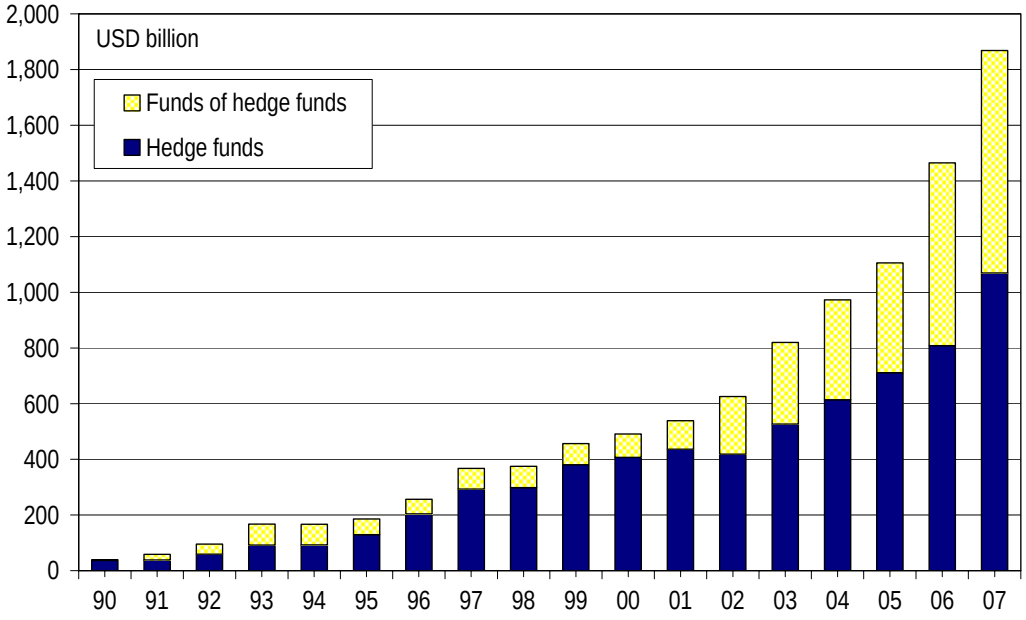
Next, **alternative investment management** has increased significantly. The second main factor in the growth of non-UCITS funds is linked to the expansion of funds in the "Other" category (defined as the remainder), and it seems to derive mainly from the growth of alternative funds domiciled in France (in particular, ARIA and futures funds), Luxembourg and Italy (EUR 6.8 billion of new money in 2007). Still, assets under management in "Other" funds represent only a small fraction of alternative investment management as whole, if offshore hedge funds are included. Worldwide, assets of hedge funds, as estimated by Hedge Fund Research, grew strongly in 2007: up 32.3% to USD 1,068 billion, not including funds of hedge funds (Figure 48).[46] Given annual performance estimated at between 5% and 10%[47], an increase of this magnitude unquestionably reflects continued net inflows. Geographically, the growth in these inflows seems to be coming primarily from Europe and Asia. Hedge fund assets in these regions remain low compared with the USA and are growing at 40% a year[48,49].

The impact of the liquidity crisis on hedge funds is difficult to analyse from an economic standpoint because these vehicles vary so significantly, both in terms of investment strategy (and therefore the assets they hold[50]) and in terms of size (two hundred funds account for some 75% of assets under management; the ten largest, for more than 15%). In aggregate, it appears that the 2007 performance results reflected

[46] USD 1,730 billion according to Lipper Tass, USD 2,680 billion according to HedgeFund.net.
[47] Measures of aggregate performance are susceptible to bias by the way in which strategies are weighted and by samples that may not be representative of the hedge fund population. The indicators used as observations vary from 4.2% for the HFR Global Hedge Fund index to 11.6% for the Hennessee Hedge Fund Index.
[48] Source: McKinsey Global Institute.
[49] We observe here that the information generally reported by the media fails to distinguish between funds of hedge funds and hedge funds proper. The global assets under management as usually counted include some USD 800 billion in funds of hedge funds (see figure 10).
[50] The main categories are Long/Short Equity, Fixed Income Arbitrage, Event Driven, Global Macro (especially Equity Long Bias and Emerging Markets), but it should be noted here that the nomenclature is neither firmly established -- it varies from one producer of hedge fund indices to another -- nor stable.

primarily the difficulties of a few big names in the business,[51] and on balance the negative monthly returns of the summer were offset by positive returns later in the second half. The dispersion of performance by strategy, however, is seen to have risen considerably in 2007.[52] Directional equity market and global macro strategies posted returns of better than 10%, largely on the strength of stock market performance in emerging countries. In contrast, arbitrage and quantitative strategies posted poor or even negative performance against a backdrop of high volatility. Lastly, available information for early 2008 seem to corroborate the view that hedge funds, although identified as major players in the securitisation market, have been able to prolong a sort of "grace period" because their liability constraints are less pressing. (Their lock-up periods generally enable them to avoid realising losses immediately.) It should therefore be noted that, at a time when the market crisis in underlying assets (subprime loans in the first place) seems to be dragging on, these funds seem to be able to keep outperforming the rest of the discretionary management business.

Figure 48 – Global assets under management in hedge funds



Source: HFR

The last item of note is the rapid growth of **private equity**, which then came to a halt in the second half, at least in the large-transaction segment. The EFAMA dataset on private equity funds, defined as funds that provide capital and/or managerial resources to companies with the aim of generating medium- to long-term capital gains, covers mainly national-law funds such as French FCPR, FCPI and FIP funds, which represent a significant proportion of the activity of the private equity industry in France (FCPRs accounted for 70% of new capital raised in the first half of 2007). It does not cover other kinds of legal entities, especially in the UK, which accounts for the bulk of private equity business in Europe. The EFAMA data nonetheless do bring out the extremely brisk pace of private equity business through the first half of 2007. For example, data from the French private equity association, AFIC[53], reveal that the amounts invested by French private equity firms increased by 56% to EUR 6.4 billion in the first half of 2007, from just

[51] Natixis *Special Report* of 7 January 2008 cites, among others, Dillon Reed Capital Management (UBS), the two HGSC funds (Bear Stearns), Sowood Capital Management, Sentinel Management Group, and Global Alpha (Goldman Sachs).
[52] The generalised nature of the initial impact of the August 2007 subprime crisis across all strategies is nonetheless striking.
[53] Association Française des Investisseurs en Capital.

EUR 3.4 billion two years before. In the event, the ample liquidity of the past few years was accompanied by a considerable loosening of credit standards. This produced a spectacular boom in leveraged buyouts, particularly in the market for large deals (more than EUR 100 million). In France, for example, AFIC measured growth of invested funds in this segment at an annual rate of 113% in the first half of 2007 – this, following several years of sustained growth. The tightening of credit conditions in the wake of the debt market crisis brought activity in this segment to an abrupt halt in the second half of 2007. In particular, the very sharp reduction in sources of financing, most notably the drying up of "covenant-lite" loans and bridge loans[54], greatly increased the difficulty of bringing large LBO transactions to completion. Even so, recent data on the French market show that activity remained brisk throughout the year in the segment of smaller deals less dependent on terms in the credit market.[55]

Lastly, one also observes an uptick in flotations of private equity and hedge funds. Although not, at this stage, of sizeable importance in terms of assets under management, this phenomenon is becoming common among the bigger players, notably in the USA, where Blackstone raised more than USD 4 billion through its initial public offering in June 2007 (table 12).

Table 12 - Largest initial public offerings in history for asset management companies

Date	Target	Country	Type*	Amount raised (USD million)	Free float (%)
6/07	**Blackstone Group**	**US**	Alternative (PE)	**4,130**	**12%**
11/07	**Och-Ziff Capital Management Group**	**US**	Alternative (HF)	**1,147**	**9%**
2/07	**Fortress Investment Group**	**US**	Alternative (HF)	**634**	**9%**
5/07	**Platinum Asset Management**	**Australia**	**Long/short global**	**573**	**25%**
10/06	Ashmore Group	UK	Alternative (HF)	560	25%
11/07	**Gottex Fund Management Holdings**	**Switzerland**	Alternative (FoHF)	**535**	**28%**
3/98	Waddell & Reed Financial	US	Long-only MF	499	34%
7/04	Azimut Holding SpA	Italy	Long-only diversified MF	467	65%
3/06	Partners Group	Switzerland	Alternative (HF)	385	30%
11/07	**Value Partners**	**HK**	**Alternative (HF)**	**374**	**24%**

** MF: mutual fund. PE: private equity. HF: hedge fund. FoHF: fund of hedge fund. Notes: Data converted into USD at the exchange rate on the announcement date. In bold for 2007.Source: Jefferies Putnam Lovell.*

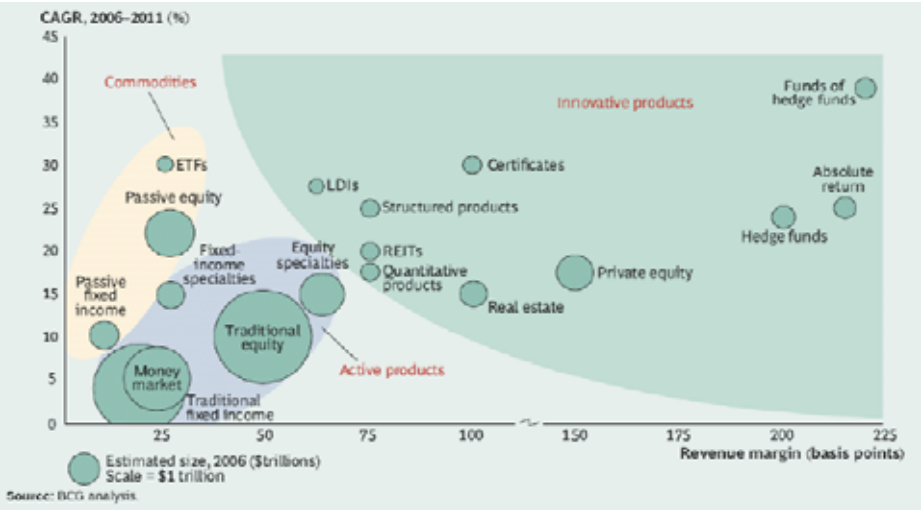
[54] Short-term bank loans to provide time to arrange long-term financing solutions.
[55] See AFIC's statement as quoted in "Seuls les grands LBO devraient connaître un coup d'arrêt en 2008", Agefi, 12 March 2008.

4. The range of products on offer has seen several noteworthy developments, both in listed index-tracking funds and in specialised investment vehicles

In general, looking at a segmentation of the market by product, offerings seem to be clustering around multiple poles. This is true of the development of passively managed products, especially exchange-traded funds (ETFs), as well more costly innovative products (Figure 49), with the dividing line between these two categories tending to blur. On this basis, four main sources of innovation and growth in fund management can be identified.

The first is in the area of funds invested in new asset classes. Assets under management in property funds, which are proliferating in European countries (principally Germany, the UK, France and Italy), seem set to grow for structural reasons,[56] if less so in France in 2007, given national macroeconomic conditions. In the economically more robust German market, property investment funds took in EUR 6.4 billion of new money in 2007, lifting growth in total European assets under management in this fund category to 5.3% in 2007. Funds invested in commodities, especially petroleum products and precious metals, benefited from favourable conditions in the underlying markets. They posted strong growth, not least because of the valuation effect on average assets (12% for French funds, for example). In good part, this trend reflects the development of ETFs replicating the performance of these asset classes. Worldwide, ETFs of this type, virtually nonexistent before 2003, held EUR 6.3 billion in assets under management at year-end 2007.

Figure 49 – Gradual transfer of assets from traditional benchmarked actively managed funds to passively managed funds and innovative products



Source: Morgan Stanley Exchange Traded Funds - Year End 2007 Global Review

The second source of growth is in the area of "**non-benchmarked funds**". Emblematic of this fund category, "absolute return" funds posted strong growth and were actively promoted in recent years, before being set back by their poor average performance in 2007 (as mentioned above). But numerous other types of investment are on offer in this category, in particular 130/30 long-short strategies currently promoted by distributors.

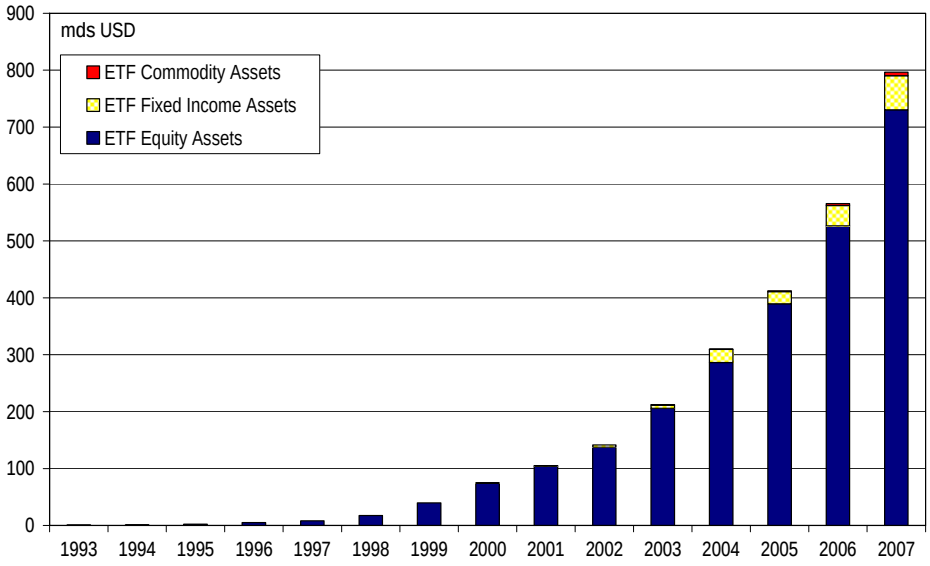
Third source of growth, listed funds are enjoying very rapid growth. Equity trackers, which are index funds in the strict sense of seeking to replicate the performance of an underlying stock market index, constitute

[56] According to Europerformance, French funds invested in property company equities posted a -22.3% return in 2007.

the main component of these ETFs. Their assets under management rose sharply in 2007, demonstrating their ability to take advantage of trends in the economy (Figure 50). Innovation in the ETF field is extremely lively, however, and is reflected in the growing number of underlying indices. Some ETFs represent embodiments of investment strategies (based on sustainable development indices or Islamic investment practices, indices weighted by fundamental factors or dividend payouts, and so on), whereas others seek to replicate performance of new asset classes (commodities, property, hedge funds, etc.). Others offer structured risk, for example, the BuyWrite ETFs, which represent strategies of investing in covered call options, or the Leveraged ETFs, which are designed to augment exposure to the performance of an underlying index.

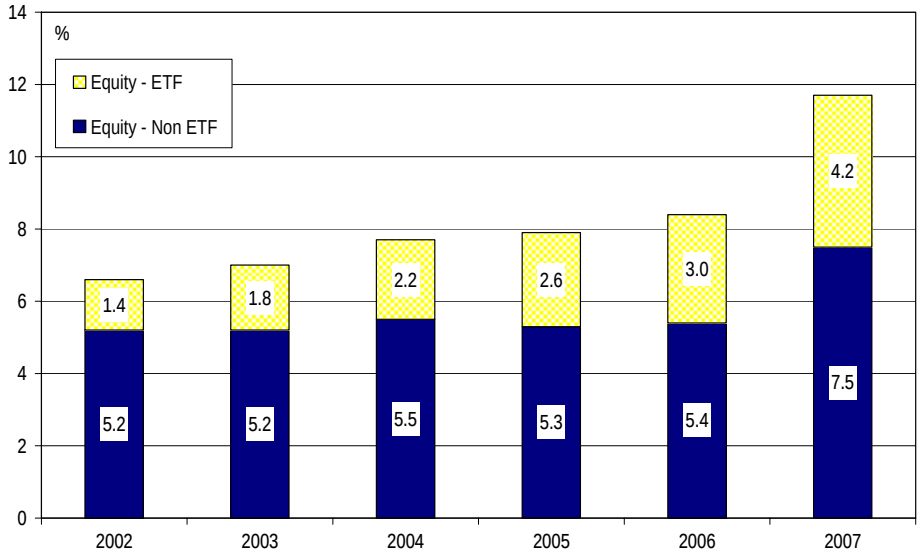
Such lively innovation reflects the keen competition on the market for different types of structured investment vehicles, some of which do not take the form of investment funds (see inset).

Figure 50 – ETFs: Global assets under management
(USD billion)



Source: Morgan Stanley Exchange Traded Funds - Year End 2007 Global Review

Figure 51 – Equity index funds - Net assets as % of total of funds based in Europe



Source: Lipper FERI at 25 January 2008, cited by Morgan Stanley (2007)

Structured investment management for retail investors: investment funds versus structured products

Certain collective investment schemes, namely structured funds, are similar to structured products such as investment certificates. Certificates typically promise payouts calculated according to a formula based on the performance of underlying securities or indices, at fixed maturity dates. Investment certificates have a legal form of their own and differ from structured products in various other respects:
- they are issued by asset management companies rather than investment banks;
- investors own the assets of investment funds, whereas structured products generally take the form of debt securities and therefore bear a credit risk;
- in the European Union, structured products are subject to the rules of the Prospectus Directive and are often traded on a regulated market, whereas investment funds are subject to UCITS regulations.

In practice, funds offering principal guarantees make up most of the market for structured investment funds. One widespread form provides an optional-based structure under which investors can benefit from favourable changes in stock market indices at a given maturity but avoid a capital loss if the indices have moved adversely. Typically, a portfolio of this kind consists of a bond and a call option on the underlying index. However, the formulas on offer are increasingly diverse.

Lastly, multimanagement represents a fourth notable trend. Multimanagement is the name for various forms of investment management, in particular funds of funds, funds of asset managers, and funds of hedge funds. In all its forms, multimanagement seems to be growing briskly. By way of illustration, the EFAMA data, although partial (they do not cover French, Luxembourg or Italian funds of funds), show growth in assets under management of 7.5%, higher than observed for UCITS. The growth in assets under management for hedge funds is even more remarkable, with an increase of 22% between end-2006 and end-2007 to EUR 800 billion, or nearly three-quarters of hedge funds assets. More generally, institutional investors are investing increasingly in investment funds and collective investment products; in France in particular, unit-linked life insurance products have been growing steadily (see above).

5. Multiple factors continue to determine the industry's profitability

In the near term, the profitability of the fund management industry stands to bear a significant impact from current economic conditions. Some estimates are already projecting a decline in profitability of some 30% in Europe,[57]– granted, from what were historically high levels in 2006.[58] More fundamentally, fund managers' profitability could be affected by developments of two kinds. For one thing, the inherent variability of profit levels is due largely to the variability of the assets on which management fees are based and is therefore largely a reflection of stock market performance. Variability is reinforced by behaviours that amplify valuation effects on assets under management, as well by more widespread adoption of performance fees. Moreover, the "polarisation" of fund offerings seems to be leading to two sources of profitability. The first lies in economies of scale (at the international level) and industrialisation (i.e. automation) of the production processes made possible by passive management (in particular of ETFs), which made remarkable inroads in the French market in 2007. The second lies in industry players'

[57] See citation of McKinsey in "Mutual funds markets face long-term outflows", Financial News, 25 February 2008.
[58] See the AMF's 2006 report on asset management.

capacity to devise innovative products that can command high prices (Figure 51), such as, for example, funds invested in emerging market equities and funds investing in alternative assets. This capacity can be analysed as a way of escaping from head-to-head competition, and it may explain part of the pricing discrepancies observed across Europe (Figures 52 and 53).

French and Luxembourg-TER retail funds*(%) **and standard deviation by size class**

(EUR million)

Figure 52: Equity funds

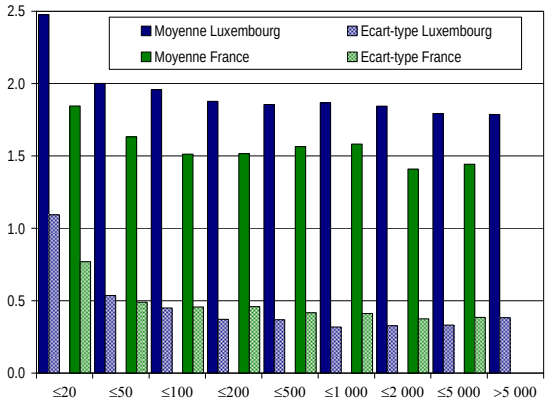
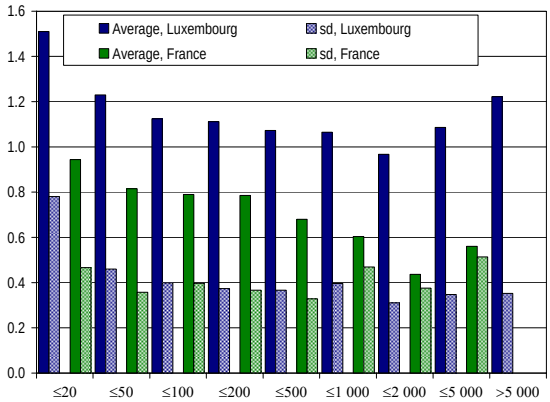


Figure 53: Bond funds



** Total Expense Ratio measure by Lipper Fitzrovia corresponds to the French "total des frais sur encours" (TFE). Several classes of a fund's shares characterise the various tarifications relating to each distribution channel. So-called "retail" shares bear the tarification of distribution channels to the general public, and differ mainly from "institutional" hares. Source: Lipper Fitzrovia, AMF calculations.*

SUMMARY OF TRENDS AND RISKS ON MARKETS FOR INDIVIDUAL AND COLLECTIVE INVESTMENT AND FOR RETAIL INVESTORS

Risk of inefficient allocation in household portfolios

The distribution of French households' financial assets by risk level shows that in aggregate, these portfolios still have very little exposure to financial markets. At year-end 2006, 75% of households' investments bore no principal risk. From the standpoint of investor protection, this finding might appear reassuring, but it also highlights very clearly that households' investments are insufficiently diversified and their investment horizons are probably inappropriate (yield loss for long term investments devoted to retirement preparation). This situation is explained in part by tax factors and probably also by a high level of psychological aversion to risk of loss. The highly procyclical tendency of household investments in equities – as suggested by the surge in inflows to unit-linked life insurance contracts since the 2004 low, paralleling the stock market recovery – is further cause for concern. The consequent risk is that investment behaviour will be systematically inappropriate to market conditions, with investments in risky assets being made just when prospective returns are likely to be lowest.

Risk of mis-selling and poor investor understanding of some products

Financial innovation and the increasing complexity of some investment products often make it difficult to comprehend how they work. Since the revision of the UCITS Directive, changes at EU level in the nature of eligible assets of coordinated funds have enabled the general public to benefit from advanced investment strategies, notably when volatility is high or markets are retreating. However, the techniques that are used have engendered greater difficulty in harmonising transparency standards across Europe for the all related products. The consequent risk is that investors will misunderstand the specific risk/return profile of such products unless the marketing of them is systematically accompanied by advice tailored to the customer's situation.

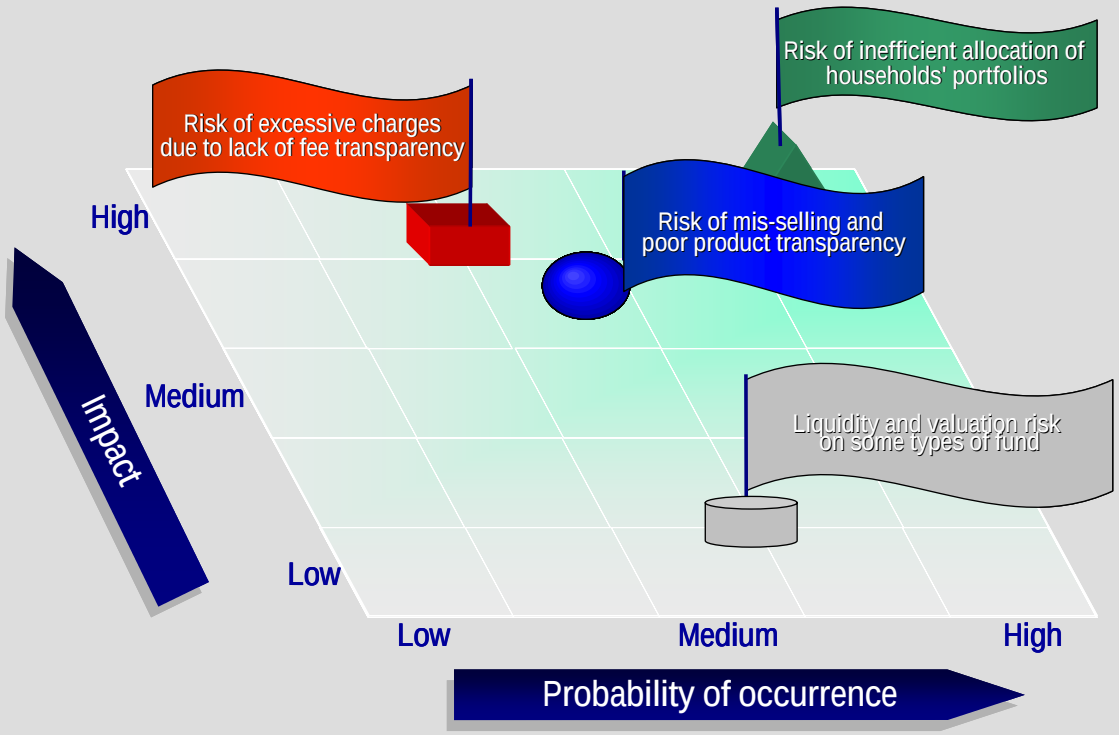
Risk of excessive fees associated with inadequate pricing transparency

The decline in returns across all financial markets in 2007 puts the issue of fees charged on financial products into even starker relief. A number of developments stand to impair transparency of fees, starting with the complexity of products that use derivatives and techniques to take on market exposure in excess of the amount invested. These techniques require a rising number of participants, thereby lengthening the chain of intermediaries and making it hard to quantify margins on a given transaction. Moreover, the proliferation of competing wrappers adopted for tax and legal purposes to structure and market what is, from an economic standpoint, the same product, may make it difficult to get a fair assessment of the fees charged on it and their impact on its future performance.

Liquidity risk and wrong valuation risk in certain types of funds

Questions relating to fund liability management have been brought to the fore again by the subprime crisis. A number of funds characterised as "dynamic" money market funds have encountered liquidity problems owing to their exposure to structured products. These developments raise questions as to how well investors actually understand the valuation risks or the risks entailed by limits on redemptions at funds invested in inherently illiquid assets such as private equity, alternative funds, small-cap funds or property – all of which have seen significant growth in recent years.

SUMMARY OF TRENDS AND RISKS FOR RETAIL INVESTORS



****

The risks identified in the preceding paragraphs suggest a number of courses of action for the regulator:

- the risk of inefficient asset allocation calls for more efforts in financial education, along the lines of the initiatives already taken in this area with the creation of France's Institute for Public Financial Education (IEFP).
- the risks of inappropriate marketing and excessive fees call for continued efforts to improve the information given to the public at the time of acquisition of a financial product. In particular, the work at EU level on simplifying the fund prospectus ought to give some thought to developing more satisfactory and comprehensible indicators of the risk and return characteristics of financial products, in connection with the horizon of investment – indicators that can be understood by the public at large.
- the liquidity and valuation risks on certain types of investment funds call for reconsideration of how liability constraints are adapted to investment policy when that policy includes complex or illiquid assets.

Contact : **Public Relations Department**
contact@amf-france.org
01.53.45.60.28

* Consultant, Lecturer in Economics, University of Angers.