CESR REPORT

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TRENDS, RISKS AND VULNERABILITIES IN FINANCIAL MARKETS

Executive Summary

At the current juncture, reporting on trends, risks and vulnerabilities that are directly relevant to financial markets regulators requires reference to the considerable uncertainties that are attached to the general economic and financial environment and their potential impact on markets. Several issues merit to be highlighted from the outset:

- In light of some global positive signs - e.g. rating agencies expect default rates to decrease by the end of 2010 - a tendency to downplay the severity of the current crisis may emerge, accompanied by a reluctance to recognize the need for financial reforms. There is therefore a risk that urgently required regulatory measures are neither fully considered nor implemented in an appropriate way. At the same time, emergent risks might trigger hasty decisions about regulatory measures deemed necessary; a prior and full analysis of the problems involved is, however, essential.
- In fact, there are non negligible risks of a new deterioration in securities markets ahead: in particular uncertainties about the worldwide economic recovery, including a double-dip recession in some European countries, and rising and broadening of European sovereign risk. On derivatives markets, in particular in the sovereign CDS segment, it is likely that markets will continue to "test" (both in the derivatives and in the spot markets) countries in difficulties to achieving the announced budget and debt goals, as well as some of their main financial institutions. It is worth noting, however, that a sensible reduction in the perception of sovereign risk has been observed in both the cash and the CDS markets since the end of June 2010, with lower yield differentials with regard to the German bonds and lower CDS premia. The improvement has apparently been fuelled by the implementation of tough fiscal adjustment programmes in most European countries and the authorities' commitment to carry out stress tests in a significant number of European financial institutions and disclose the results. In particular, the impact of the latter will reveal whether the uncertainties about the soundness of the financial sector are still a critical issue for the European economy, including the public sector finances of the EU Member States.
- The persistency of severe strains in the financial system was particularly evident in the fact that banks were still relying on the ECB's deposit facility for amounts which significantly exceed those observed in the aftermath of the Lehman default. An unprecedented package of support, the European Financial Stabilisation Mechanism which includes a EUR 440bn European Financial Stability Fund and additional funding from the IMF, has been agreed and is being put in place. Since May, the ECB started to buy treasury bonds in the secondary markets, trying to re-establish the equilibrium of this market, reducing the yields and creating more acceptable conditions to new issuances in the primary market. It must be pointed out, however, that the bulk of the ECB acquisitions in government debt markets took place in May and the two first weeks of June (EUR 50bn out of a total amount of EUR 60bn), to decline afterwards, following the improvement in the perception of sovereign risk mentioned above.
- The financing requirements of countries and companies may become an issue in the near term. Although for investment-grade non-financial firms the aggregate situation seems comfortable, especially in terms of debt roll-over, sub-investment grade companies may find it difficult to either finance themselves in the markets or through loans. Banks themselves are likely to build up liquidity for the regulatory changes ahead, with consequences for the funding of the corporate sector.

The financial crisis has triggered a process of financial disintermediation whereby banks play a diminished role in the financial system (e.g. reduced loan and securitisation activity) and direct

finance becomes increasingly important, as the record bond issuance of corporate firms in Europe (and the U.S.) shows for the year 2009. This shift, which is reflected in the significant increase in the share of bond issuance in the total debt of corporate firms, also has implications in terms of the risk distribution within the financial system, including systemic risk.

Against this background, one might wonder how the European financial system will be evolving in the medium term. In the past, a dichotomy between bank-based and market-based financial systems has been diagnosed with some debate as to whether there is a natural evolution from one to the other. Indeed, neither theoretical nor empirical arguments seem to strongly support a convergence hypothesis, and point, instead, rather to advantages and inconveniences specific to each of the two polar models. Alternatively, one might argue that the dichotomy has already lost at least some of its relevance, and that financial innovations, like securitisation, are likely to lead to the emergency of new "hybrid systems" which might combine the advantages (but also preserve some inconveniences) of both previously diagnosed systems. This second hypothesis rests, however, on developments in financial markets which have been seriously affected by the financial crisis under way. Going forward, it remains to be seen to what extent the combination of market and regulatory developments will be able to both develop the welfare-enhancing risk sharing functions and curtail the welfare-decreasing effects of informational asymmetries of financial innovations.

Aside from high asset valuation, two signs which have been identified in the past as conducive to (without being sufficient conditions for) a bubble - rapid growth in private-sector credit and significant investment flows into particular asset classes - are not currently present. Looking forward, if a low interest rate environment were to persist, a close monitoring of the situation in emerging and commodities markets on the one hand and, within Europe, specific developments in local markets (like real estate) on the other hand, might well be needed.

There is considerable competitive pressure on financial market participants created by the current financial crisis. Going forward, this is likely to lead, on the one hand, to consolidation with a possibly increased concentration of activities and risks, and, on the other hand, to various financial innovations, which might be real or more apparent.

The evolution of the boundaries between wholesale markets and retail markets need to be monitored with due attention because of an increasing tendency to shift risks to (possibly unaware) retail investors through new complex financial products.

Key trends, risks and vulnerabilities

(see the numbered sections for details)

1. **Stock market volatility has spiked recently,** reflecting **risks ahead**: uncertainties about the economic recovery, and **broadening of European sovereign risk, which might raise issues of potentially destabilising speculation and possible market manipulation. Since the end of June** there are signs, however, **of a lower perception of risk both in the government debt markets and the equity markets, following** the implementation of **ambitious fiscal adjustment policies** in most EU countries **and the announcement of a wave of stress tests** in European financial institutions whose results were disclosed at the end of July.
2. A VaR perspective shows the **possibility of a decline in the EuroStoxx 50 at a 3-months horizon higher than the historical average; skews indicate an unusually high risk of a downward correction** both for the EuroStoxx 50 and the S&P 500; EuroStoxx 50 **dividend futures reflect low growth expectations over the next eight years.**
3. **Further analysis needs to be conducted to assess whether there has been market manipulation in relation to the European Sovereign CDS markets and whether CDS spread speculation could impose a destabilizing risk for the refinancing position of sovereigns.** The low percentage of the net notional amount of outstanding CDS in relation to debt for countries with a more fragile fiscal position indicates that the latter is rather not the case. **The scarce information supervisors have on OTC markets prevents, however, more secure conclusions**.
4. The **recent all-time high in the ECB deposit facility** (over EUR €360bn) points to the **continued presence of a "managed systemic financial crisis".**
5. **The hedge fund industry is consolidating** and **hedge funds** have taken measures to attract new capital: **redemption policies are more favourable to investors, and hedge fund products are in certain cases distributed through exchange traded products, mutual funds and UCITS.** This may lead to "retailisation" including a possible **miss-match between expected and realised returns from the investors' perspective.**
6. **Since 2009 Q4, deleveraging affects the corporate debt market** in which debt roll-over does not seem to be an immediate risk; **bond issuance now represents over 2/3 of total debt of European non-financials**, compared to less of 2/3 last year.
7. **The respective role of demand and supply side factors in the current subdued securitisation market is unclear**, and going forward, **uncertainties** exist as to **whether** at least some **specific market segments could recover** on their own **or structural constraints** hamper the revival of the market.
8. **The impact of High Frequency Trading (HFT) on market structure is still not fully understood.**
9. **Since 2009 Q1, there is a quasi-halt of private equity** activity with a quarterly deal value below EUR 20 bn; **investments and divestments have, however, increased; even though the private equity industry seemed to have bottomed out in 2009 H2, a rebound of the buy-out dominated PE activity is partly dependent on the capacity of the banking sector to provide the complementary financing. This activity is also still deprived of much of the leverage of the pre-crisis period.**
10. **UCITS net inflows continued after the "interruption" in 2009 Q4; redemptions from money market funds persist** in favour of alternative investment vehicles with potentially higher returns; considering all UCITS categories, almost all Member countries recorded net inflows, but due to redemptions in money market funds, **Spain was particularly affected by net outflows.**
11. The number and overall value of M&A deals significantly declined to reach a **historic low** in May 2010**.**
12. Timid signs of a **revival in IPO market** in 2009 Q4 were **reconfirmed in 2010 Q2.**
13. **In 2009 Q2, the number of ETFs listed in Europe surpassed those listed in the U.S.; Exchange Traded Products (ETPs)** - Exchange Traded Funds (ETF), Exchange Traded Commodities (ETC) and Exchange Traded Notes (ETN) - **are expected to grow in 2010; ETF trades in Europe are not always reported as they are currently not covered by the MiFID transparency regime. Product innovation in the last few quarters has raised several issues from an investor protection perspective.**

CESR Report on Key Trends, Risks, and Vulnerabilities in Financial Markets

1. **After spiking in mid-January, and edging to its long term level by mid-April, stock market volatility increased significantly in May and June thereby reflecting risks of a new deterioration in securities markets ahead. Since the end of June there are signs, however, of a lower perception of risk both in the government debt markets (cash markets and credit derivatives) and the equity markets, following the implementation of ambitious fiscal adjustment policies in most EU countries and the announcement of a wave of stress tests in European financial institutions whose results were disclosed at the end of July.**

Similar to the first correction of equity prices in mature and emerging markets from mid-January until mid-February, the recent second, more pronounced decrease was mainly driven by three factors:

a. uncertainties about the worldwide economic recovery, with, in particular, a significant risk of a double-dip in some EU countries (see 3L3 cross-sector risk report[1]),

b. continuous European sovereign risk, which potentially raises issues of market manipulation and destabilising speculation (see section 2),

c. risks surrounding the "managed systemic financial crisis" (see section 3).

The recent fall in equity markets (figure 1), which featured a "flash crash" of a still unknown nature (see box 1), affected in a broadly equal way the Eurostoxx bank index (-20.0 % from mid-April to mid-June) and the Eurostoxx 50 (-20.0% over the same period). After having edged back to their long term values by mid-April, implied volatilities of major stock indices spiked by more than 10 bp within the last two months. Credit markets did not escape the correction with spreads widening across the entire risk spectrum (figure 2 and figure 23).

The three risk factors listed above continue to be relevant going forward despite some positive news. According to Moody's, pessimistic and optimistic views on the evolution of default rates in investment grade bonds have decoupled. Their April baseline scenario for Europe is nevertheless still forecasting a decrease in speculative-grade default rates from 13.5% in November 2009 to between 1.1% and 4.8% at the end of 2010[2]. However, under a pessimistic scenario, where high yield spreads widen significantly to 750 bp and unemployment increases to 13.9%, the European speculative-grade default rate could be around 6.2% by year end. This latter scenario should be given due attention given that the perceived likelihood of defaults has increased recently, not least because of the high level of past issuance and prolonged uncertainties in European economies, and their potential effects on financial markets.

Since the end of June, market data reflects a sensible improvement in the perception of risk by market participants, even though it is still high. This is particularly evident in government bond markets, where there has been a reduction of bond yields, spreads with respect to German bonds and CDS premia on sovereign risk. The improvement was also patent in the lower intensity of the ECB's stabilizing operations in government bond secondary markets through the Securities Markets Programme. The ECB, that had carried out acquisitions of European bonds through this programme by an amount of EUR 50bn during May and the first half of June, spent only EUR 10bn more in those operations since then and the middle of July (see also section 4). The lower perception of risk favoured and, in turn, was reinforced by the success of important roll-overs of government debt in some high deficit countries, especially Greece and Spain, Another sign of improvement in risk perception is the fact that new rating downgrades for Portugal and Ireland

[1] In March 2010, the 3L3Committees (CESR, CEIOPS and CEBS) have produced a report on cross-sector risks covering both exogenous macro-economic risks common to the different financial sectors, as well as endogenous mechanisms of transmission and contagion of risks between sectors.

[2] Moody's, *European Corporate Default and Recovery Rates, 1985-2009*, April 2010. In a similar vein, though for the U.S., Fitch forecasts a high yield default rate of as low as 1% for 2010 ("The Extreme Credit Cycle - Making Sense of a 1% U.S. High Yield Default Rate", *Corporates Credit Market Research*, 21 June 2010).

did not have a significant impact neither in bond spreads or in CDS premia for their related sovereign issues. Equity markets, including the financial sector companies, have also benefited from the reduction of risk and have experienced upward movements in prices.

The recent improvement in the perception of risk came after two important commitments. Firstly, the adoption of tough fiscal policies by many EU Member States in order to guarantee and accelerate the correction of the current fiscal imbalances. Secondly, the commitment of banking regulators to carry out stress testing in a significant number of European financial entities and publish the results. The market reaction to the commitment on stress testing suggests that the lack of transparency about the soundness of the financial institutions is still a critical obstacle to stabilize financial markets.

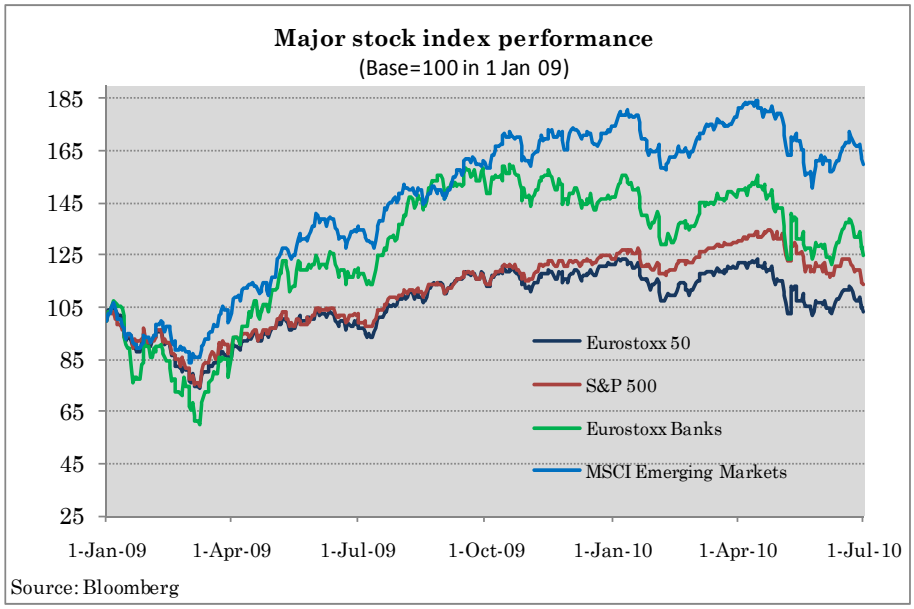

Figure 1 (data until 2 July 2010)

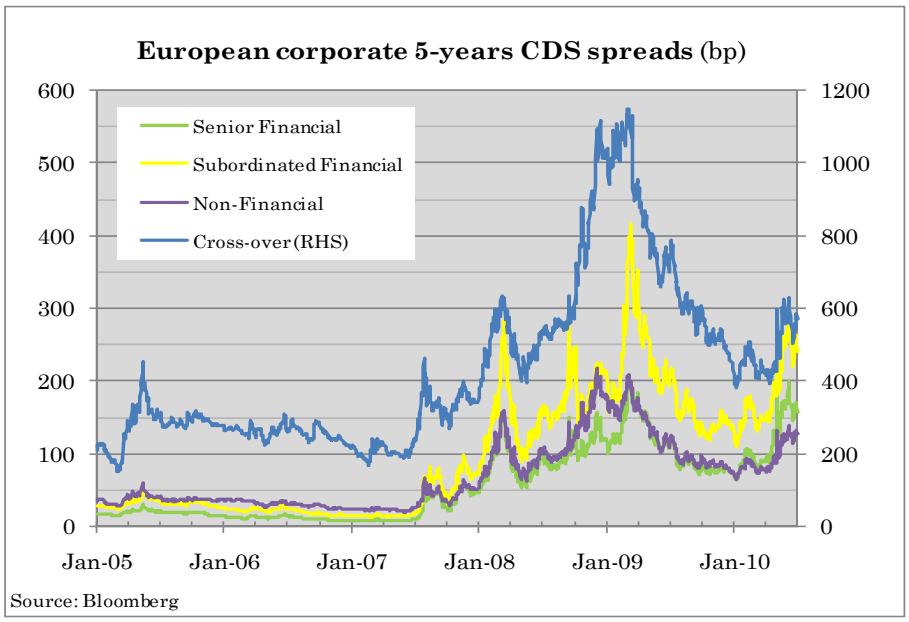

Figure 2 (data until 2 July 2010)

Box 1: The "flash crash" of 6 May 2010

On 6 May 2010, the Dow Jones Industrial Average (DJIA) witnessed a large decline from the previous day (-998.5 points, i.e. -9.16%). Moreover, it rebounded very quickly. A range of other markets showed similar movements. The "event" features, among others, the following peculiarities:*

- *Sudden steep decline and, unprecedented, almost immediate rebound for the stock market as a whole within one single trading day (figure 3),*
- *significant negative returns for certain issues,*
- *intraday lows close to zero for about 200 issues (figure 4),*
- *heightened short selling at or near the intraday low,*
- *extreme intraday highs of many issues, particularly among ETFs,*
- *disproportionate representation of ETFs among extreme negative and positive returns (figure 5).*

*As a result of the complexity of this phenomenon, it is currently not entirely clear what exactly happened, and investigations by the CFTC and the SEC are still under way. The event took place in a general environment of increasing concerns about the fiscal situation of some euro area jurisdictions, and uncertainty about developments in the U.S. labour market and effects of the UK elections. On the same or the following days, there was a serious impairment in the functioning of several markets**: liquidity became rare in the interbank money markets on 6/7 May (including the short term maturities of the overnight market), a jump in costs made access to USD funding difficult, liquidity tried up almost entirely for Greece on 7 May, and, from that day on until 12 May 2010, the world largest multi-currency foreign exchange settlement system, CLS, experienced levels of stress not seen before with unexpectedly high volumes creating backlogs in the input process and delaying the receipt of notifications by CLS participants.*

*So far, several hypotheses*** have been advanced to explain the "flash crash", and others have been assessed as being less valuable:*

- *among those that can probably be discarded are: human error ("fat finger"), unusual trades in the Procter & Gamble stock before the event, E-Mini S&P 500 futures triggering the movements (as the futures market is a "natural" support for price discovery in the cash market), hacker or terrorist attack;*
- *possible fruitful avenues of investigation are: lead-lag structures between stock index products (ETFs, E-mini S&P 5000 futures) on the one hand and selling waves of individual stocks on the other; liquidity mismatch exacerbated by a) electronic market makers and the use of automated stop-loss market orders, b) disparate trading conventions across exchanges leading to different trading speeds; use of "stub-quotes" (i.e. "two side quotes" which meet technical requirements, but feature prices which are too low or high to be possibly executed); chain reaction triggered by the use of stop-loss and limit orders for both equity and futures markets; role of ETFs, which experienced a comparatively high number of "broken trades" which indicate a loss in value of 60% or more (broken trades of ETFs represent about 70% of all broken trades of that day).*

The event of 6 May 2010 has shown a clear need for a thorough understanding of how sudden demands for liquidity are transmitted across various financial instruments (securities, options, futures, etc.) and different financial markets, as well as for the appropriate data which are indispensable for reaching such an understanding, as well as for monitoring financial markets in real time.

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* CFTC-SEC, "*Preliminary findings regarding the market events of May, 6 2010",* 18 May 2010.
** ECB, *Monthly Bulletin*, June 2010.
*** M. Shapiro, "*Testimony concerning the severe market disruption on May 6, 2010 before the Subcommittee on capital markets, insurance and government sponsored enterprises of the U.S. House of Representatives' Committee on Financial Services"*, 11 May 2010.

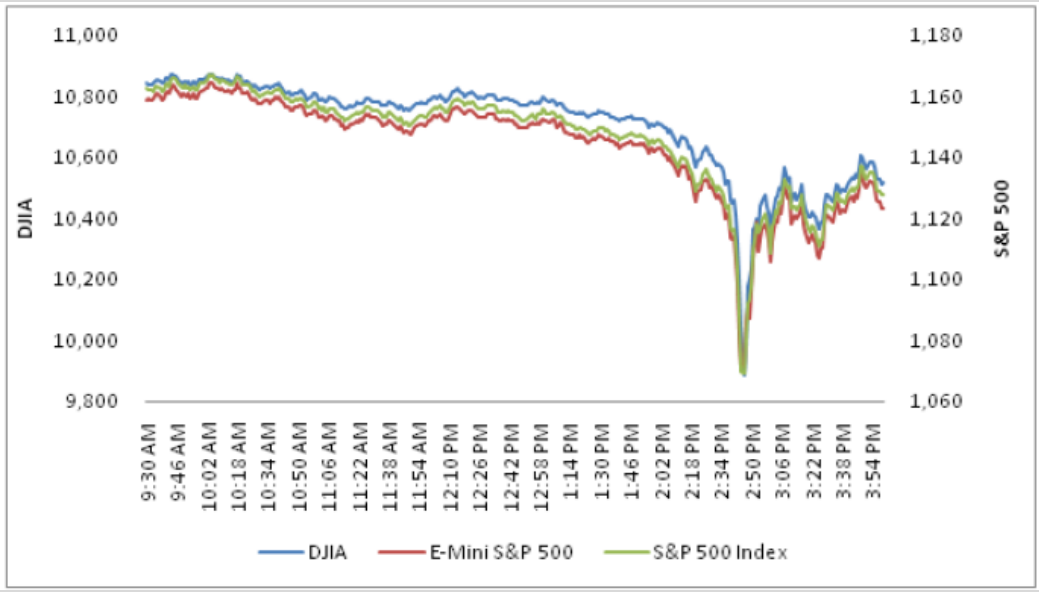


Figure 3: Equity indexes and index futures on 6 May 2010; *Source: Bloomberg.*

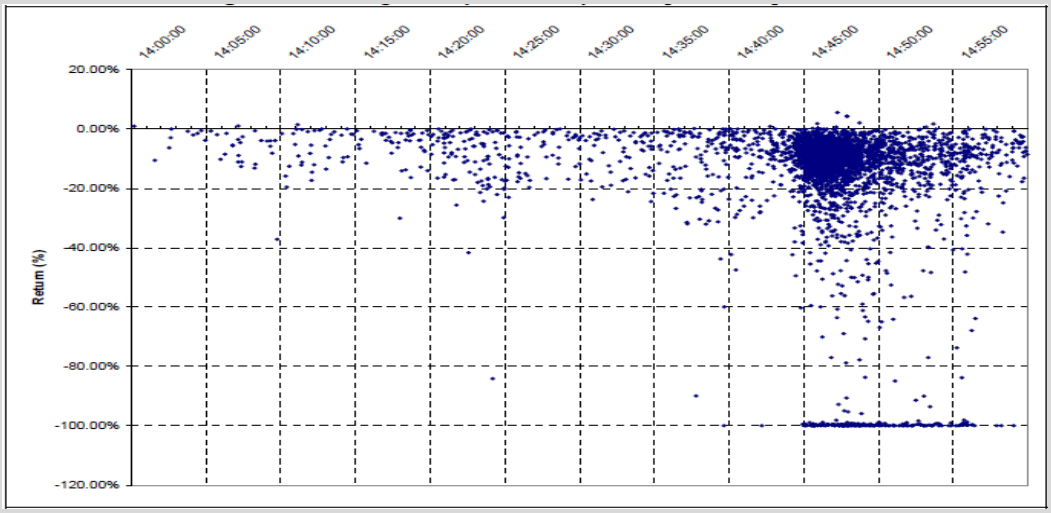


Figure 4: Timing of stocks' daily lows, 6 May 2010; *Source: CFTC-SEC, Preliminary findings report*

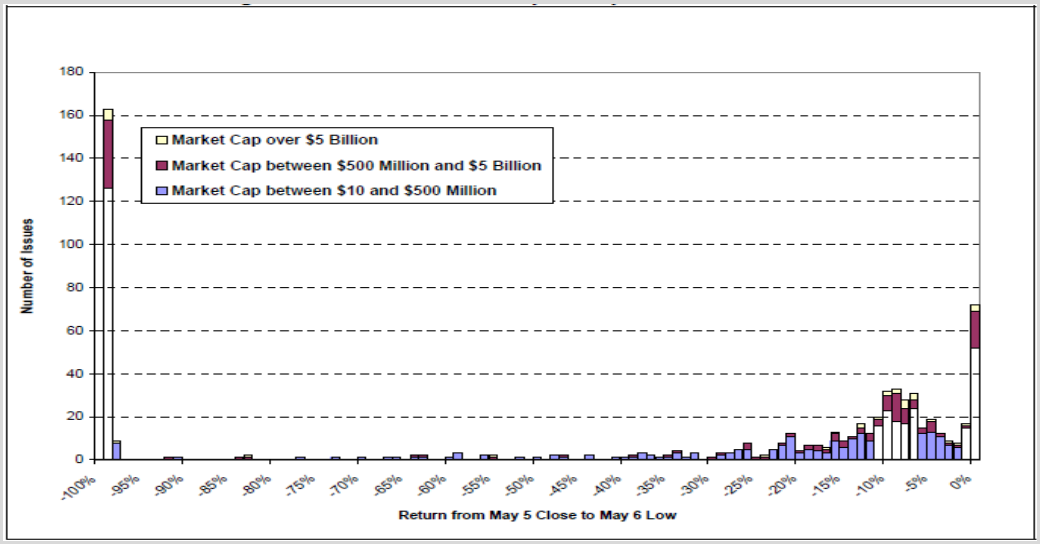


Figure 5: Distribution of ETFs' daily lows, 6 May 2010; *Source: CFTC-SEC, Preliminary findings report*

2. **A Value-at-Risk perspective leaving out the 2% worst possible cases shows the possibility of a -32% decline in the DJ EuroStoxx 50 at a 3-months horizon, which is well above the historical average and represents a substantial backdrop with respect to the improvement since March 2009; skews indicate an unusually high risk of a downward correction perceived by option market participants, both for the Eurostoxx 50 and the S&P 500; EuroStoxx 50 dividend futures indicate low growth expectations over the next eight years.**

A Value-at-Risk (VaR) model indicates the loss which should not be exceeded over a short-term target horizon for a given level of prudence (e.g. for the best 98 cases out of 100, which signifies that there are 2% of cases which would produce a worse outcome).

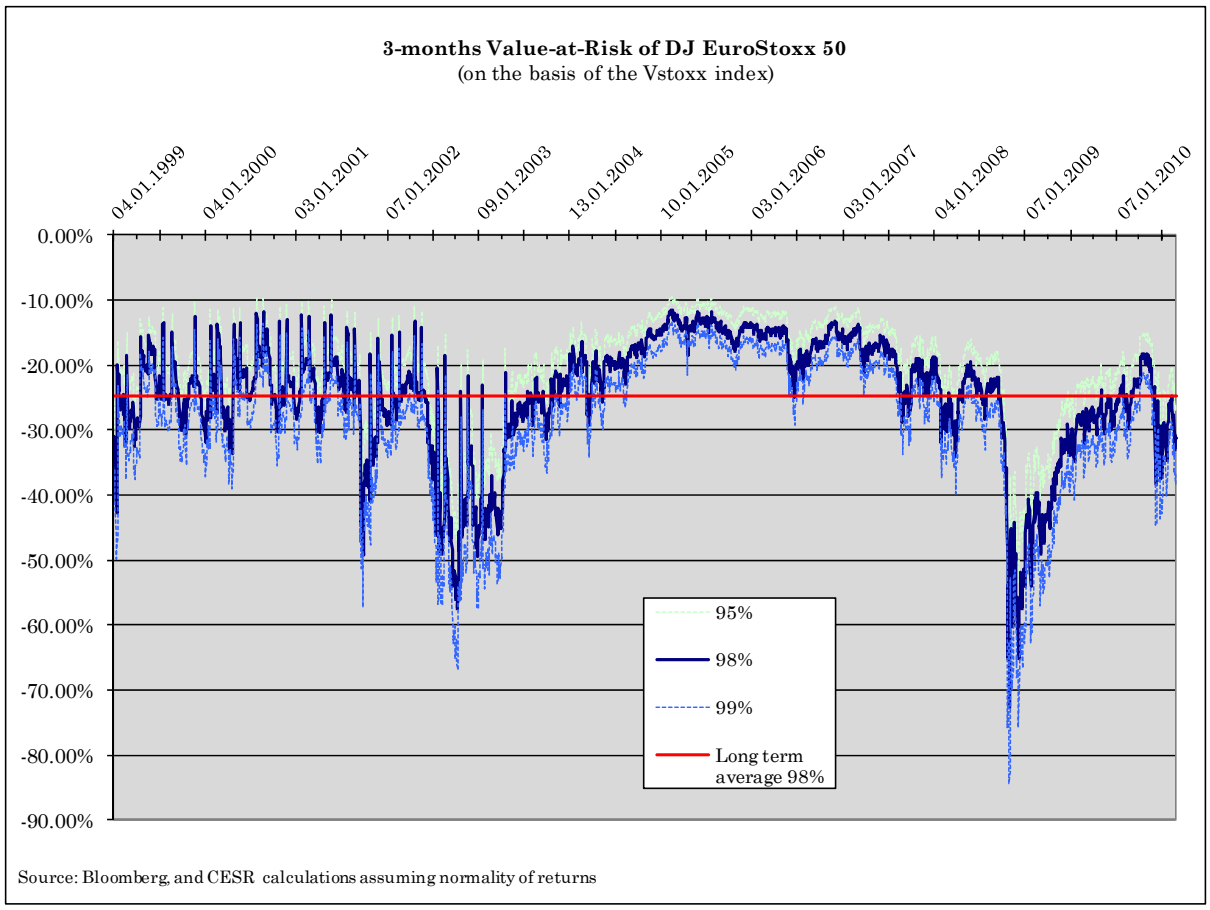


Figure 6 (data until 2 July 2010)

A VaR measure for market risk, obtained on the basis of implied volatilities, indicates that, at a horizon of 3 months (i.e. until the beginning of June 2010), a prudent attitude - using a 98% level - would currently consider the possibility of negative changes of up to about -32% for the DJ EuroStoxx 50 (figure 6). This measure has significantly worsened since mid-April 2010.

On 20 May 2010, the skew of stock indexes (see box 2) increased significantly above the levels seen during the Lehman Brothers collapse. After that collapse, the skew declined sharply over the first quarter of 2009, where investors were largely disinvested in equities, and therefore stopped buying downside protection. Thereafter, it started to increase continuously, as market participants started again to hedge their equity positions.

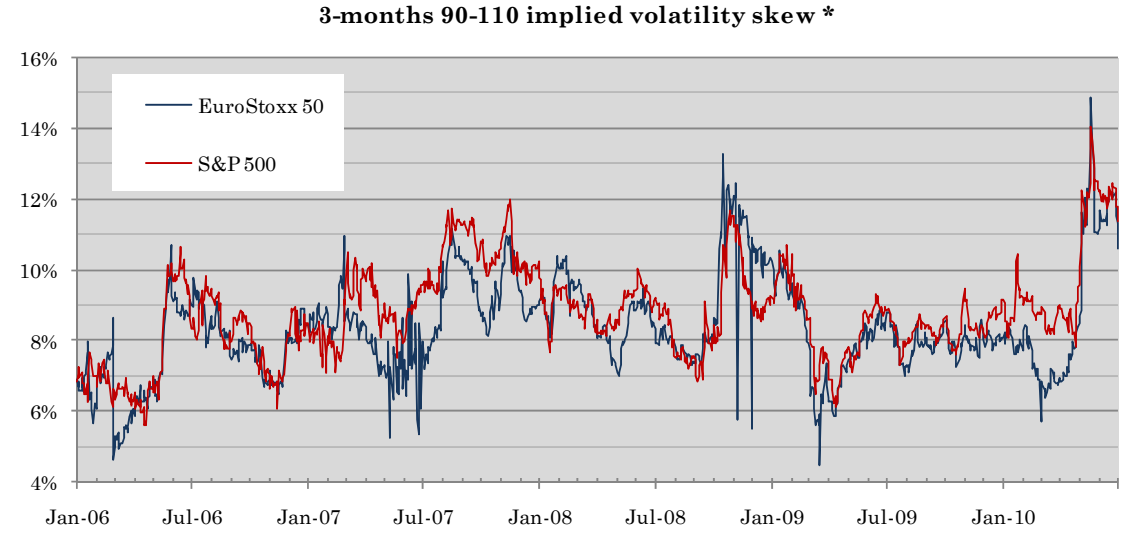
Box 2: The "skew" - an indicator of asymmetric expectations about the evolution of future stock prices

The risk of a further deterioration in securities markets cannot be excluded in the period ahead as the main sources of vulnerabilities have not receded. Such downside risk may be captured by indicators of asymmetric distribution of market participants' expectations, like the implied volatility skew in option markets.

The "skew" (or skewness) is an indicator of asymmetric expectations about the evolution of future stock prices. It can be calculated as the difference between two implied volatility quotes (as options are quoted either in terms of option prices or implied volatilities). Figure 7 displays the difference between the 3-months implied volatility of a 90% strike put and the 3-months implied volatility of a 110% strike call.

After the collapse of Lehman Brothers, the demand for protection against risk of a large downward evolution of the major stock indices pushed skew indicators up; that is the cost of an option to protect against a large decline in the underlying stock indices was more expensive than the cost of an option to protect against a large increase of the same magnitude. A skew generally takes time to revert back to its pre-event level, and even in a recovery phase an imbalance tends to persist toward excess demand for downside protection: the skew indicator therefore displays a positive value over a lasting period.

Approximately from January 2010 on, the skews of the EuroStoxx 50 and the S&P 500 evolved differently, indicating a higher downside risk for the S&P 500. This gap has been closed again by mid-April. For the recent period, the skews pointed to an unusually high risk of a downward correction perceived by option market participants, both for the Eurostoxx 50 and the S&P 500 (figure 7).



Source: Bloomberg, CESR calculations;
*The skew indicator is calculated as the difference between the implied volatility of an out-of-the- money put (90% strike) and the implied volatility of an out-of-the money call (110% strike).

Figure 7 (data until 2 July 2010)

For the Eurostoxx 50 index, there are listed options and futures on the dividends paid out/ committed by its constituents, and, as a result, market-implied proxies for earnings trends (and, arguably, economic growth) are available. For Eurostoxx 50 companies, most of the index dividends are paid/ committed early in the year (figure 8), so that they actually represent a large part of the earnings of the previous year. At the end of 2009, Eurostoxx 50 dividend payments

were equivalent to about 115 index points, a significant decline after the record of almost 160 points in 2008, over 80% of which were paid out just before the current systemic financial crisis fully set in. That level of end-2009 represents the impaired earnings power of 2008. For the year 2010, dividend payments are expected to be at 111.1 on current pricing, and about 85 points of these have already been paid out/ committed. Next year, the market is forecasting dividend payments of 96.8 points, which represents in terms of yields a slight increase in earnings with respect to the previous year.

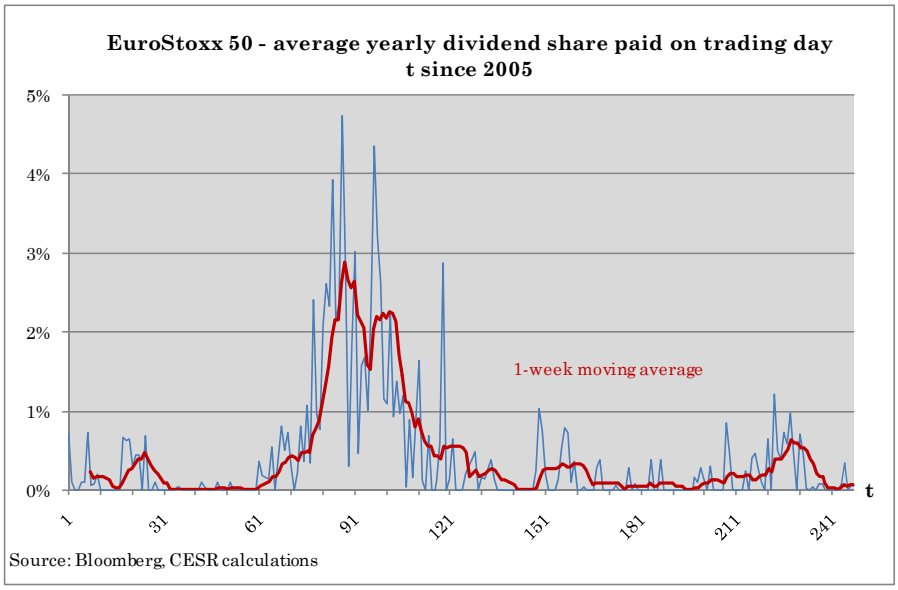


Figure 8 (data until 24 June 2010)

Going forward, the EuroStoxx 50 index dividend futures market indicates that the dividend yield are expected to decline with the bottom occurring in 2013, and, as a result, the low point of earnings of Eurostoxx 50 companies is likely to be reached in about two years from now (figure 9). Dividend yields are not expected to exceed the levels of 2010/2011 or to fall below the levels of 2007 for the foreseeable future, which can be considered equivalent to zero or low earnings growth over that time span. This assessment based on future market prices invites to assess strong upward movements in the EuroStoxx 50 index with due scepticism.

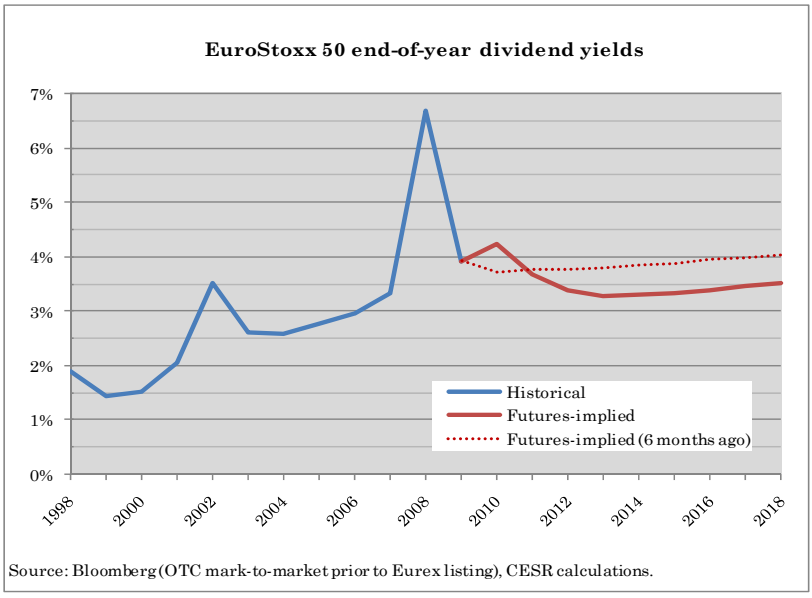


Figure 9 (data until 24 June 2010)

3. **Risk perception in the sovereign debt market is still high despite the initiative of the European Financial Stabilisation Mechanism; Further analysis needs to be conducted to assess whether there has been market manipulation in relation to the European Sovereign CDS markets and whether CDS spread speculation could impose a destabilizing risk for the refinancing position of sovereigns. The low percentage of the net notional amount of outstanding CDS in relation to debt for countries with a more fragile fiscal position indicates that the latter is rather not the case. The scarce information supervisors have on OTC markets prevents, however, more secure conclusions.**

Since the beginning of the year, sovereign bond issuance in Europe has been strong, as governments strive to finance their budgetary needs. Spreads, in contrast, have risen sharply in some European countries reflecting their significantly increased risk of default (Figure 10). In parallel, most credit ratings of sovereigns have been reduced so as to reflect the changes in the risk profiles (see Table 1). Concerns about the growth outlook in Europe and public spending have been underpinning the new outlook of sovereign debt. However, as mentioned above, a lower perception of risk has been observed since the end of June after announcements of tough fiscal adjustments and commitments to carry out and disclose stress tests in a significant number of financial institutions.

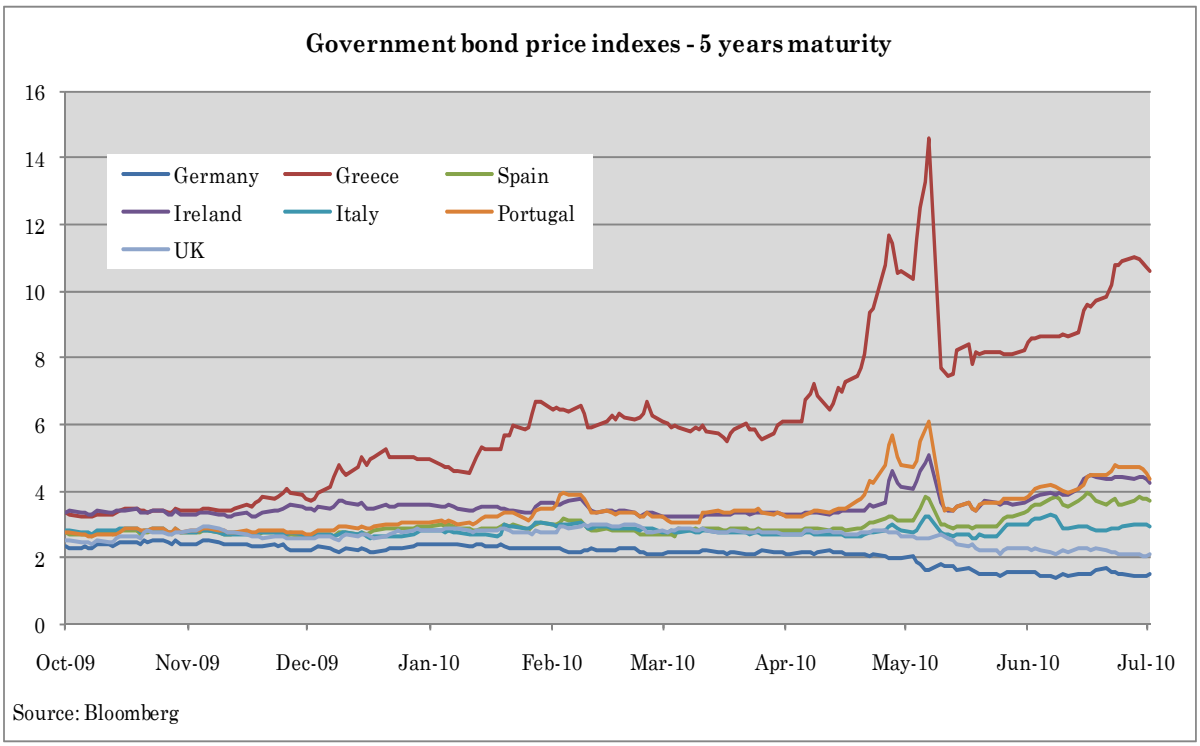


Figure 10 (data until 2 July 2010)

	Moody's	S&P	Fitch		Moody's	S&P	Fitch
Austria	Aaa	AAA	AAA	**Latvia**	Baa3	BB	BB+
Belgium	Aa1	AA+	AA+	**Lithuania**	Baa1	BBB	BBB
Bulgaria	Baa3	BBB	BBB-	**Luxembourg**	Aaa	AAA	AAA
Cyprus	Aa3	A+	AA-	**Malta**	A1	A	A+
Czech Republic	A1	A	A+	**Netherlands**	Aaa	AAA	AAA
Denmark	Aaa	AAA	AAA	**Norway**	Aaa	AAA	AAA
Estonia	A1	A	A	**Poland**	A2	A-	A-
Finland	Aaa	AAA	AAA	**Portugal**	A1	A-	AA-
France	Aaa	AAA	AAA	**Romania**	Baa3	BB+	BB+
Germany	Aaa	AAA	AAA	**Slovakia**	A1	A+	A+
Greece	Ba1	BB+	BBB-	**Slovenia**	Aa2	AA	AA
Hungary	Baa1	BBB-	BBB	**Spain**	Aaa	AA	AA+
Iceland	Baa3	BBB-	BB+	**Sweden**	Aaa	AAA	AAA
Ireland	Aa2	AA	AA-	**United Kingdom**	Aaa	AAA	AAA
Italy	Aa2	A+	AA-	*Source: Bloomberg July 23, 2010)*			

Table 1: Sovereign ratings for CESR Members

Like sovereign bond spreads, sovereign CDS spreads have also widened significantly since the last quarter of 2009. Tensions around Greek public debt spurred the rise of all sovereign CDS spreads in the Euro zone and Europe in general, in particular those of Greece, Portugal, Ireland and Spain (figure 14). The sovereign CDS spread index for Western Europe (SovX WE) was at 164bps on 9 May 2010, but at 46bps only at the end of September 2009. Financials have also seen their CDS spreads rise significantly and very much in line with those of European sovereigns since the beginning of the year, while non financial corporate have maintained spreads more or less constant over this period (figure 11).

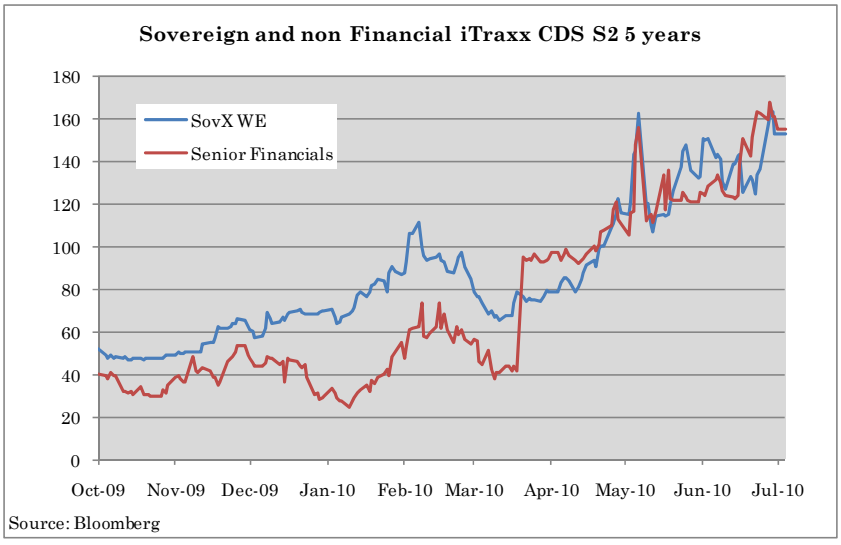


Figure 11 (data until 5 July 2010)

Recent CDS spread widening covered all Euro area countries, including Germany and France (to 48 and 81bp for 10-year maturities on 5 July 2010). In theory, bond yields and CDS prices should move more or less in tandem as they generally reflect the same risk factor. However, in times of tensions, a decoupling of spreads can be sometimes observed. This reflects the fact that the (bilaterally agreed) credit event of OTC contracts is often quite different from the underlying default. Furthermore, decoupling can be due to changes in CDS demand and supply (or the shortage of it) and arbitrage opportunities.

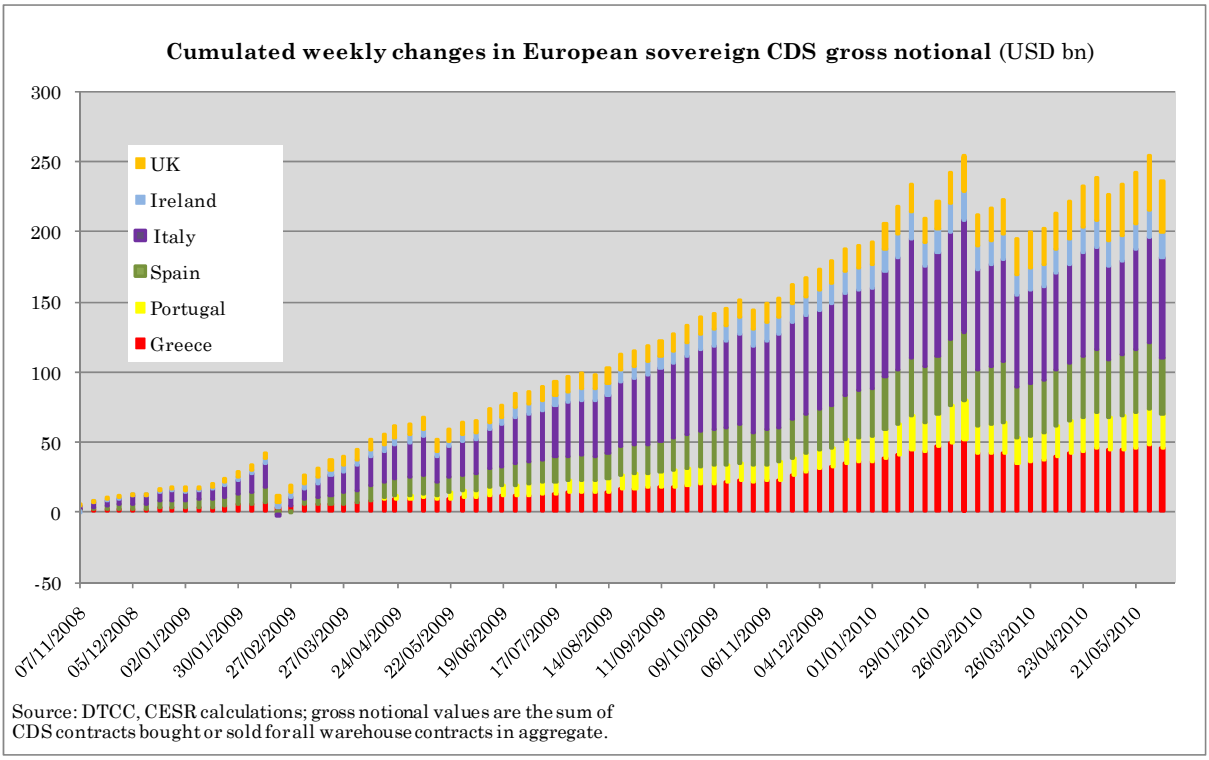


Figure 12a (data until 28 May 2010)

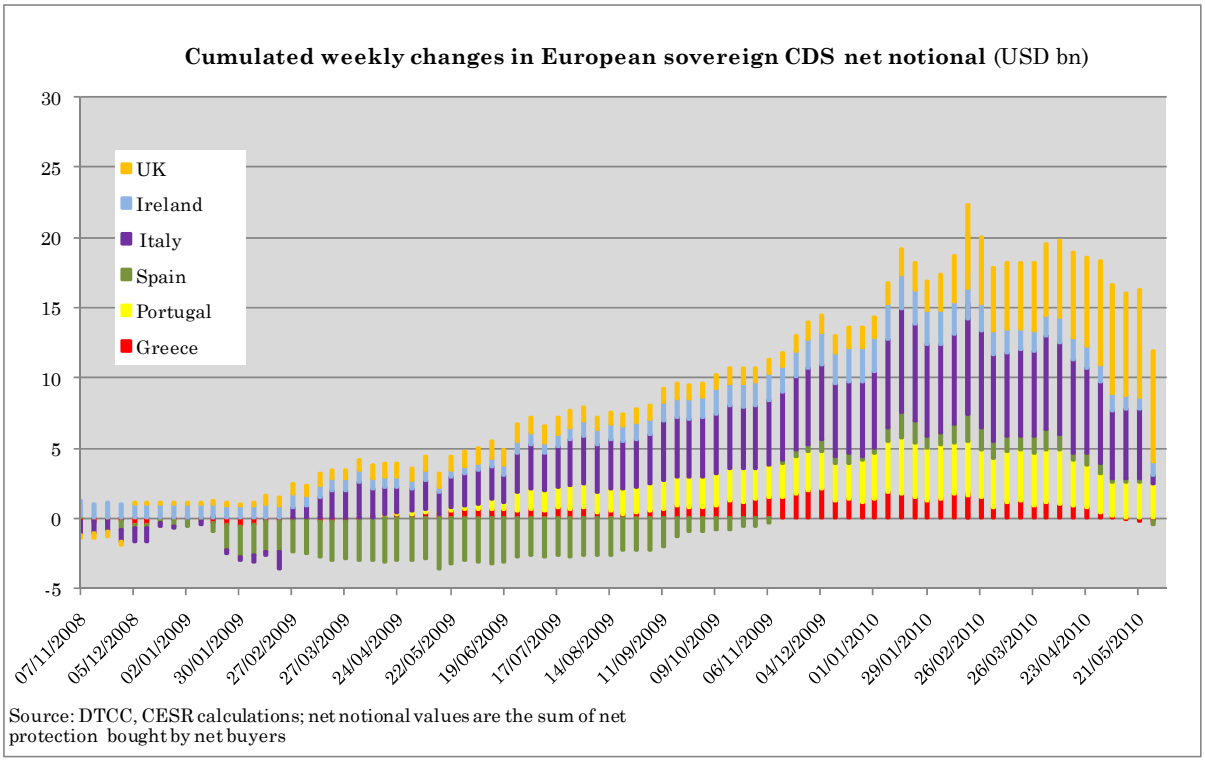


Figure 12b (data until 28 May 2010)

The activity in worldwide financial and sovereign Credit Default Swaps (CDS) markets has witnessed a contrasted evolution since November 2009: while the cumulated weekly gross notional amount of financial CDSs started to decline from that time, that of sovereign CDSs has been on a bullish trend almost since the time series is available (Figure 13).

According to DTCC data, the rising activity in the worldwide sovereign CDS markets since January 2009 originated from Europe for at least one third. In particular, the gross notional

amount of CDS bought and sold concerned more the Italian and Greek government debt and to a lesser extent the Spanish and Portuguese ones (Figures 12a). The net protection bought by investors seeking to hedge their underlying assets against or speculate on the basis of a possible change in credit risk or a possible credit event is assessed by the net notional value (Figure 12b). Because contracts are not always terminated but simply netted off by trading in opposite direction (previous sellers of CDS protection are subsequently buying CDS to reduce their exposition and early speculators are closing their positions and realizing gains), this indicator shows that the transfer of sovereign risk effectively reallocated is about 10 times less than gross notional figures. In particular, the net notional value bought concerning Greece debt was limited in comparison to the one concerning the debt of other countries with fragile fiscal positions like Italy, Portugal, UK, and Spain. Moreover, the net notional amount of outstanding CDS represents only a small proportion of the outstanding government debt (~4% for Portugal, ~3% for Ireland, less than 2% for Spain and Greece, and less than 1% for Italy).[3] This means that, in case of a credit event, losses from CDS contracts would be significantly smaller than losses from Greek government bonds holdings[4].

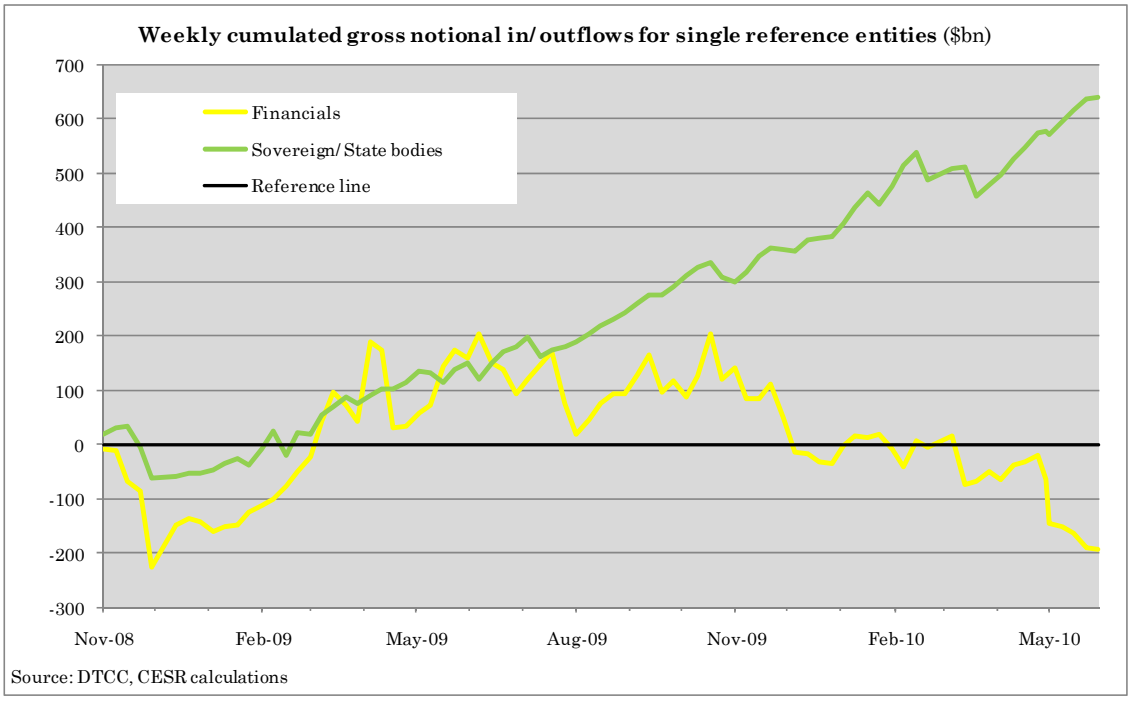


Figure 13 (data until 4 June 2010)

Sovereign risk as mirrored in CDS spreads started to increase from November 2009 in the EU, reflecting worries about the difficult fiscal situation in Greece and later on in Portugal and Spain. No significant change took place in UK and Ireland (Figure 14)[5] – though for the latter country, CDS spreads started to increase significantly from April on.

[3] Jacob Gyntelberg and Peter Hoerdahl, "Overview: sovereign risk jolts markets", *BIS Quarterly Review*, March 2010, p. 1-12.

[4] There is research which suggests that there is no significant empirical relationship between the amounts of credit default swaps held on sovereign issuers and their borrowing costs (see D. Duffie's testimony at the U.S. House of Representatives' Subcommittee on capital markets, insurance and GSEs on 29 April 2010).

[5] The measures adopted by the Irish government in last December's Budget aimed at capping the General Government deficit at 11.6% of GDP in 2010. The rather flat evolution of Irish CDS spread tends to show that market participants were reassured by such measures.

Box 3: Holding both creditor rights and protection – the empty creditor problem in credit default swaps

In relation to CDS contracts, it is sometimes claimed that risks arise from the mere fact that investors are holding protection against a default of an issuer as they become indifferent to insolvency or even gain more from the bankruptcy than from the survival of the issuer. In more general terms, the hedging of credit risk by stakeholders of distressed entities would significantly alter their behaviour towards these entities. In the case of equity ownership, the protection might give rise to "empty voters", whereby the derivatives decouple the voting rights from the exposure to profits or losses from shares, i.e. the economic ownership. In the case of corporate or sovereign debt, a similar reasoning leads to "empty creditors", whereby voting and other non-economic rights are decoupled from credit risk.*

There is also a claim that, in this latter case, the underlying incentive structure may give rise to systemic risk: not only might creditors have less interest in renegotiating debt (and, for instance, be unlikely to approve an out-of-court restructuring), or be less focused on the quality of the debtors, but market liquidity will be also more dispersed and make it therefore more difficult to address systemic liquidity risk. On this basis, one may ask whether it is true that there are less (out-of court) restructurings amongst issuers for which single–CDS exist as the claim about less renegotiating debt implies, and whether there is evidence that creditors not only hedge, but speculate by over-protecting against their distressed debtor issuers.

*Concerning restructuring, a creditor hedged by the means of CDS typically has a choice between restructuring with or without bankruptcy (whereby restructuring without bankruptcy does not constitute a credit event triggering a CDS). A decision between these two options typically involves a range of considerations and the empty creditor argument is only one aspect of these (for instance, restructuring without bankruptcy generally allows for a higher recovery rate and avoids substantial administrative costs; bankruptcy, on the other hand, avoids a creditor run on the assets as well as free riding by dissenting creditors). Nevertheless, it is argued that CDS protection might lead to restructuring with bankruptcy even in a situation where restructuring out-of-court is more efficient. A first analysis of data about the frequency of defaults and out-of-court restructurings seems, however, not to reveal a difference between the period before and after the introduction of CDS markets in the sense of the empty creditor hypothesis**.*

*Also, the argument that "over-protection" generates incentives to push an issuer into default is somewhat at odds with the way the CDS market actually works. Indeed, it is market practice that protection buyers pay a significant up-front payment. On this basis, it is argued that only exceptionally well-informed market participant would be able to clearly benefit from "over-protection" – keeping in mind that insider trading and market manipulation are illegal and that there is always a risk that there will be no default, in which case losses would be significant**.*

*In order to fully appreciate the effect of CDS protection on creditor behaviour, all the positive effects of the protection contract need to be taken into account besides possible negative effects. One aspect which is sometimes overlooked are the positive commitment effects of CDS contracts which might partially or entirely off-set any negative effects. Indeed, if the debtor has limited liability, the CDS contract strengthens the position of the creditor in debt renegotiations***. This mechanism seems particularly relevant as long as there is not too much "over-protection". It also has policy implications as any policy which targets the negative effects by eliminating the CDS contract in certain circumstances would also eliminate the positive effects.*

---

* Hu and Black (2008): 'Debt, equity, and hybrid decoupling: governance and systemic risk implications", *European Financial Management*, 14, September, p. 663-709.
**Mengle (2009): "The Empty Creditor Hypothesis", *ISDA Research Notes*, Number 3.
*** Bolton and Oehmke (2010): "Credit default swaps and the empty creditor problem", Columbia University working paper.

Rising CDS spreads may correspond to an increase in protection demand by investors to hedge their underlying positions or to speculative bets on a further deterioration of credit spreads. Market participants in sovereign CDS markets may not only trade to insure against a "default"[6], but also on widening or narrowing spreads. In this latter case, their trades are based on believes about the future evolution of the issuer default risk which might increase or decrease: in this case, sovereign CDS are not a default trade, but a spread trade.

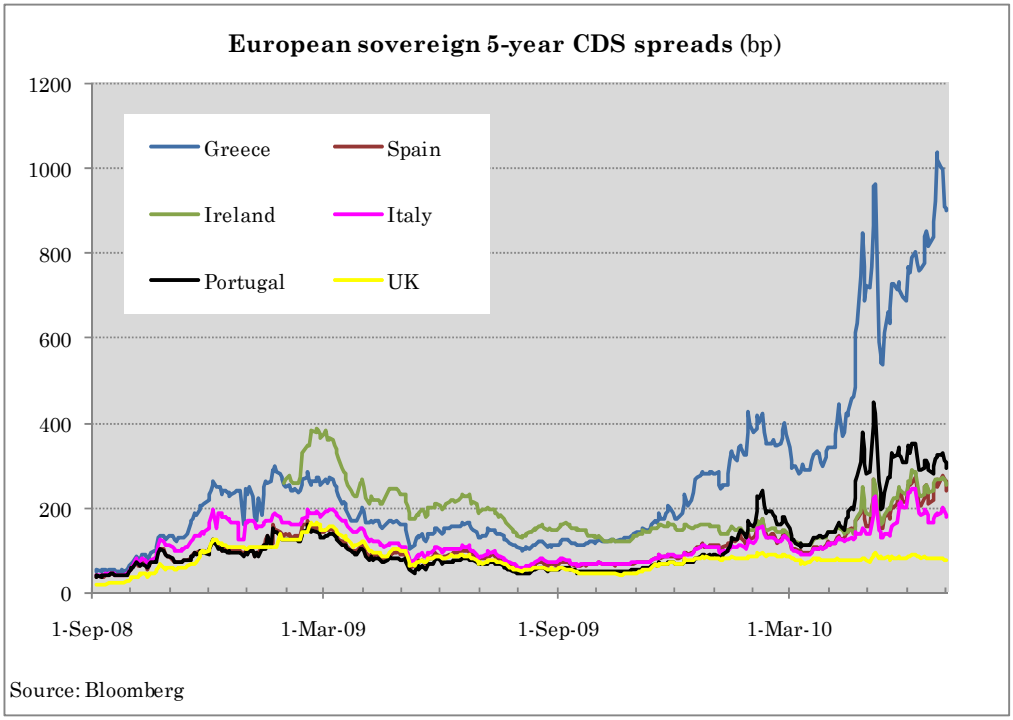


Figure 14 (data until 2 July 2010)

Looking ahead, despite the ongoing efforts by the Greek government to cut the budget deficit and put Greece on a sustainable fiscal path, it could well be that some market participants, including hedge funds and large investment banks, further test the determination of the Greek government towards an ongoing rigorous fiscal policy and the commitment of the EU to support Greece, would such support be required. Indeed, the Greek CDS curve inverted in mid-January[7], which is an unusual situation indicating that the market is seeing a higher risk that the country will experience a credit event in the short-term, than in the long-term[8]. It is possible to construct examples whereby CDS spreads reflect speculative behavior rather than fundamentals, and to show that speculative strategies can be destabilising in the sense that they lead to negative effects for financial markets, like prices not reflecting fundamentals or an increase in volatility (this would correspond to the bad equilibrium when there are multiple equilibria)[9]. In practice, at least so far, it has not been possible to make a clear case of destabilising speculation or market

[6] A "default" is a very peculiar event in the case of sovereigns as there is no international bankruptcy court so that they cannot "disappear". The "credit event" in these cases typically is one of the following: obligation acceleration, failure to pay, repudiation/moratorium, or a debt restructuring (see e.g. Barclays Capital: "Sovereign CDS trading", 11 Feb. 2010).
[7] Since then, the CDS term structure has inverted for several other European countries (Portugal, Ireland, Spain). A full appreciation of these inversions need, however, take account of the liquidity situation in these markets.
[8] There is evidence which indicates that the term structure of CDS spreads reveal information about the arrival rate of credit events, as well as the loss rate given credit events (see Pan, J, and K. Singleton (2008): "Default and recovery implicit in the term structure of sovereign CDS spreads", *Journal of Finance*, 63(5), 2345-2348). For an account of the recent events see the *BIS Quarterly Review*, June 2010.
[9] See also the recent exchange of views between R. Portes (2010): "Ban Naked CDS", *Euro Intelligence*, March 18, and D. Duffie (2010): "Is There a Case for Banning Short Speculation in Sovereign Bond Markets?", Banque de France Seminar contribution, 8 July.

manipulation concerning the developments in markets related to Greek sovereign bonds.Further analysis should be conducted as the potential risk of destabilising effects cannot be neglected.,

Figures 15-19 represent US-denominated, 5-year maturity sovereign CDS and government debt spreads for some European countries. As expected, the differences between the respective government debt spreads of those countries and the Bund spread on the one hand, and the difference between the respective sovereign CDS spreads and the German CDS spread on the other hand, are positively correlated for the period considered.

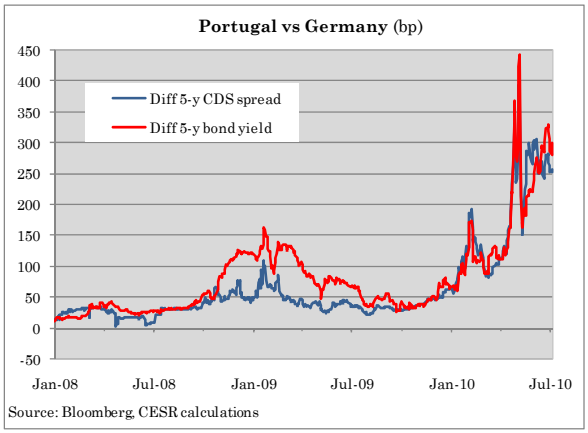


Figure 15 (data until 7 July 2010)

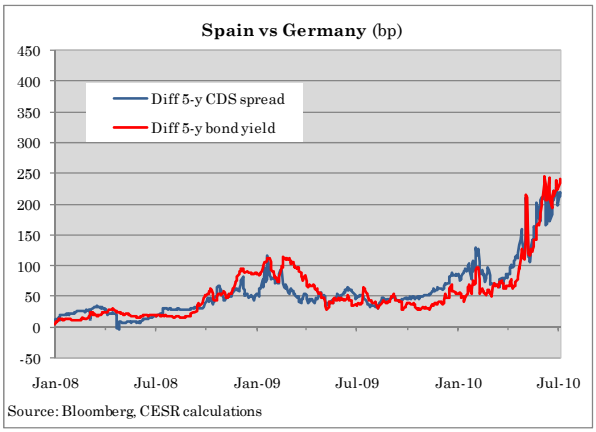


Figure 16 (data until 7 July 2010)

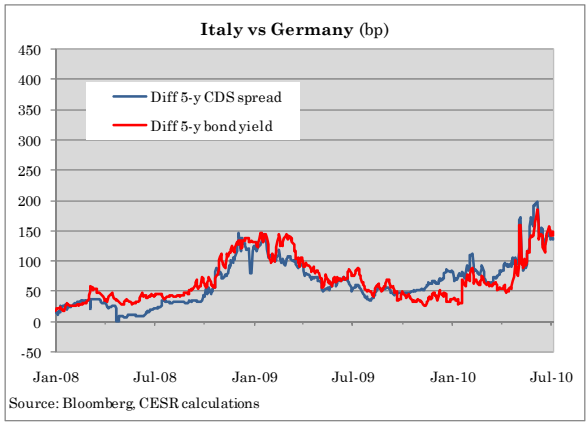


Figure 17 (data until 7 July 2010)

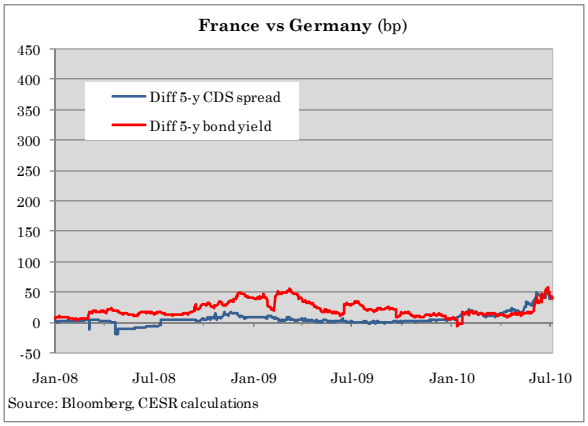


Figure 18 (data until 7 July 2010)

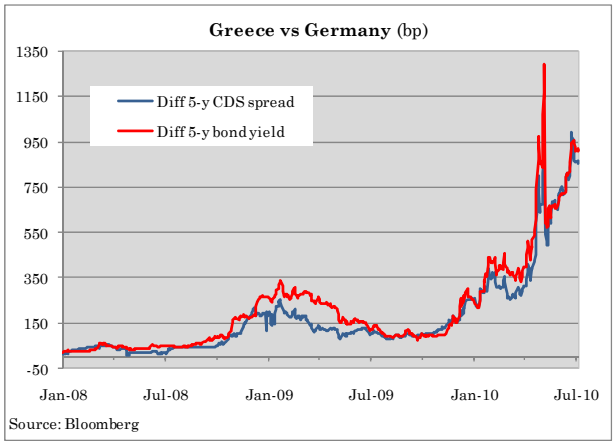


Figure 19 (data until 7 July 2010)

Both measures reflect country risk. Assuming market efficiency, market arbitrage would lead to a high positive relationship between the government paper market and the respective sovereign CDS market. It is noted that holding a risk-free asset in combination with a sell position on a

CDS contract would roughly correspond to having a long exposure to the CDS underlying security. This means, at least in theory, that the CDS premium should equal the difference between the risk-free return and the underlying security risk premium. . The figures above suggest that they are indeed quite correlated in most of the cases, particularly for the current year. It is not clear however whether there is a causal link between CDS spreads and bond yield spreads and what its direction would be.

An analysis of the dependence between the first differences of the two variables (see table 2) indicates

- higher correlation levels for countries which show higher risk levels such as Greece, Portugal and Spain over the whole period;
- lower correlation levels for all countries considered in 2009 in comparison to the whole period levels, as well as for Q4 2009;
- higher correlation levels for all countries considered in Q1 2010 in comparison to the whole period levels.

Correlation coefficients of the I(1)* spread and yield differences for selected European countries

Differences with respect to Germany	Portugal	Greece	Spain	Italy	France
Q2 2006 – Q1 2010**	0.33	0.51	0.31	0.18	0.05
Q1 2009 – Q4 2009	-0.01	0.45	0.21	0.18	0.05
Q4 2009	0.17	0.70	0.26	0.09	-0.01
Q1 2010	0.64	0.72	0.56	0.43	0.25

Source: Bloomberg (CESR computations); data from the beginning to the end of the quarters; * the series are integrated of order 1, I(1), i.e. first differences are used to take account of non stationary. ** Considering the period Q1 2008 – Q1 2010 during which the sovereign CDS markets were better developed gives results which are very close to the ones presented.

Table 2

From these results, it emerges that the relationship between the sovereign CDS and government debt markets has changed over time, and that increased visibility of the CDS market in recent turbulence periods appears to have led to a faster price adjustment between both markets.

Box 4: The European Financial Stabilisation Mechanism (EFSM)

On 10 May 2010, following the escalation of tensions in Euro sovereign debt markets, European finance ministers unveiled a European Financial Stabilisation Mechanism (EFSM). The mechanism is based on Article 122.2 of the Lisbon Treaty, and an intergovernmental agreement of Euro area Members States. Article 122.2 allows for mutual support in the event a member country is "threatened with severe difficulties caused by exceptional occurrences beyond its control". The activation of the mechanism is subject to strong conditionality, in the context of a joint EU/IMF support, and will be on terms and conditions similar to the IMF. The mechanism, which will operate without prejudice to the existing facility providing medium term financial assistance for non euro area Member States' balance of payments, has two components:

- *the first element of the stabilisation plan allows the European Commission (EC) to borrow up to EUR60bn from either capital markets or financial institutions. These funds would provide support in the form of loans or credit lines to EMU countries under conditional terms set by the EC in liaison with the ECB. Technical and financial participation of the IMF remains possible;*
- *the second and larger component of the stabilization mechanism is a joint pledge to provide up to EUR440bn to Euro area Members in need over the next three years. Further IMF funds could be added, reaching potentially an additional 50%.*

On 7 June 2010, Euro area finance ministers agreed the terms through which the promised EUR 440bn will be provided to troubled countries within the monetary union. The European Financial Stabilization Fund (EFSF) will involve setting up a special purpose vehicle (SPV) that is guaranteed on a pro rata basis by participating Member States in a coordinated manner and will expire after three years, respecting their national constitutional requirements. The IMF will participate in financing arrangements and is expected to provide at least half as much as the EU contribution through its usual facilities in line with the recent European programs. The funds will be lent to countries under strict conditionality laid out by the vehicle's board of directors. Assistance to ailing states will be provided upon the presentation of a satisfactory restructuring program. These funds will be "over-guaranteed" (120%) by each Member as a provision for the possible inability of some member states to back the vehicle. This should grant the SPV the best possible rating and its bonds will also be eligible for ECB refinancing operations. As soon as 9/10 of the shareholders have approvals from their parliaments to guarantee the SPV's debt, it will be in a position to issue securities. The interest rate charged for loans is still unknown, as are the exact circumstances under which/ purposes for which it will be used.*

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* See, for instance, W. Buiter (2010): "Sovereign Liquidity Facility, Transfer Europe or Bank Recapitalisation Fund?", *Citigroup Economics*, 23 June.

Contagion effects of strains in the Greek government bond and CDS markets on other market segments cannot be excluded (see also the presentation in the 3L3 cross-sector risk report) and could act, for instance, through the following channels:

- First, strains could propagate further to other sovereign bond and CDS markets through a higher risk premium associated with countries displaying characteristics that could be seen by the market as replicating those of Greece. With possibly rising European government bond yields, all the bond and credit markets may then experience a correction, increasing thereby funding costs for firms.

- Contagion may also spread to the European equity and bond markets to the extent that the institutional investors (in particular insurers, pension funds and banks) in Europe display significant exposures to governments bonds, but also through rising funding costs. There is therefore a risk that rising sovereign risk translates into a further deterioration of asset prices.

In order to support its members, Euro area governments agreed to the creation of a European Financial Stabilisation Mechanism (Box 4) so as to guarantee debt repayment and in parallel support their currency.

4. The recent all-time high in the use of the ECB deposit facility (over EUR €380bn) points to the continued presence of a "managed systemic financial crisis".

The current stabilisation of financial institutions and markets still depends on massive public support measures, which may have reached their limits.

One indicator of the fragility of the financial sector - particularly the banking part - and the potential risks attached to an early exit is the ECB's deposit facility. The ECB publishes daily data reflecting the very heavy use banks still make of overnight deposits with the Eurosystem (the so-called deposit facility). These deposits are currently remunerated at a nominal rate of 0.25% (against 3.25% on 11 November 2008, and 0.32% currently offered in the money market). If a bank which is using the deposit facility has marginal costs of funding above 0.25%, its profitability will be affected. Before November 2008, the total amount of deposits rarely exceeded EUR 13 bn, and was on average considerably lower.

The ECB has focused on getting credit flowing through the banking system again as two thirds of the economy in Europe are financed by banks. The record lending by the ECB of EUR 442 bn through its first 12-month Long Term Refinancing Operation (12-m LTRO) at its key rate on 25 June 2009, the covered bond purchase program (CBPP) in July, where the ECB injected EUR 39.5bn of the EUR 60bn planned until June 2010, and the EUR47 bn bought within one month through the Securities Markets Programme (SMP, which intervenes in the euro area public and private debt securities markets with no scheduled end-date)[10], are reflected in the evolution of the deposit facility whose current use is at levels well above those seen after the Lehman default (figure 20).

With the use of the SMP, the ECB has, after some hesitation, followed similar steps taken by the U.S. Federal Reserve, the Bank of England and the Bank of Japan. In order to sterilise the impact of the SMP, specific operations will be conducted to re-absorb the liquidity injected. An expanded 3-m LTRO did coincide with the end, on 1 July 2010, of the 12-m LTRO, and, as a result, the effect on the LIBOR market has been attenuated (EUR 132bn, i.e. less than 1/3 of the 12-m LTRO was rolled-over into the 3-m operation at a rate of 1 %, when market rates were at less than 0.5%; the following 6-day allotment of €111.2bn allocated to 78 banks has complemented that measure, pointing towards some excess liquidity). The EFSF (see box 4), once fully operational, could arguably put an end to the SMP.

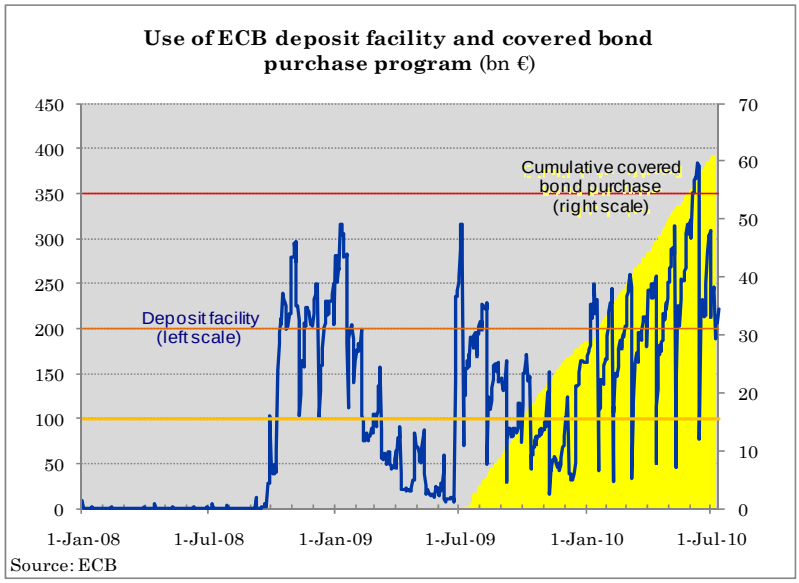

Figure 20 (data until 12 July 2010)

[10] ECB interventions in the markets through the SMP were less intense since mid June, basically reflecting an improvement in sovereign risk.

5. The hedge fund industry is consolidating and hedge funds have taken measures to attract new capital: revised redemption policies are now more favourable to investors, and hedge fund products are in certain cases distributed through exchange traded products (ETPs), mutual funds and UCITS. This latter movement may lead to "retailisation", including a possible miss-match between expected and realised returns from the investors' perspective.

The ongoing recovery in the hedge fund industry appears unevenly distributed across fund types, with an average performance of about 22.7% posted since January 2009 by the whole industry[11], masking significant return differences ranging from 0.1% for commodity trade advisors global to 38% for emerging markets[12] (figure 21).

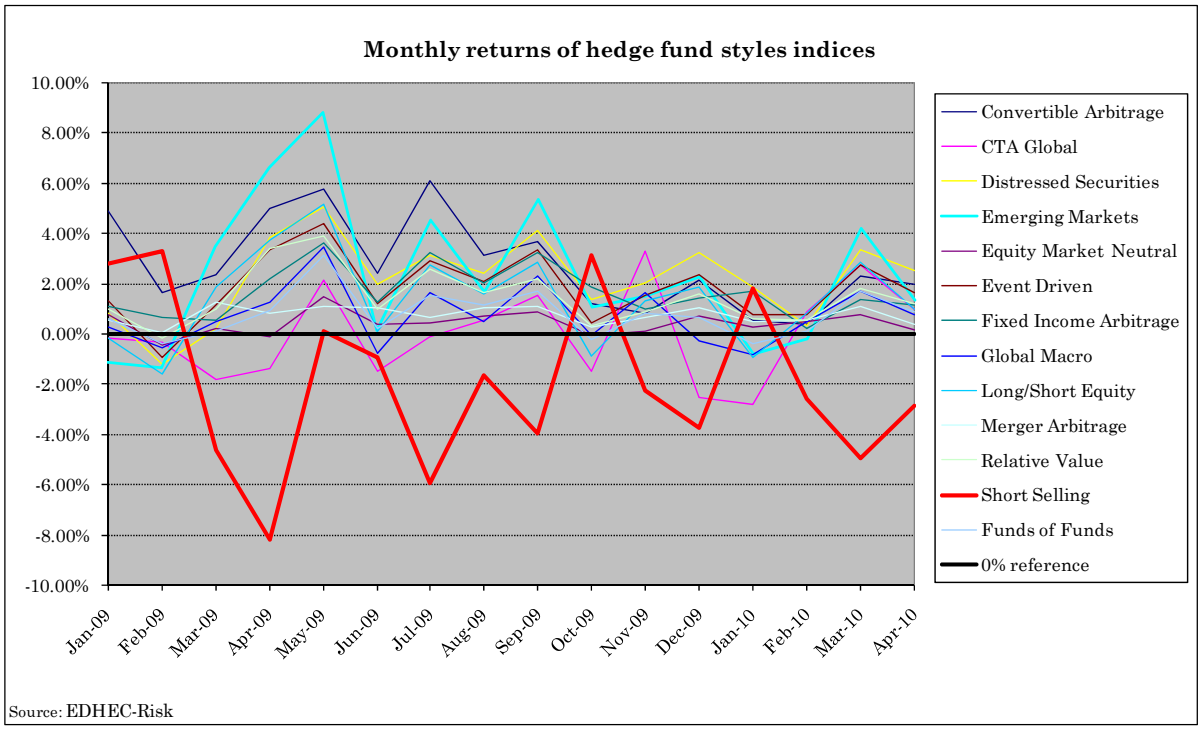

Figure 21

Furthermore, while massive redemptions affected nearly all hedge funds in the first half of 2009, thereafter, not all hedge fund strategies managed to attract new inflows. Redemption for 2009 amounted to USD 74bn[13]. The gradual overall improvement started to vanish in the last quarter of 2009 and currently the asset flows are declining again and very low (figure 22).

[11] Excluding the "short selling" and "funds of funds" categories.
[12] The figure for the performance of the whole industry is an average of the EDHEC style funds performances which are generated by the first component of a factor analysis of the main available hedge fund style indexes worldwide.
[13] See, Credit Suisse Tremont, "Hedge Funds hit a high Note, 2009 Industry review, January 2010.

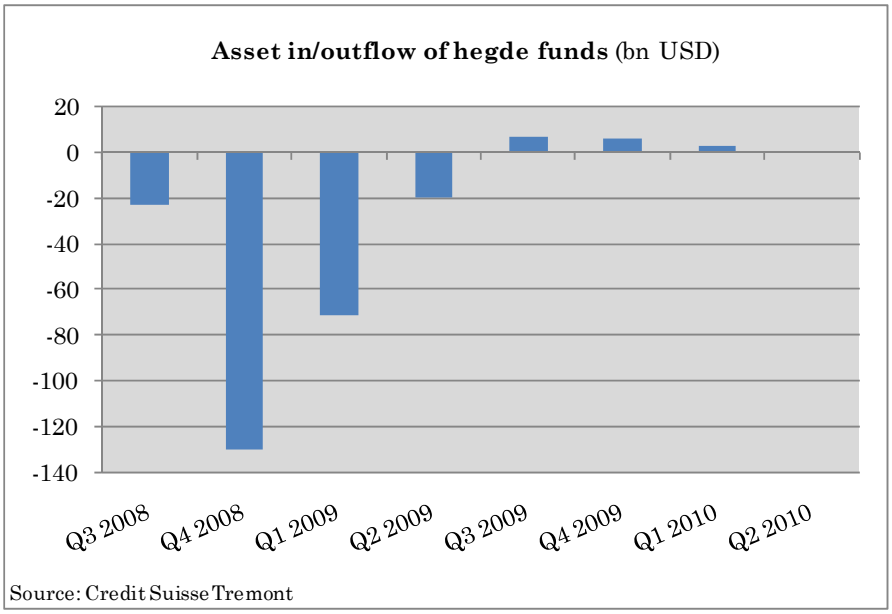

Figure 22

After a period of improvement, significant outflows occurred very recently despite binding restrictions on redemptions, which are reflected in the substantial average discount to hedge fund's net asset value per share in the secondary market that investors are willing to accept to get liquidity from their investment. After the discount dropped by a historically high level of -20%-points in May, it bounced back to the still high values reached previously (Figure 23).

Despite significant improvement in the impaired assets, USD 72bn AUM continue to remain illiquid, that is 42% of the outstanding amount of impaired assets at the end of 2008 ($174bn). Impaired assets are assets for which the fund had either suspended redemptions, implemented gate provisions or allocated the assets to a side pocket. Some traditional investors, the high net worth and institutional investors, confronted with such liquidity issues, may therefore face less incentive to renew or increase their investment in the hedge fund industry in the period ahead.

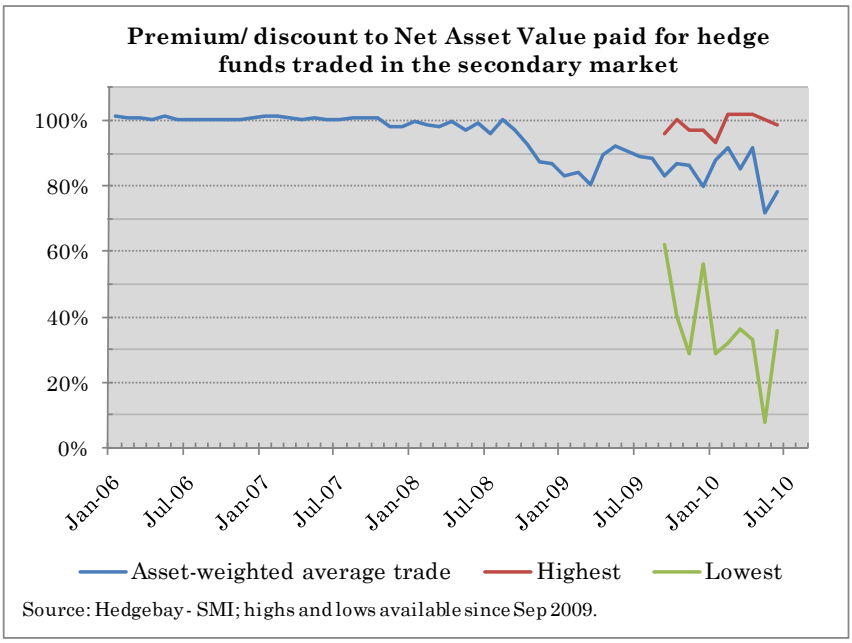

Figure 23 (monthly data until June 2010)

As a result, many funds, including some of the biggest of the industry have struggled to rebuild assets lost in the financial crisis and are looking for consolidation in order to diversify revenue

streams. Witness the acquisition in May 2010 by Man Group of GLG Partners which created the world's largest hedge fund management company, with more than USD 63bn in assets under management. This is so despite the fact that hedge funds have build a reputation as good primary lenders to corporate firms[14], particularly for those which may face difficulties when trying to borrow from banks or issue public debt.

In addition, a new trend in hedge funds' capital raising has emerged in 2009 as a response to the retreat of traditional investors. In order to diversify and extend their investor base, fund managers have begun exploring distribution opportunities through retail channels, via exchange traded products (see also box 6 and the section on ETPs in the part reporting on trends), mutual funds and UCITS (which are, however, highly regulated under EU harmonised legislation and subject to risk management, risk limitation and risk spreading rules). Furthermore, in certain countries, funds of hedge funds are launching funds of UCITS hedge funds to meet a robust investors' demand towards products that exhibit greater liquidity, less risk of gating or suspension and greater transparency.

Another tendency emphasises reduced lock-up periods in order to reassure investor that they may get their assets more quickly than in the recent past. As financing maturities have significantly declined and average leverage increased from 1.92 in December 2008 to 2.59 in January 2010[15], hedge funds may prove more vulnerable to any further deterioration in worldwide markets. The risk of forced selling and its associated destabilising impact on asset prices may well have increased, would financial markets deteriorate further.

With a rather flat performance since the beginning of 2010, such a scenario would then have the potential to further dent investors' confidence in the hedge fund class, and to trigger further redemptions (Figure 24).

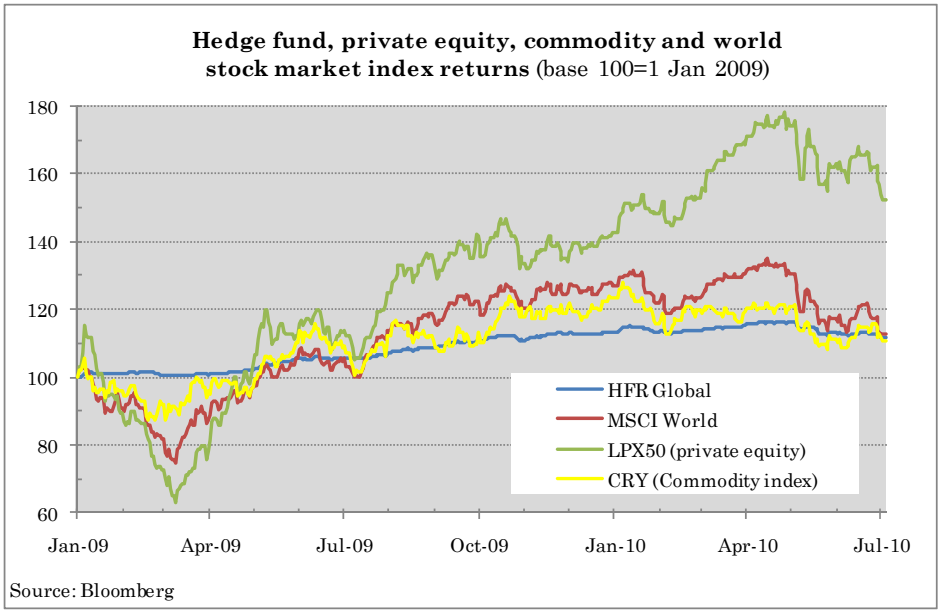

Figure 24 (data until 2 July 2010)

[14] V. Agarwal and C. Meneghetti (2010): "Hegde funds as primary lenders", working paper.
[15] See, Credit Suisse Prime Services, "Monthly Hedge Fund Industry Update", February 2010.

Box 5: Possible risks to retail investors in leveraged and inverse ETFS

Exchange Traded Funds (ETFs) provide retail investors with a cheap access to a wide range of often reasonably liquid products with a decent track record of indices. However, after studies have indicated that passively managed ETFs may underperform their benchmarks and encumber investors with greater risks than indexes, and that DAX futures contracts contribute an economically and statistically significant proportion to contemporaneous price quotes of ETFs and certificates even though the ETF prospectus and certificates claim to follow the stock index solely (and not the index futures contract), leveraged and inverse Exchange-Traded Funds (LETFs & IETFs) have been put on the spot. These investment vehicles have already attracted significant assets. Unlike traditional ETFs, leveraged and inverse Exchange-Traded Funds provide leveraged long or short exposure (typically 2x, 3x) to the daily return of various indexes, sectors, and asset classes. These funds are mainly used by professional short-term traders, but recently their popularity with retail investors has increased. The funds have, however, unintended characteristics not known from traditional ETFs. In recent research, Chang & Madhavan, and Avellaneda & Zhang** analysed the underlying dynamics of leveraged and inverse ETFs, their impact on market volatility and liquidity, unusual features of their product design, and questions of investor suitability. It is shown that*

- *the daily re-leveraging of these funds can exacerbate volatility towards the close, and*
- *the gross return of a leveraged or inverse ETF has an embedded path-dependent option that can, under certain conditions, lead to value destruction.*

In particular, leveraged and inverse ETFs are not suitable for buy-and-hold investors because the long-run returns can be significantly below that of the appropriately levered underlying index. This is particularly true for volatile indexes or periods of high volatility, and for inverse ETFs. Indeed, the more volatile the underlying is, the higher is the tracking error. In addition, there is a compounding effect coming from the difference between daily compounded interest rates and annually compounded interest rates (the LETFs and IETFS have a daily horizon). Other aspects which reinforce the unsuitability of these products for longer-term investors are their possible tax inefficiency and the cumulative effect on returns from the costs of daily re-balancing.

*There is a risk that some investors do not understand that leveraged and inverse ETFs will not always replicate the leveraged index return over periods longer than a day. Typically, the greater the holding period and the higher the daily volatility, the greater the deviation between the LETF's return and a statically levered position in the same index***. Among possible options for regulators are better information, restrictions on margins, and tighter requirements on investor eligibility****.*

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* Rompotis,G., 2008: "Performance and trading characteristics of German passively managed ETFs", *International Research Journal of Finance and Economics*, 15, 210-223; Schmidhammer, Lobe, and Roeder (2009): "Intraday Pricing of ETFs and Certificates Replicating the German DAX Index", WP University of Regensburg.

** Cheng and Madhavan (2009): "The Dynamics of Leveraged and Inverse Exchange-Traded Funds", Barclays Global Investors; Avellaneda and Zhang (2009): "Path-dependence of LETF returns", NYU-Courant Institute of Mathematical Sciences.

*** On 25 March 2010, the U.S. SEC made an announcement stating that it was deferring the approval of new ETFs that use derivatives pending the completion of a review about the use of derivatives by mutual funds, exchange-traded funds (ETFs) and other investment companies in order to examine whether and what additional protections are necessary for those funds. In a note from 11 June 2009, FINRA indicated that "inverse and leveraged ETFs that are reset daily typically are unsuitable for retail investors who plan to hold them for longer than one trading session, particularly in volatile markets" (Regulatory Notice 09-31).

****Besides ETFs, there are also other innovative structured products, most of the times traded OTC, which pose a risk of being poorly delivered to the retail investors. Examples are bonds or even mutual funds with interest rates which are a function of the evolution of stock indexes, commodity indexes, or stock prices with caps/floors.

6. Since 2009 Q4, deleveraging affects the corporate debt market in which debt roll-over does not seem to be an immediate risk; bond issuance now represents over 2/3 of total debt of European non-financials, compared to less of 2/3 last year.

In a change of strategy, corporate issuance in Europe has been decelerating since the last quarter of 2009, as companies try to deleverage so as to obtain a sounder level of indebtedness. In May, European non-financial corporates issued EUR 3.0 bn, compared with EUR 14.9 bn in April and EUR 41.6 bn a year ago[16].

When comparing the amount issued by the European investment grade corporates in 2009 and 2010 YTD to the total amounts of debt due to mature in 2009, 2010 and 2011, it appears that all sectors have issued more bonds in the last 18 months than are set to mature over 2009-11, suggesting that debt roll-over may not be an immediate risk.

The reduction in net debt levels may also mean that the heavy issuance was mostly done by precaution and because it was cheaper than banks' loans. As a consequence, the mix between bond and loan financing for European corporate has changed: bond issuance now represents about 70% of total debt of European non-financials, compared with 60% in last September (figure 25).

Improved corporate earnings have sustained considerable levels of free cash flow, i.e. around 19% in the first quarter of 2010. This may also be responsible for the lower need to issue, as companies can obtain a larger share of their funding internally. One risk, however, is that European banks, faced with liquidity issues, may fail to renew corporate credit lines and thus forcing new issuance. This may be more the case in the high yield sector. An additional risk, as with sovereigns, is the widening of spreads, which may impose a higher interest charge on companies. As to financials, they have also issued less than in 2009, with a cumulated EUR 107.2bn at the end of May vs. EUR 203.3bn one year earlier. According to the IMF and Crédit Agricole calculations[17], expected write-downs in the European financial sector are still around a sizeable USD 400bn, more than half of what has been written down already. Moreover, capital needs for a Tier 1 ratio of 10% are also still more than what has been already raised.

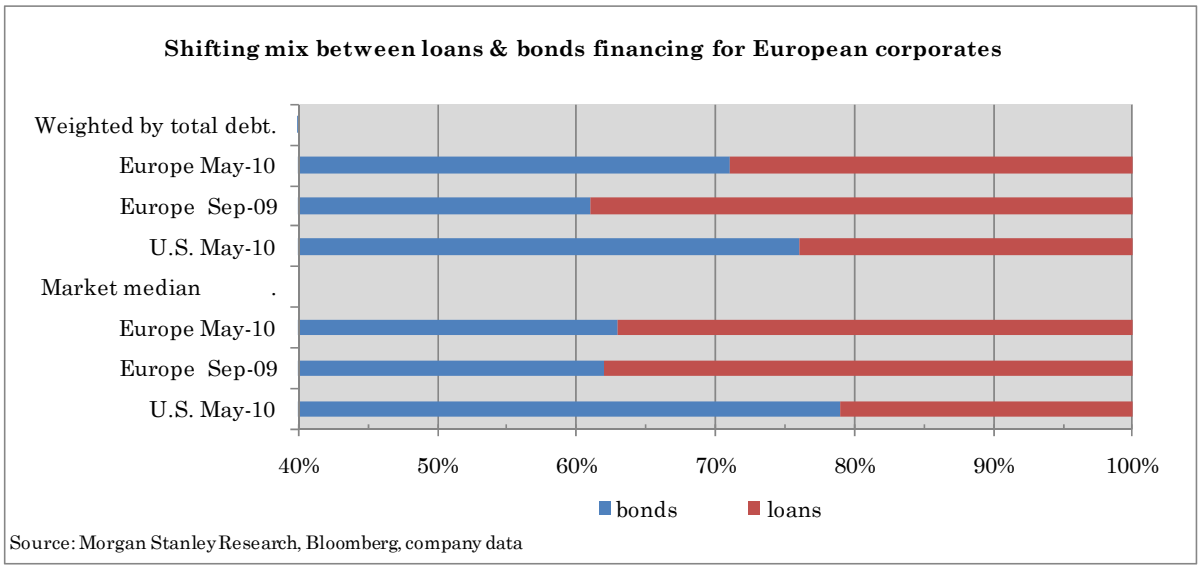

Figure 25

[16] Morgan Stanley: Credit Strategy Note, 4 June 2010.
[17] Crédit Agricole: Credit Research Note, 8 June 2010.

7. The respective role of demand and supply side factors in the current subdued securitisation market is unclear, and going forward, uncertainties exist as to whether at least some specific market segments could recover on their own or structural constraints hamper the revival of the market.

Similarly to global securitisation markets, the European securitisation and covered bond markets are still in a very slow recovery phase, with a somewhat increased, but limited issuance of over the first two quarters of 2010 (Figure 26). Of the slightly over USD 100bn of Asset Backed Securities (ABS) issued, more than half was still retained in the balance sheets of banks (figure 28)[18] - which is nevertheless a significant improvement over the 80% retained during the Q1 2010. The high level of retention reflect the reluctance of investors to take exposures to a structured market segment which is still perceived as being particularly risky, complex and opaque.

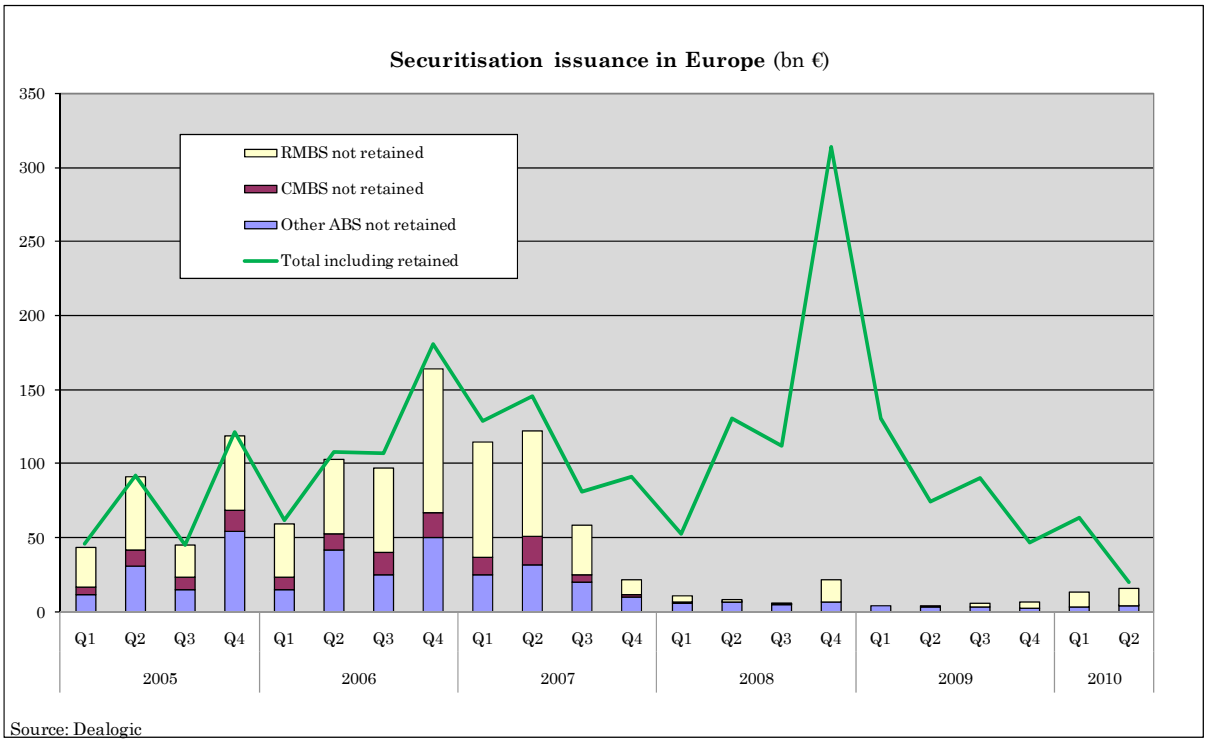

Figure 26

Strains in the European Commercial Mortgage Backed Securities (CMBS) did not recede with spreads remaining close to 700bp (Figure 27). In the Residential MBS segment, overall, a widespread improvement is notable with continuous spread compressions, except in the case of Greece, where the spread has started to peak from mid-January 2010. However, a considerable part of the RMBS issuance has been purchased by the public sector under support programmes or with a government guarantee. For instance, the ECB allows "own-used", i.e. retained, ABS as collateral in Eurosystem credit operations. From May on, tension appeared however with a more or less pronounced impact across all jurisdictions.

[18] JP Morgan, 2010, "European weekly datasheet", European ABS Research, 1 March.

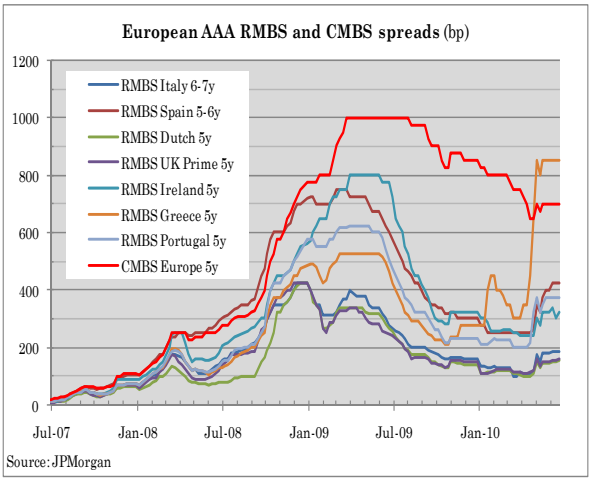

Figure 27 (data until 26 June 2010)

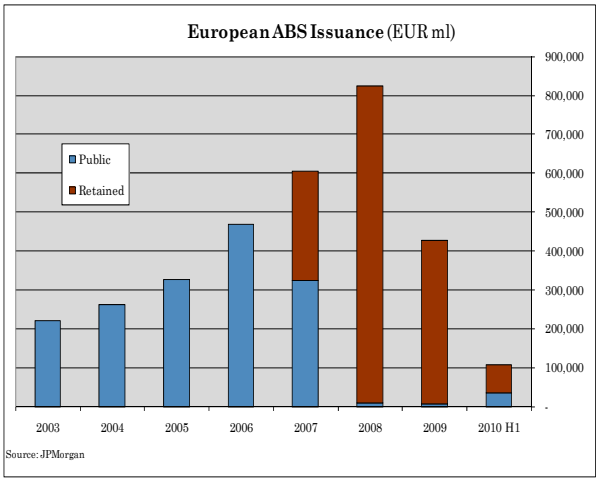

Figure 28 (data until 26 June 2010)

There is a debate about the respective role of demand and supply side factors in the current situation, and going forward, uncertainties exist as to whether at least some specific market segments could recover on their own or major structural constraints exist which stop the market short of a revival. Fundamental issues precluding a speedy recovery include, besides the continued uncertain economic environment, a reduced investor base, competitive sources of funding, and continued overhang of retentions[19]. There are also uncertainties about the net impact on securitisation activity of two important regulatory changes: the regulation of CRAs and the implementation of modified capital requirements for financial institutions (CRD IV).

The covered bond market has been facing a volatile evolution from mid-December 2009 onwards. Spreads have witnessed contrasting dynamics depending on the maturities considered; spreads with a maturity superior to 10 years have been on a rising trend, while bonds maturing within 1 to 3 years have significantly declined over the same period (Figure 29). The diverging developments have been put to an end in April with steep increases in spreads across the whole maturity spectrum, which, on a country basis, were particularly significant for Portugal, Ireland and Spain (figure 30).

Given the slow recovery of the securitisation markets in Europe, this funding source for European banks is not likely to dampen any funding liquidity risk in the period ahead.

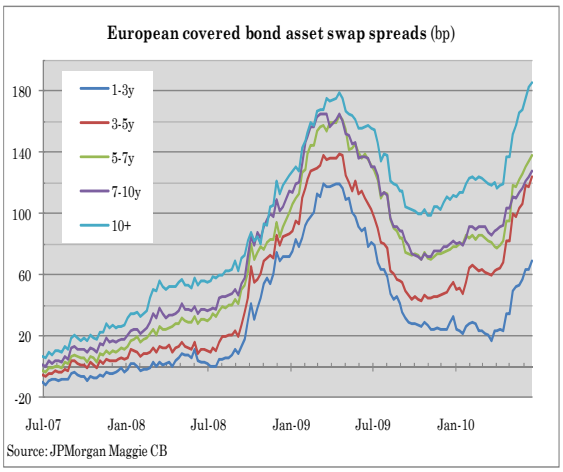

Figure 29 (data until 28 June 2010).

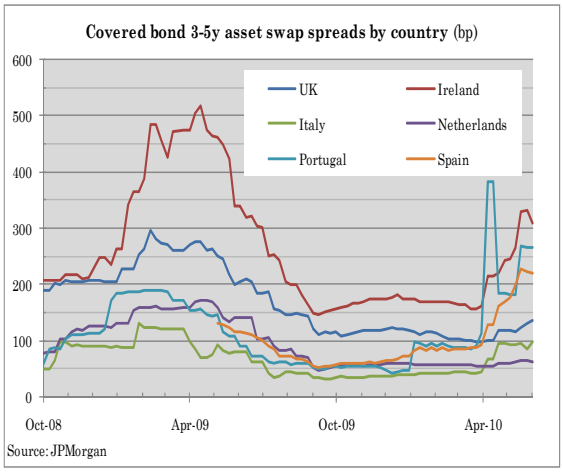

Figure 30 (data until 28 June 2010).

[19] AFME-ESF, Securitisation data report Q1:2010.

8. The impact of High Frequency Trading (HFT) on market structure is still not fully understood.

The use of high frequency trading (HFT) has become common in major financial markets in recent years, and the increase in HFT volume and market share has played a part in, and responded to, the evolution of market structure and trading patterns over the last two years or so, including in Europe. HFT firms have been increasingly active in the provision of liquidity to markets, and now provide liquidity that otherwise would not be available[20].

HFT is based on algorithms, which allow trading to take place automatically in response to, amongst other things, news and market data. Such automatic trading is based on rules about the timing and amount invested, and relies on reducing the latency (that is, the time delay) when entering an order or undertaking a trade.

For the U.S., it is estimated that about 42% of daily equity share volume in the last quarter of 2009 was related to high-speed, high frequency trading and that this proportion could reach 54% in the fourth quarter of 2010 (Figure 31)[21]. The rising adoption of HFT is driven by, amongst others things, an expansion of quantitative-based trading desks of hedge funds, global banks and broker-dealers as well as by the lowered barriers to entry[22].

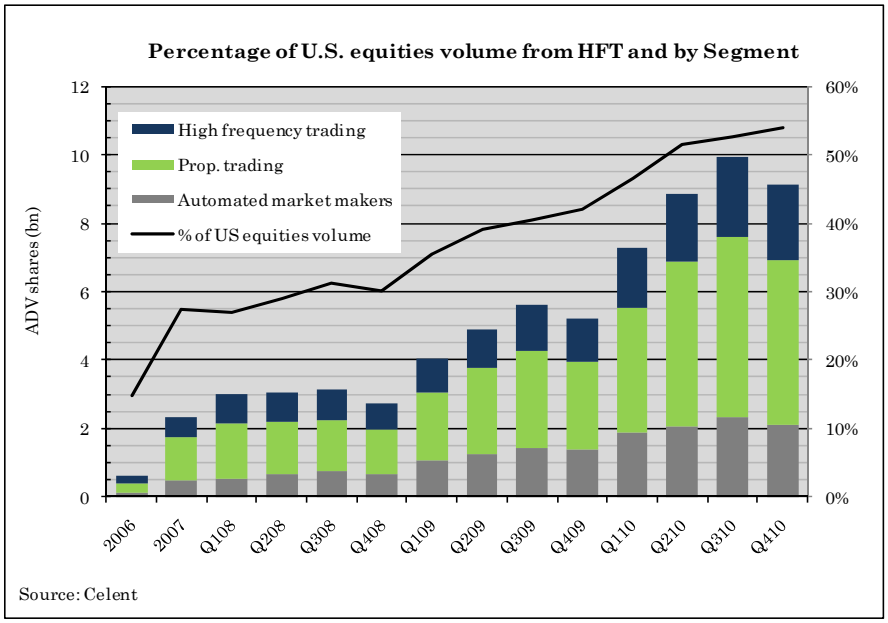

Figure 31

From a regulatory point of view, HFT may present risks to investors that still need to be properly understood and addressed as appropriate. In the U.S, the focus of the SEC is very much on possible manipulation, like spoofing[23], phantom quotes[24], flashing of orders[25], but also errors in

[20] During the stock market crash in 2008, high frequency firms continued to provide liquidity to markets, as anybody wanting to buy or sell was able to do it with relatively tight bid and ask spreads. This contrasts sharply with the 1987 equity crash, when it was not possible to reach market makers by phone.

[21] See Celent, *Demystifying and evaluating high frequency equities trading: fast forward or pause?*, 21 December 2009. Their estimates are based on assumptions for the current and future propensity for latency-sensitivity strategies to be adopted by hedge funds, proprietary trading firms and electronic market markers.

[22] Lower technology costs and rapidly increasing processing power have lowered barriers to entry into execution service provisioning and provided opportunities to new entrants to offer fast high-technology alternative multi-lateral facilities tuned to attract algorithmic trading flows.

[23] "Spoofing" refers to a situation where a person trading in the stock markets uses a displayed limit order to manipulate prices and thereby obtains an improper trading advantage.

[24] "Phantom quotes" are false quotes entered into the trading system for a few seconds before cancelling them in order to manipulate the market.

the construction of algorithms themselves that may cause severe disruptions in markets. Moreover, the overall impact of HFT on investors is yet unclear. On the one hand, it may, among other positive effects, add liquidity. On the other hand, it may also, for instance, increase market volatility, with possible negative effects on asset valuations. Its impact on trading costs is a matter of some debate. There is also a claim that, in the U.S markets, the perceived informational advantage of HF traders has given an incentive to other traders to move some trades into dark pools[26].

When studying the effects of HFT, it is important to keep in mind that not all analyses carried out on HFT in U.S. markets can be easily read across to the European context. For instance, the very concept of a 'dark pool' differs. For example, in the EU it is possible for HF traders to participate in 'dark pools' provided by multilateral trading facilities (MTFs) as MTF operators have a regulatory requirement to provide 'fair access' which does not exist in the US.

In Europe, considerable additional research is required to understand the growth of HFT and its role in the evolution of the markets. One key pre-condition for the analysis of HTF from a regulatory point of view is the availability and the access to proper data.

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[25] A "flash order" enables a member of a trading venue to see orders micro seconds before the quote is made public, potentially giving a trading advantage. As a result, investors having access only to public quotes may be harmed..
[26] See the previously quoted study by Celent.

9. Since 2009 Q1, there is a quasi-halt of private equity activity with a quarterly deal value below EUR 20 bn; investments and divestments have, however, increased; though the private equity industry seem to have bottomed out in 2009 H2, a rebound of the buy-out dominated PE activity is partly dependent on the capacity of the banking sector to provide the complementary financing.

In Europe, private equity (PE) activity remains subdued, and the sharp decline since Q3 2008 seems to confirm the boom-and-bust-cycle nature of the industry[27]. After buy-out funds globally drew down USD 100bn more than they distributed during 2007 and 2008[28], and some listed PE funds have lost more than 80% of their value, the current level of activity shows that the PE industry continues to be heavily influenced by the situation in financial markets - even though the willingness of investors to commit capital seems to have eased somewhat lately. In an industry dominated since 2002 by buy-outs rather than venture capital financing[29], there probably are three crucial obstacles to PE investment: banks' reluctance to fund investments (leveraged buyouts included), their general unwillingness to offload distressed assets off their books unless absolutely necessary, and a temptation by the PE industry to continue doing business on the same terms as before the crisis[30]. There is a sense, however, that the activity of the private equity industry has bottomed out in the second half of 2009[31].

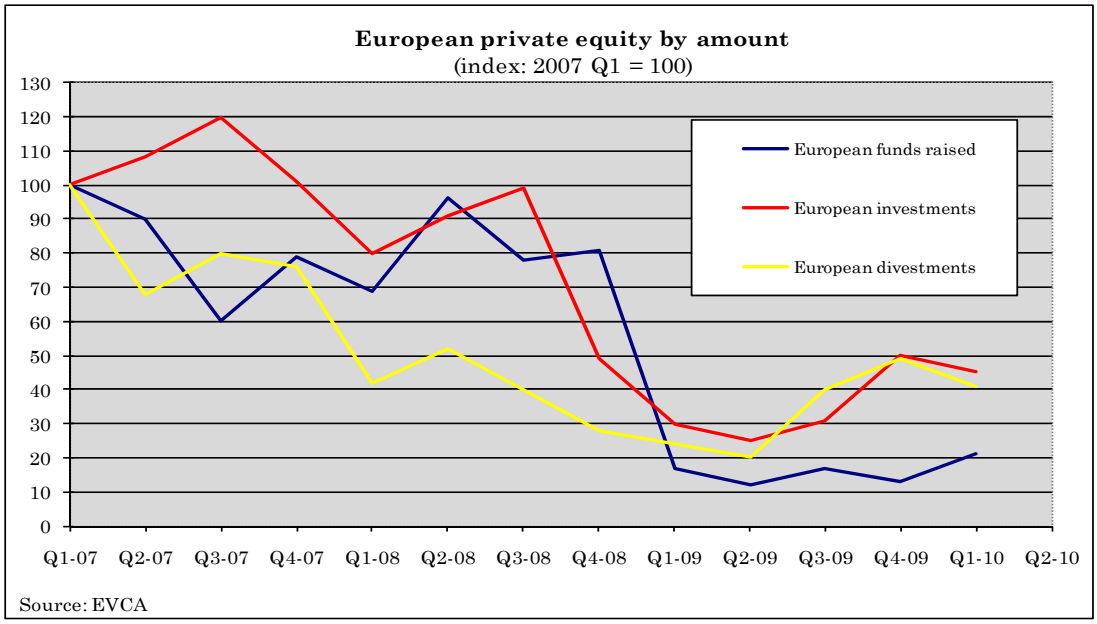


Figure 32

In Q1 2010, fundraising in Europe increased again while investment and divestment fall again back (see figure 32). This slight increase in fundraising, which is in line with the evolution in fund raising globally, is encouraging, but it represents only part of the buyout financing which is largely dominated by debt (e.g. LBO loans) and equity (mainly the leverage part increased

[27] Kaplan, Stroemberg (2009):"Leveraged buyouts and private equity", *Journal of Economic Perspectives*, 23(1), Winter, p. 121-146; as well as RREEF Research: "The outlook for private equity: second quarter 2009", July 2009.
[28] Preqin: *Private equity terms and conditions*, 1 June 2009.
[29] This structure clearly is reflected in the PE fund industry. About 2/3 of the approximately USD 1 trn of capital globally managed by private equity funds is in the hands of buyout funds, where leverage can multiply the investment size by three or four times base capital. These buyout funds were responsible for about 1/4 of all global M&A activity (see Metrick and Yasuda (2008): "The economics of private equity funds", mimeo, Yale School of Management, Wharton School).
[30] A recent article stresses that rewards in the PE industry are estimated to be too high even when performance is poor, some investors are likely to be unaware of a large part of the fee they pay, and there can be incentives to manage large funds rather than maximising returns (see Phalippou (2009): "Beware when venturing into private equity", *Journal of Economic Perspectives*, 23(1),Winter, p. 147–66).
[31] RREEF Research: "The outlook for private equity: third and fourth quarter 2009", November 2009.

substantially over the last decade or so, whereas the equity part declined). Growth capital investment experienced the steepest decline, followed by venture investment, and buyouts.

Overall, the low level of European - and global - PE fundraising that was characteristic of the year 2009 seems to continue to haunt the sector in 2010 (Figures 33). The number of companies invested in reached its lowest level since 2007 Q1. Global fund raising stood at USD 50bn in the first quarter 2010, which is barely higher than the amount of the previous quarter, which was the lowest since 2004, with Europe accounting for less than a third of it (USD 14.6bn). Currently, the private equity seems to be shunned for three main reasons:

- first, more than half of the roughly 220 companies that have defaulted on their debt in some form in 2009 were either once owned or still controlled by private equity firms, according to S&P;
- second, the industry has about $1trn of un-invested commitments, which makes new fund raising with investors more difficult. The relatively low volumes of deals that have been completed have often involved distressed sellers at substantial discounts to net asset value;
- third, the largest funds, such as LBO funds, are still facing a restrictive (and expensive in terms of spreads) lending environment.

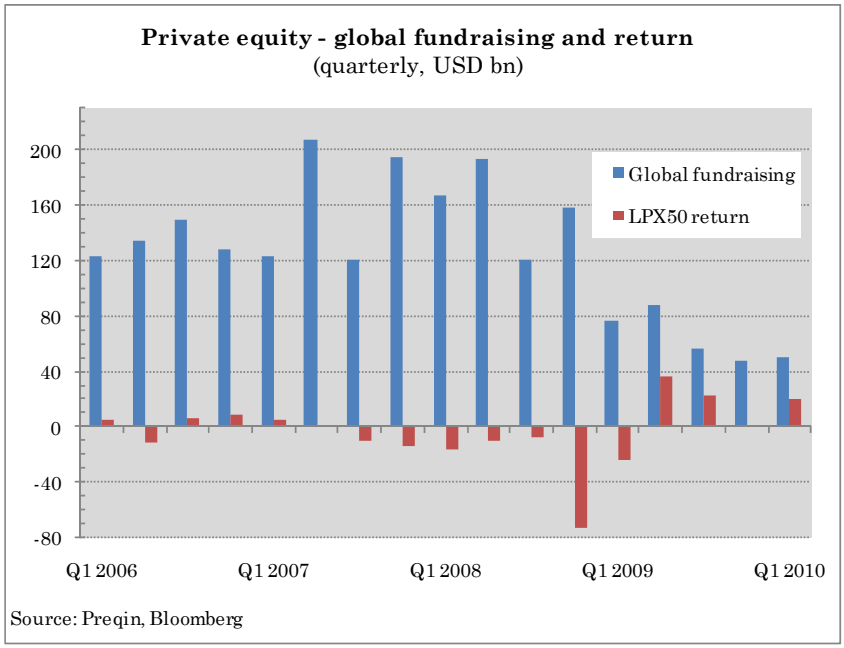


Figure 33

The LBO-PE market has recorded a substantial increase in the equity portion of deal financing (e.g. 56% in Q1-Q3 2009 - against 45% in 2008 and 34% in 2007, which corresponds broadly to the average rate over the last decade). This means that there is a "substitution" effect between these two funding sources of PE activity (debt and equity), which in turns reduces the impact of the debt markets performance in the PE business as a whole[32].

[32] See EVCA Barometer, Issue 70, Winter 2010,

10. The steady increase in UCITS net inflows after the year 2008 continued after the "interruption" in 2009 Q4; redemptions from money market funds continued in favour of alternative investment vehicles with potentially higher returns; considering all UCITS categories, almost all Member countries recorded net inflows, but due to redemptions in money market funds, Spain was particularly affected by net outflows.

The overall investment fund market in Europe, which includes the UCITS and the non-UCITS market, increased in 2010 Q1 by almost 6% to EUR 7445bn (figure 34).

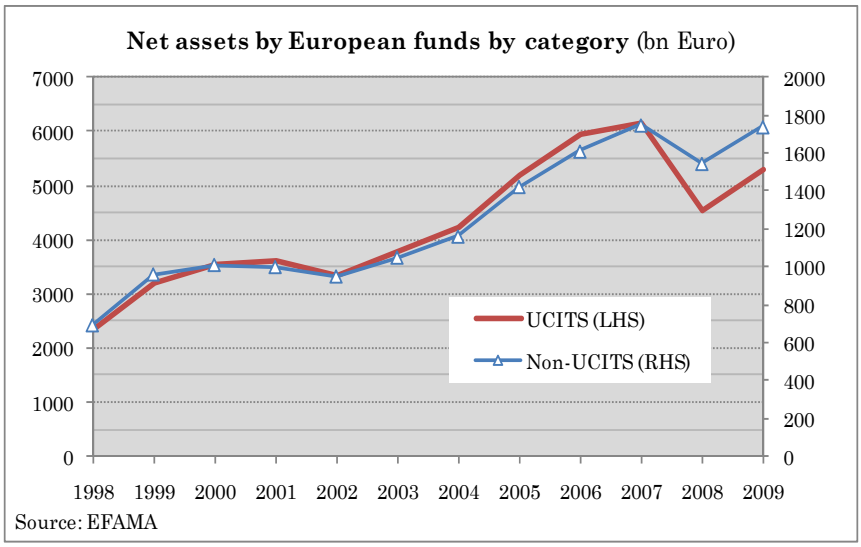


Figure 34

In 2010 Q1, net inflows into UCITS increased to EUR 49bn and thus continued the steady increase in flows up to 2009 Q3, after the very significant outflows of 2008 after EUR, and the "interruption" of EUR 1bn in 2009 Q4. Money market funds suffered from net redemptions in each month in the last four quarter as investors turned, in a low short-term interest rate environment, to alternative investment vehicles in the hope for higher returns (see figure 35, and section 5 which reports on the development of UCITS hedge funds) [33].

[33] EFAMA: *Quarterly Statistical Release Nr 41*, June 2010.

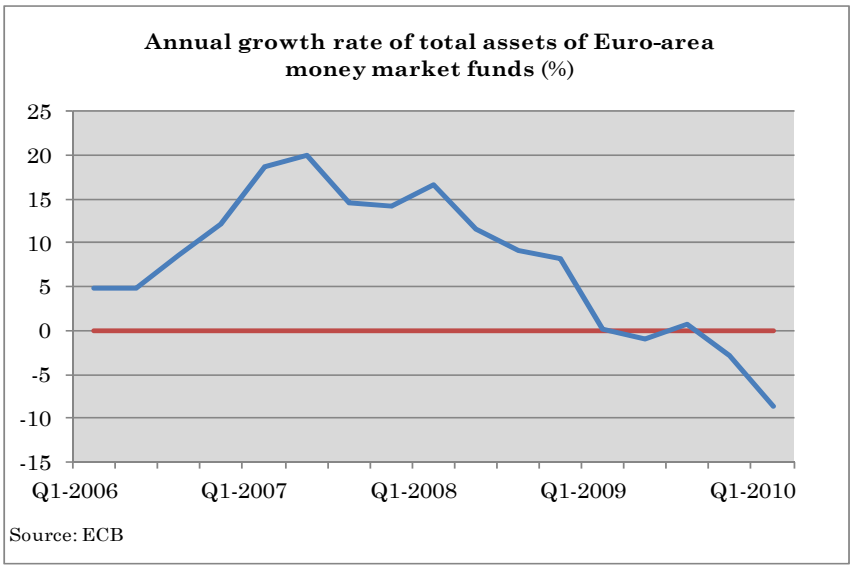


Figure 35

The change in portfolios generated net inflows of EUR 87bn into long-term UCITS (which exclude money market funds), the highest since 2006 Q1 (figure 36).

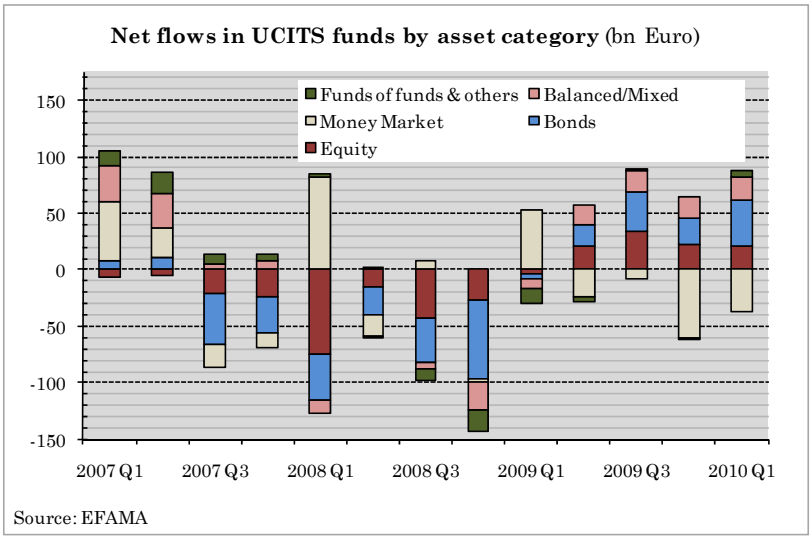


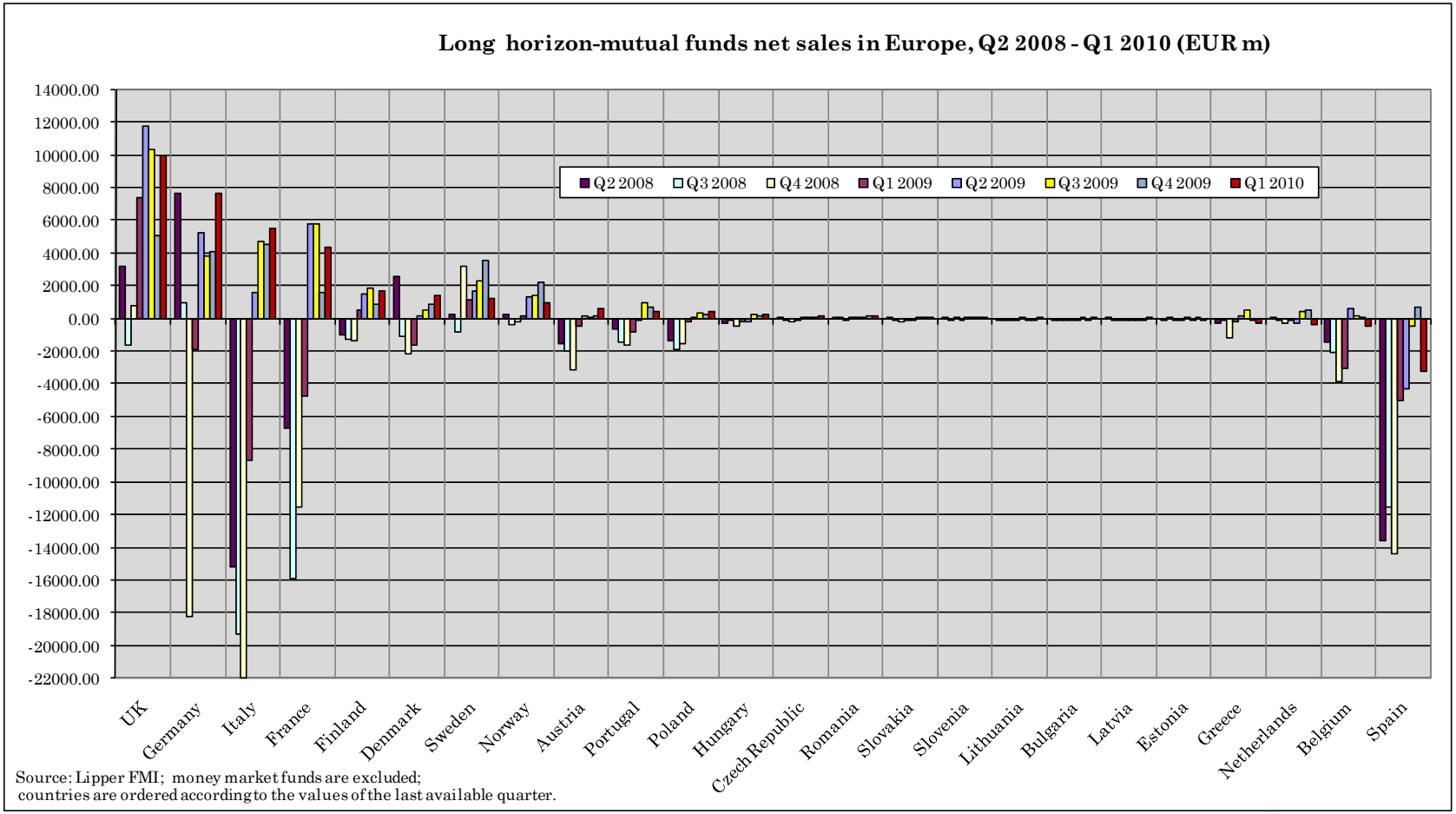
Figure 36

In 2010 Q1, positive net inflows were recorded by 17 countries. Net inflows were particularly strong in Luxembourg (EUR 41.0bn, i.e. 84% of the total net inflows), the United Kingdom (EUR 5.8bn), Germany (EUR 3.0bn), Italy (EUR 2.0bn), Denmark (EUR 1.9bn), Sweden (EUR 1.7bn), and Finland (EUR 1.1bn). Net outflows were witnessed in Greece, France, Portugal, and were strong in Spain (EUR 3bn).

For the whole of 2009, UCITS domiciled in Luxembourg and the United Kingdom accounted for 81 % (54 % and 27 % respectively) of the EUR 123 bn of net inflows to UCITS in Europe.

Looking at the development in the major fund markets in 2009, all countries experienced asset growth except Italy and Spain. Among established markets, the Ireland featured the strongest asset growth (9.2%), followed by Luxembourg, the UK, and France. The Nordic countries experienced asset growth above the European average (with a 10% increase in Sweden). In Central Europe, UCITS asset growth was also very significant in Romania (33%), Poland (16%) and the Czech Republic (7%).

The total number of UCITS funds increased slightly in comparison to the year end 2009.



Source: Lipper FMI; money market funds are excluded;
countries are ordered according to the values of the last available quarter.

Figure 37

11. In May, the overall value of M&A deals reached a low both in terms of numbers and values of deals.

During the first half of 2009, in Europe, the number of merger & acquisition (M&A) deals moved in a range between 1400 and 1800 per month staying broadly constant (figure 38). The significant decline in the deals that started in November – only temporarily interrupted in March – led to a historical low in May 2010, both in terms of numbers and values of deals.

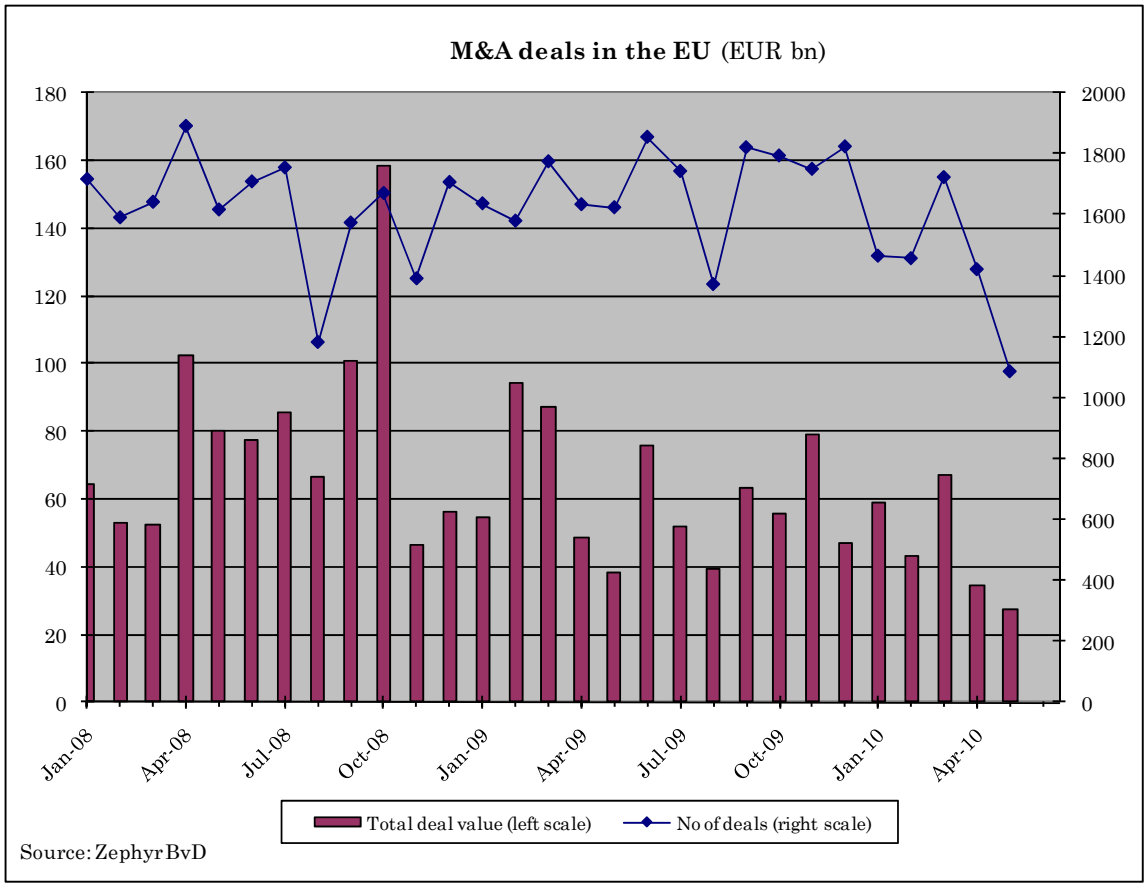


Figure 38

12. Timid signs of a revival in the IPO market in 2009 Q4 were reconfirmed in 2010 Q2.

Against the positive performance of the stock markets and the very fast drop in the implied volatility in option stock markets, there have been timid signs of a revival of initial public offerings (IPOs) by corporate firms and banks in European exchanges in the last quarter 2009 and the first quarters 2010 (in 2010 Q2 there were 89 IPOs of a value of EUR 9014m, London accounting for 30% in terms of numbers and 36% in terms of values, followed by Warsaw Stock Exchange with 25 listings). 2009 Q4 to 2010 Q2 compare positively to the previous quarters in 2009 – though both the numbers and the volume are still at a very low level. IPOs have been largely sluggish since mid-2008, with the very few new issuances emanating essentially from foreign non-EU companies until 2009 Q2 (Figure 39). European exchanges outperformed the US exchanges by value for the second time since 2008 Q4, but the primary market, so far, has clearly demonstrated that, against a background of high market volatility, investors continue to be selective, especially regarding pricing levels.

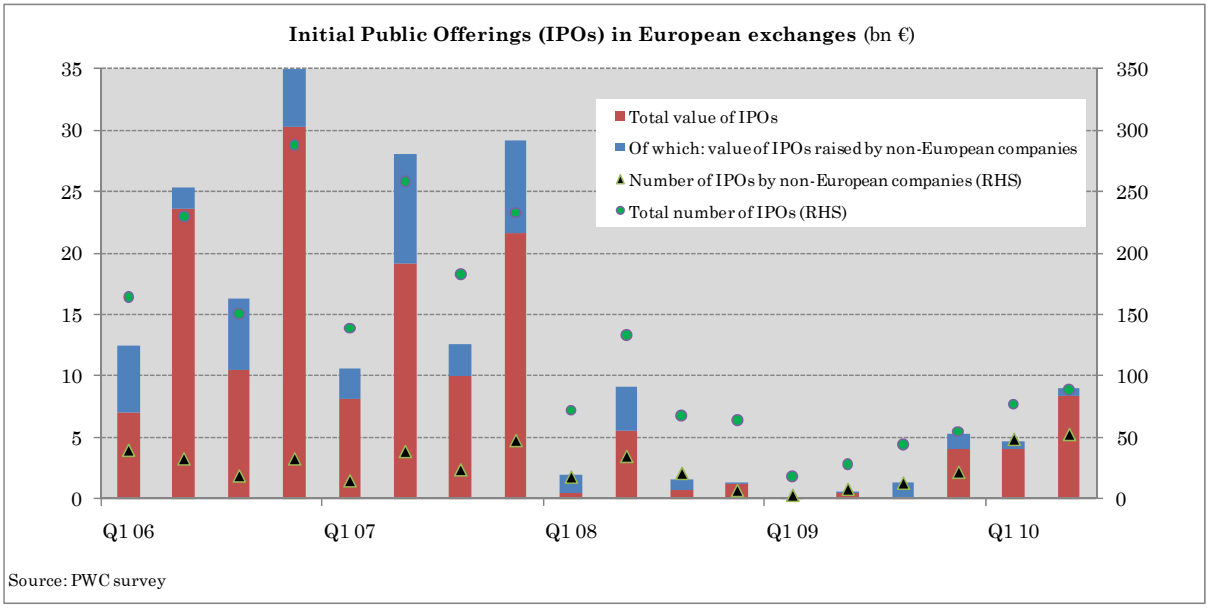


Figure 39

13. In 2009 Q2, the number of ETFs listed in Europe surpassed those listed in the U.S.; although there has been a decrease in ETF-managed assets worldwide of about 3% since February 2009, Exchange Traded Products (ETPs) – funds, commodities, and notes - are expected to grow in 2010; ETF trades in Europe are not always reported as they are currently not covered by the MiFID transparency regime.[34]

In 2009, assets of European Exchange Traded Products (ETP) - which cover Exchange Traded Funds (ETF), Exchange Traded Commodities (ETC) und Exchange Traded Notes (ETN) - rose by 53% from €104.4 billion to €160 billion, according to a Deutsche Bank report[35]. The overall number of ETPs rose from 771 to 1,049 during the course of the year. As about 2/3rd of ETPs are linked to equity vehicles, much of the asset growth was driven by the upswing in equity markets. However, the growth in ETPs outpaced the one in equities (figure 40). Overall, in Europe, 18 exchanges are listing ETPs from 33 providers.

[34] See box 5 for a short presentation on risks to retail investors potentially arising from some specific ETF products.
[35] See Deutsche Bank, ETPs & ETFs 2009 Market Review & 2010 Outlook, 31 December 2009.

In comparison, in the US ETP market, assets grew by 45% in 2009, reversing the 13% decline seen in 2008. By the end of the year, combined US and European ETP assets had breached the US$1 trillion mark for the first time (figure 41). In 2009 Q2, the number of ETFs listed in Europe amounted to 812, against 753 in the U.S.[36]. Worldwide, there has been a decrease in ETF-managed assets of 3% (from USD1.035bn to USD1.001bn) from February 2009 to February 2010.

Box 6: The CFTC's new rules on commodity ETFs

On 18 March 2010, the U.S. Commodity and Futures Exchange Commission (CFTC) released long-awaited commodities proposals; these rule changes could single out certain futures-based commodity ETFs while allowing others to operate normally. ETFs currently use an exemption to give investors access to complex futures markets, but regulators were questioning the situation and asked for tighter rules on energy trading and stricter definitions of traders who are exempt. The new proposals set forth could curb both the United States Natural Gas ETF (UNG) and the United States Oil ETF (USO), whose tremendous size and open interest may have impacted the price of futures contracts in 2009.*

In the new "Proposed Position Limit Rule", CFTC officials cited both UNG and USO as examples to illustrate their ideas of position limits. Over the past year, the CFTC has been examining the ways in which futures-based commodity funds like UNG and USO impact the price of the commodities that they track. UNG and USO are designed to offer investors exposure to the spot price of natural gas and oil, respectively. The funds accomplish this strategy by tracking a basket of near-month futures contracts traded on the New York Mercantile Exchange.

The new CFTC proposals cover four energy commodities: Henry Hub natural gas, light, sweet crude oil prices, New York Harbor No. 2 heating oil, and New York Harbor gasoline blendstock. The regulations would impact the two exchanges on which these contracts are traded: the New York Mercantile Exchange and the Intercontinental Exchange (ICE). The proposal sets forth a formula to calculate the number of futures contracts that any single entity can hold.

**UNG and USO are both single-commodity, front-month ETFs. The UNG seeks to replicate the performance, net of expenses, of natural gas. The trust will invest in futures contracts on natural gas traded on the NYMEX that is the near month contract to expire. It is non-diversified. The USO seeks to reflect the performance, less expenses, of the spot price of West Texas Intermediate (WTI) light, sweet crude oil. The fund will invest in futures contracts for WTI light, sweet crude oil, other types of crude oil, heating oil, gasoline, natural gas and other petroleum based-fuels that are traded on exchanges. It may also invest in other oil interests such as cash-settled options on oil futures contracts, forward contracts for oil, and OTC transactions that are based on the price of oil.*

According to the Deutsche Bank report, the European ETP market can be expected to grow by 20-25% in 2010, approaching the €200 billion mark in asset terms. Thereby, the European asset growth rate is expected to continue to surpass the U.S. one despite the significantly larger market there. Commodities were the fastest growing sector of the ETP market last year. A notable difference between US and European ETP markets was a major shift into fixed income in the US, which was not reflected in Europe. There is an expectation that alternative ETPs, which are targeting hedge funds, could experience strong growth in Europe (see also the section on hedge funds in the risk part of this report).

Both in Europe and the U.S, a handful of providers control most assets under management. ETF trades in Europe are currently not covered by the transparency regime of MiFID, and therefore not always required to be reported (they are, however, covered by the transactions reporting regime; also, if, under MiFID, ETFs are not included under the mandatory transparency obligations, in practice the obligations exist on a voluntary basis in a majority of cases).

[36] Blackrock, ETF Landscape industry preview as at end November 2009.

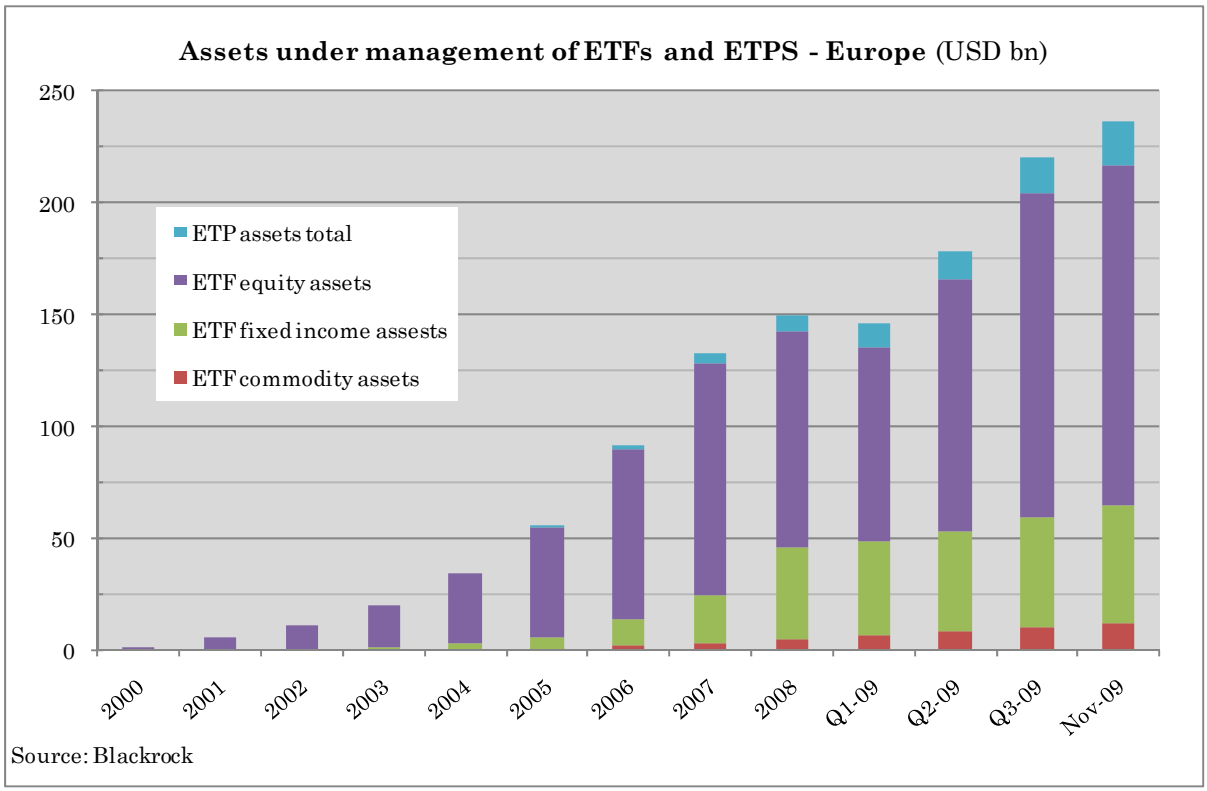


Figure 40

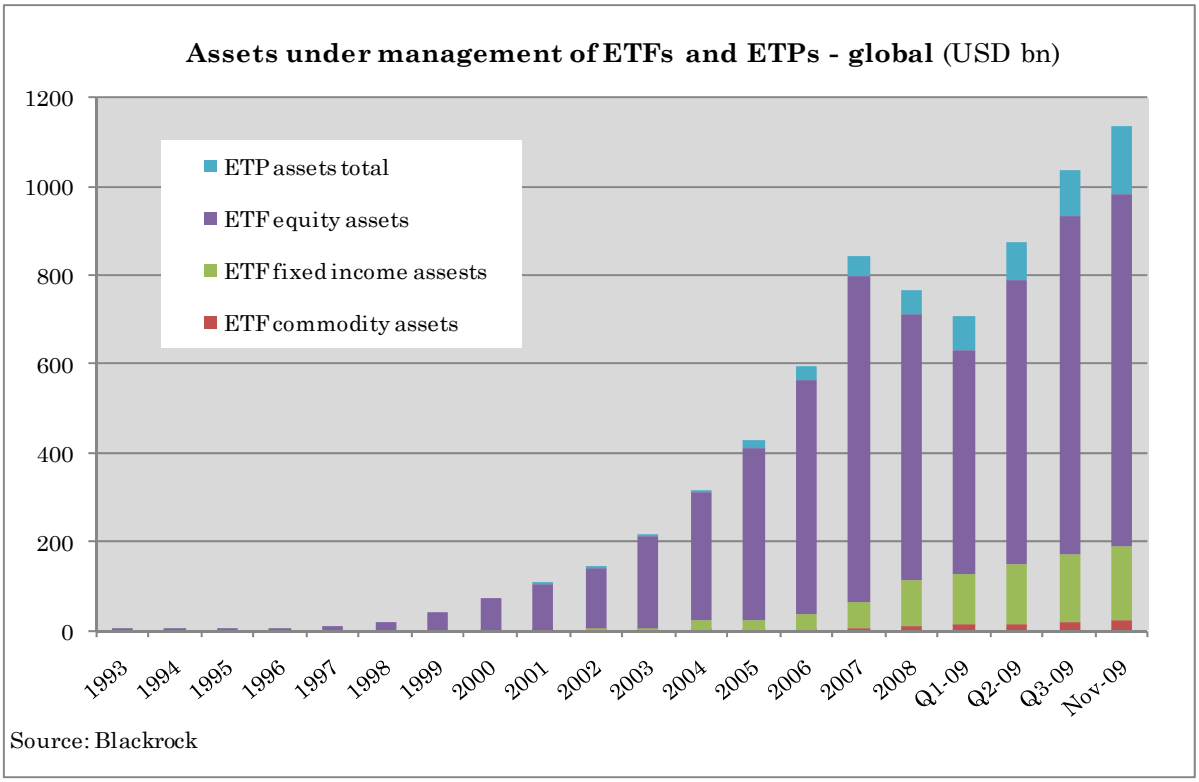


Figure 41

Appendices

- **Appendix 1 -** Developments in credit default swap (CDS) markets
- **Appendix 2 -** Long term financial market environment
- **Appendix 3 -** Short term financial market environment
- **Appendix 4 -** Financial markets structures
- **Appendix 5 -** Sovereign CDS

Appendix 1 - Developments in credit default swap markets

This note presents developments and stylised facts of the global credit default swap (CDS) markets based on the last available data from the Bank of International Settlements (BIS) [1].

Developments in CDS markets

- **Notional amounts outstanding**[2] of all types of OTC contracts (USD615 trn) increased only modestly by 2% in the last semester (H2) of 2009, in contrast with the 10% increase registered in the first half of the year (H1) above the level of end 2008 – their **gross market value**[3], however, declined by 33% and 22% respectively with respect to end 2008 to ~USD22 trn. Due to reductions in inter-dealers business and contracts with other financial institutions linked to a reduction in spreads, as well as netting, the **notional amount outstanding and the gross market value of CDS contracts both declined** with respect to end 2008 **respectively by -23%** to ~USD33 trn **and -64%** to ~USD2 trn.[4]
- Due to heightened tensions in the sovereign markets, **CDS contracts on sovereigns**, however, **increased by ~ 10% in the second half of 2009.** This is likely to have persisted in the first quarter of 2010 as well.
- The **ratio of the notional amounts outstanding of total exchange-traded derivative contracts to total OTC derivative contracts was ~12% at the end of 2009 against over 23% in June 2006**[5].
- In terms of both notional amount and gross market value, the **part of single-name CDS contracts**, i.e. contracts typically including bespoke structures that are **more difficult to feed through central structures**, has **increased to about 68%** during 2009 H2.
- The **part of reporting dealers remained broadly stable after having declined significantly in the previous semester** both in terms of notional amount outstanding and gross market value **in favour of "banks and securities firms"**.

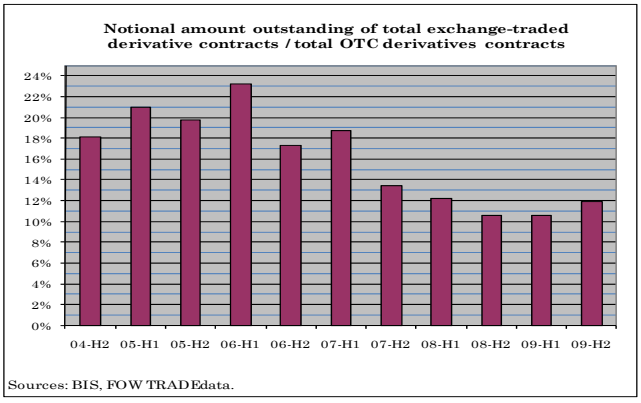


Figure 0

[1] Data source: Bank of International Settlements (BIS), "OTC derivatives market activity in the second half of 2009", May 2009. The time series on CDS data from the BIS start in 2004. From 2005 H2 on, the disaggregation of counterparties is more detailed.

[2] Notional amounts outstanding are defined as the gross nominal or notional value of all deals concluded but not yet settled on the reporting date. For contracts with variable nominal or notional principal amounts, the basis for reporting is the nominal or notional principal at the time of reporting. One should note that those amounts do not generally reflect the risks involved in CDS transactions (for instance, price level and or volatility of the underlying, duration and liquidity of contracts, creditworthiness of counterparties).

[3] The gross market value corresponds to the cost of replacing existing contracts and can be considered a measure of market risk.

[4] The BIS publishes no concentration ratios for the CDS business, in contrast to the other segments.

[5] The total of OTC derivative contracts used here includes interest rate contracts, foreign exchange contracts, CDS contracts, equity-linked contracts, and unallocated contracts, but not commodity contracts as (the figures from FOW TRADEdata do not include commodity contracts (which are, however, a negligible part of the total derivative contracts).

Some stylised facts of CDS markets

- Trades of CDS contracts, which, in relative terms, barely existed at the beginning of the decade, have developed extremely rapidly in OTC markets[6]: in June 2004 the notional amount outstanding was USD6.3 trn, and a peak of USD58 trn was reached in June 2007 (figure 1). In terms of gross market value, the figures are USD0.1 trn in June 2004 and USD5.1 trn for the peak in the second half of 2008 (figure 7).
- The most recent BIS data indicate that, at the end of 2009, the **CDS market was the third largest segment of the global OTC derivatives market both in terms of amounts outstanding** and gross market value - after the segment of interest rate contracts, which represents (in terms of notional outstanding) 73% of the market (swaps represent with 57% by far the bulk of the instruments across all segments), and foreign exchange contracts whose amount outstanding is broadly equivalent to the one of the CDS market (8% and 5% respectively).
- In terms of amount outstanding, **less than 1/3 of the market corresponds to multi-name CDSs** which include index and index tranche products (figures 3 and 4). Index and index tranche products are generally more standardised, and thus easier to trade in the market and to process in multilateral netting systems than single-name contracts.
- **91% of single-name CDS contracts refer to non-sovereigns** in terms of amount outstanding, and only 9% to sovereigns (figure 5). **Almost 32% of single-name CDS contracts are either non-investment grade or not rated** (21% and 11% respectively), the 67% remaining contracts are investment grade (figure 6).
- **Reporting dealers, banks and securities firms bought and sold together about 85% of the notional amount of CDS contracts**[7]: reporting dealers 54%, banks and securities firms 30%, insurance companies and non financial customers 1%, and other financial institutions 10% (see figures 1 and 2). **Only for the small sectoral players was the amount bought much larger than the amount sold.**
- Contracts with **maturity of more than 1 year represent 89% of the amount outstanding of OTC CDS contracts**: 66% for contracts for between 1 and 5 years, contracts for over 5 years represent 23% and those for up to one year 11%.
- CDS markets are largely unregulated.

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[6] There are, for instance, no data on CDS contracts on exchange-traded CDS contracts.

[7] In the foreign exchange derivatives and the interest rate derivatives segments reporting dealers and other financial institutions also have a similarly large part in terms of amounts outstanding. Available data do not allow assessing the particular role of banks and securities firms in these markets. However, in comparison, it is likely that in the CDS segment the role of banks and securities firms is significantly stronger, as, for instance, insurance companies, who operate on an international basis, engage in significant hedging activities against foreign exchange risk.

OTC CDS market - Notional amount outstanding (USD bn)

Figure 1

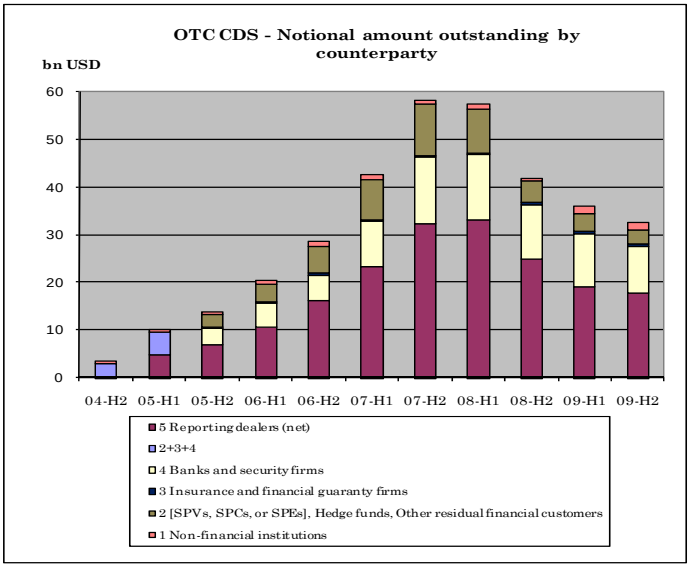


Figure 2

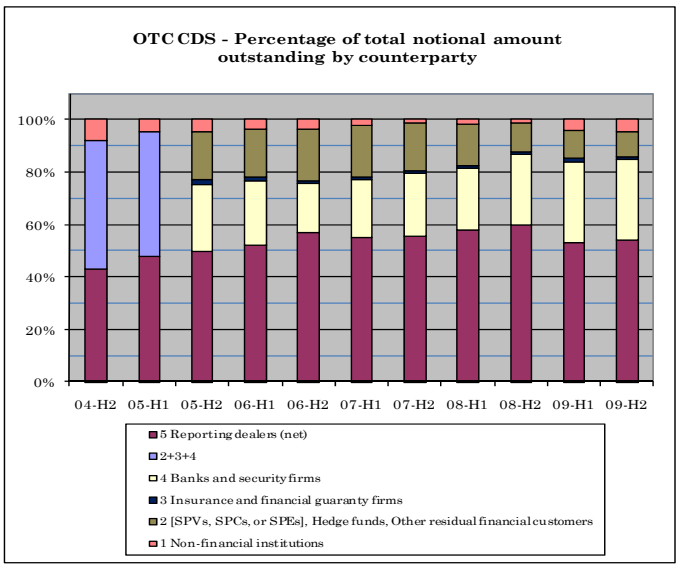


Figure 3

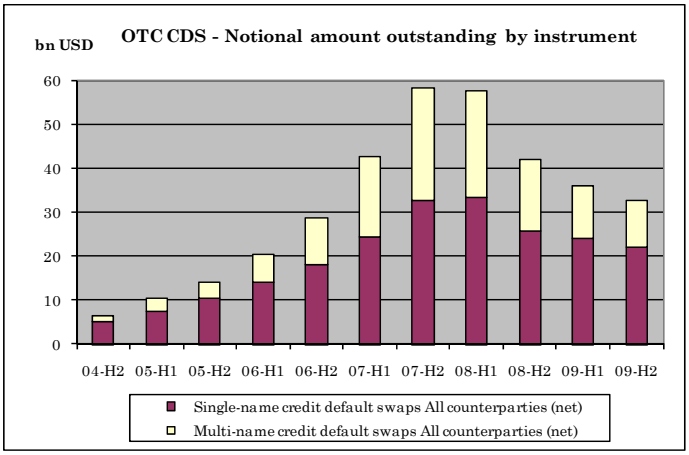


Figure 4

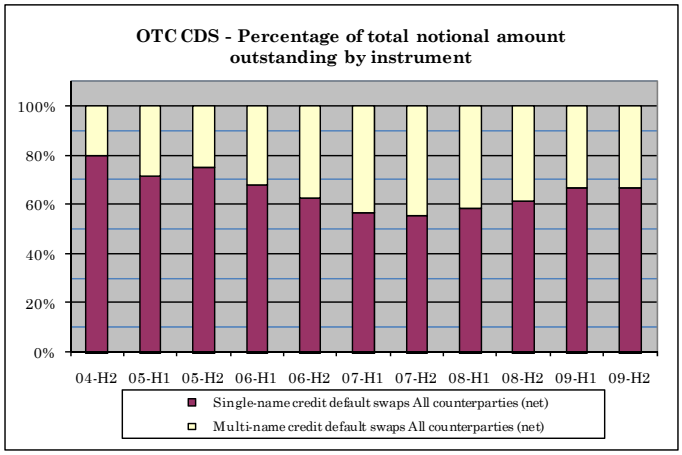
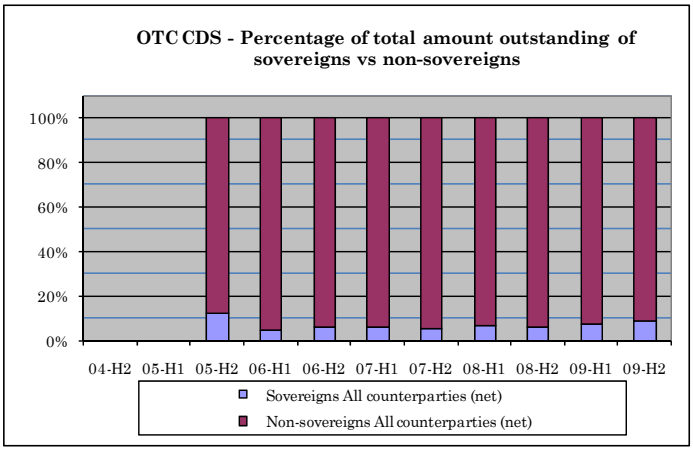


Figure 5



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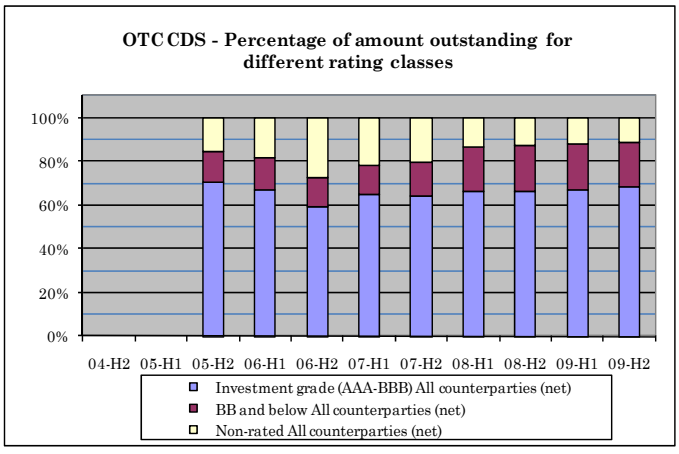


Source: BIS, calculations by CESR

OTC CDS market – Gross market value (USD bn)

Figure 7

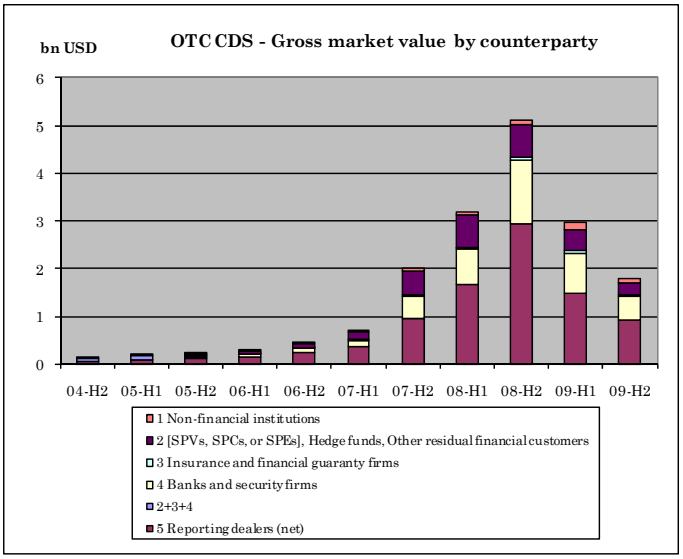
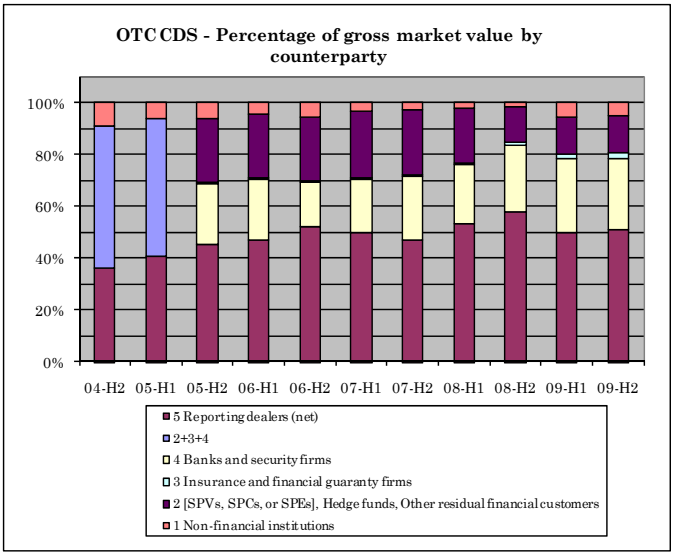


Figure 8



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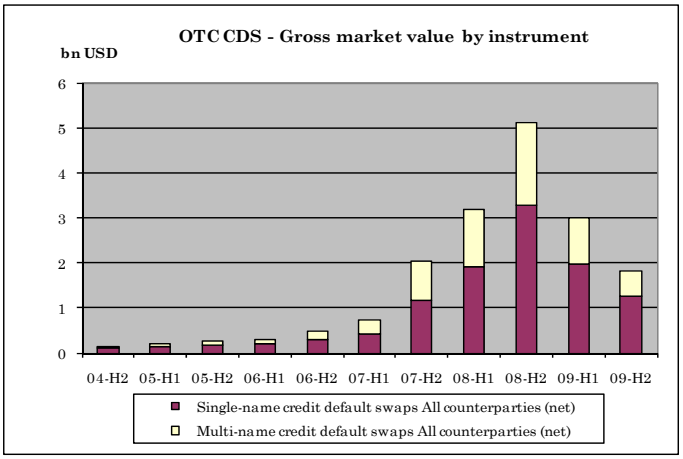

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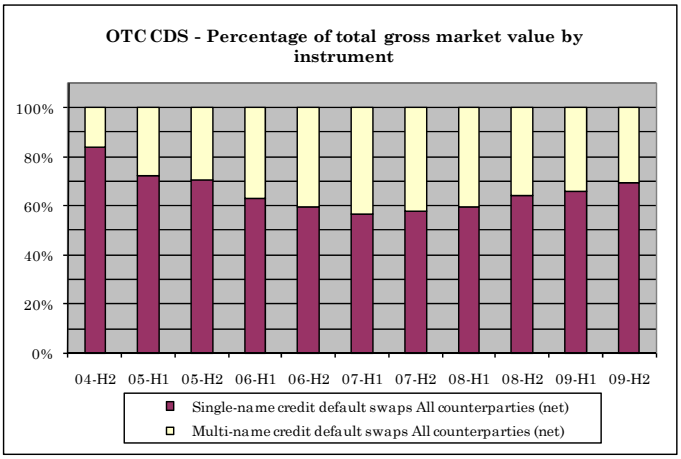

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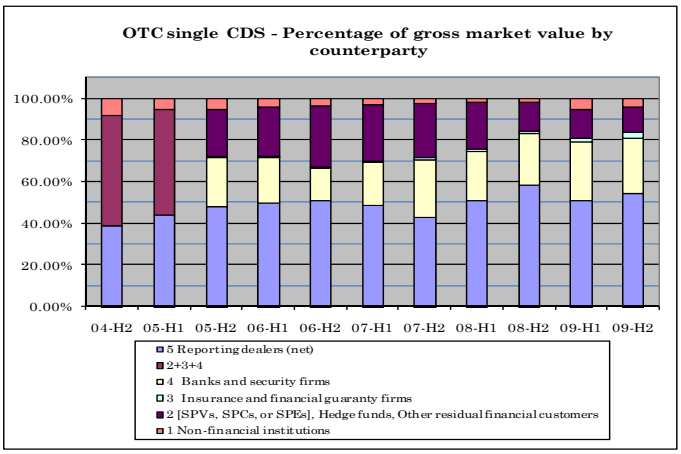

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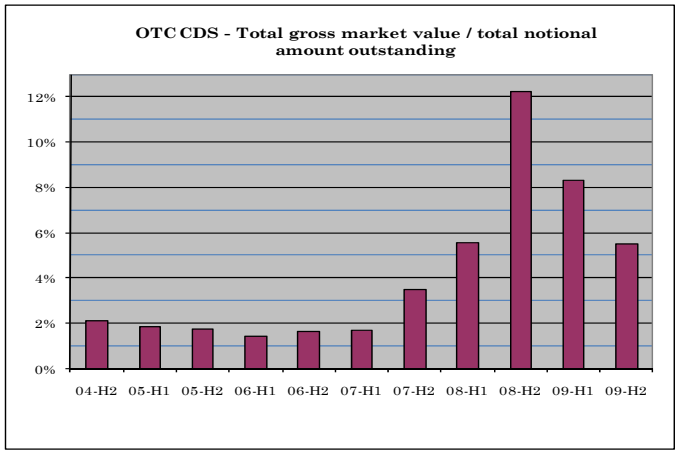
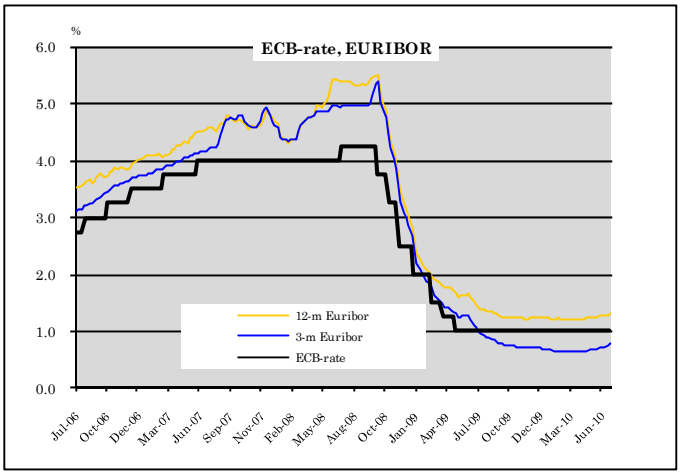


Source: BIS, calculations by CESR

Appendix 2 - Long-term financial market environment (weekly)

Money and bond markets

Figure 1



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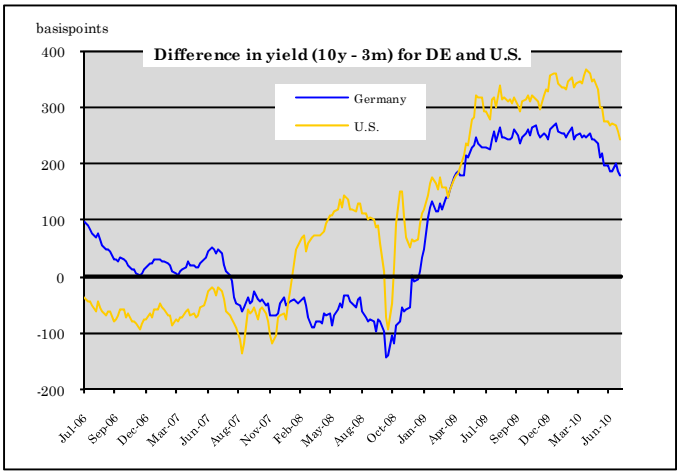

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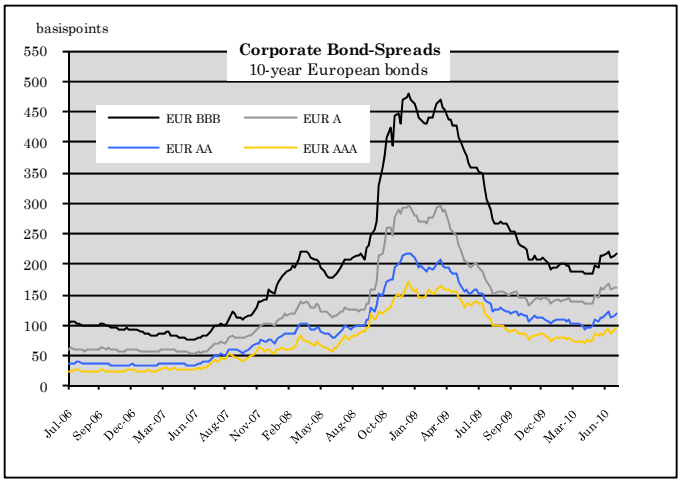

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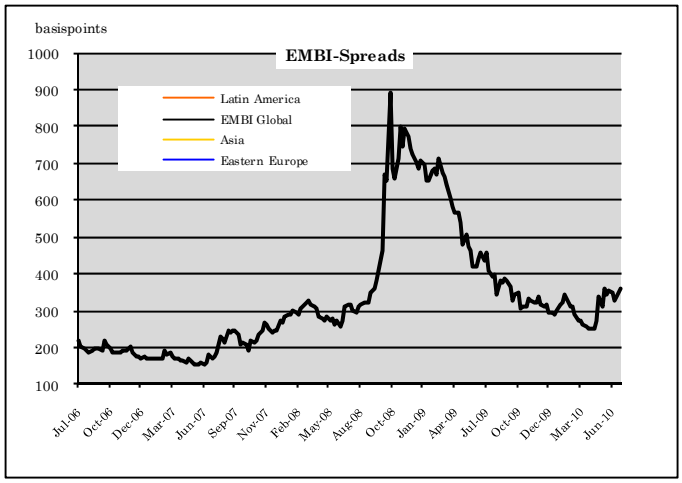
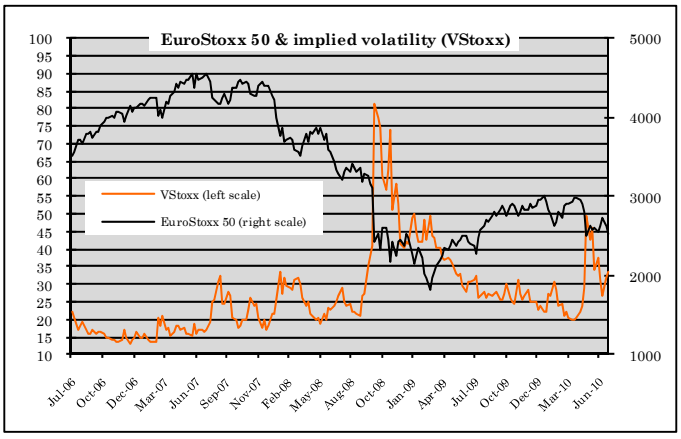


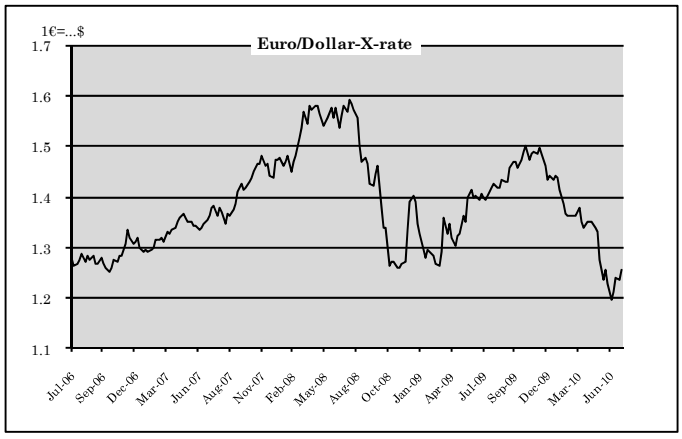
Stock markets

Figure 5



Foreign exchange market

Figure 6

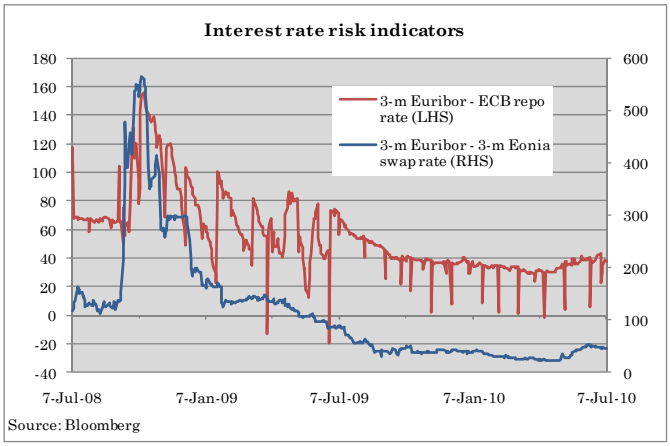


Source: Bloomberg

Appendix 3 - Short-term financial market environment (daily)

Money markets

Figure 1



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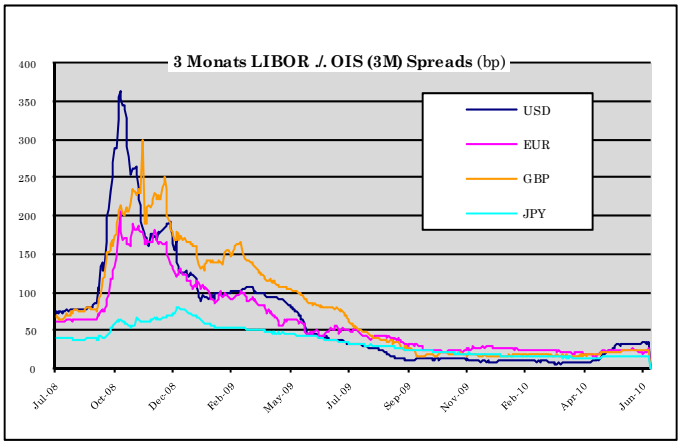
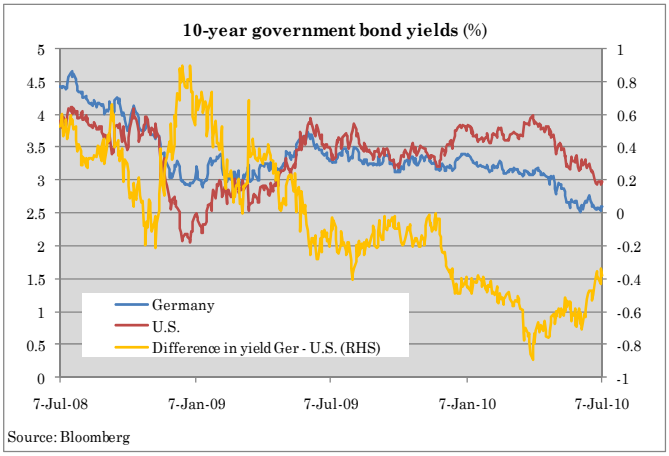


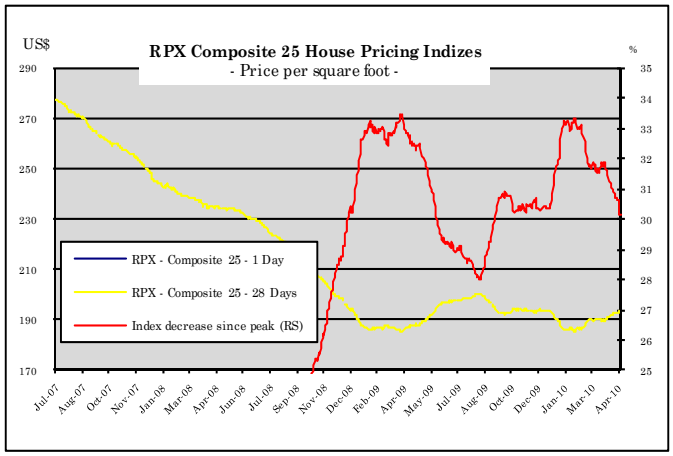
Bond markets

Figure 3



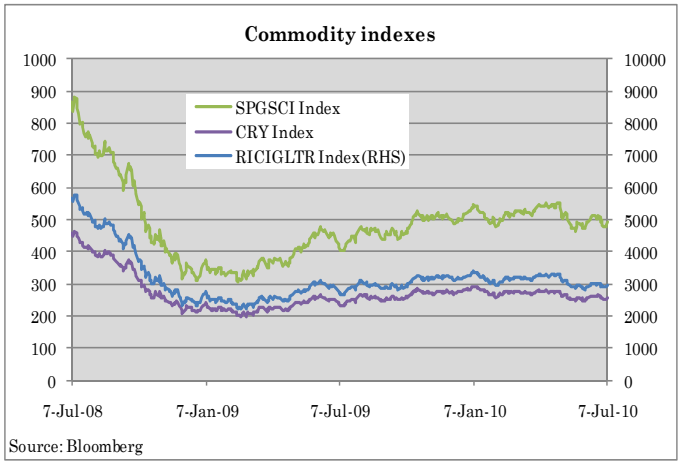
U.S. residential property market

Figure 4



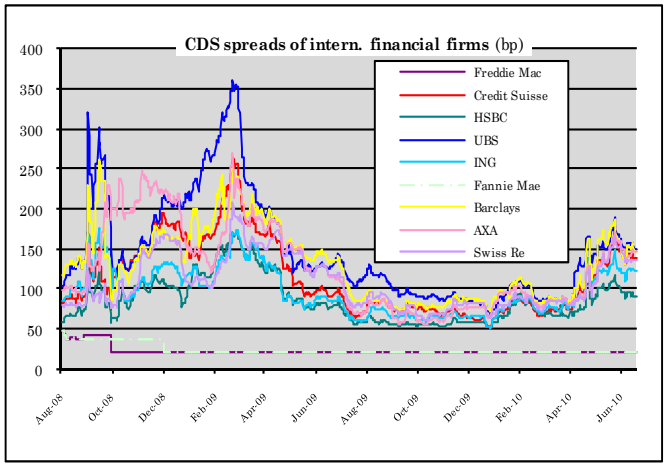
Commodity indexes

Figure 5



Credit markets

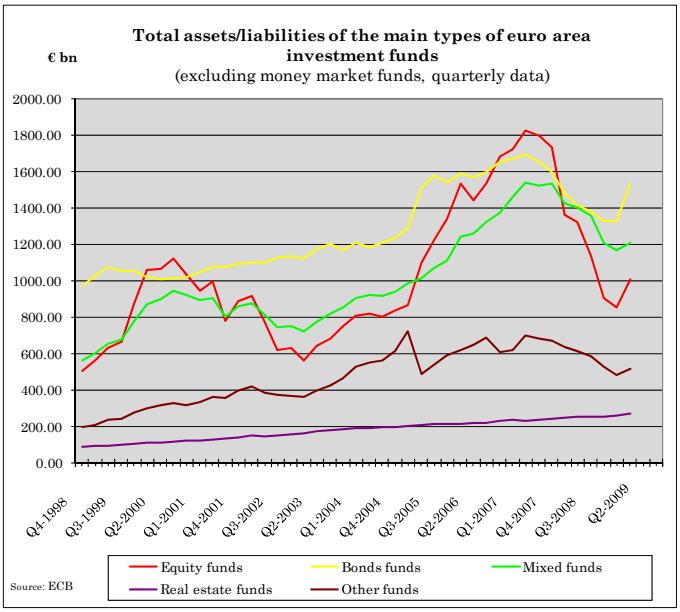
Figure 6



Source: Bloomberg

Appendix 4 – Financial markets structures

Figure 1



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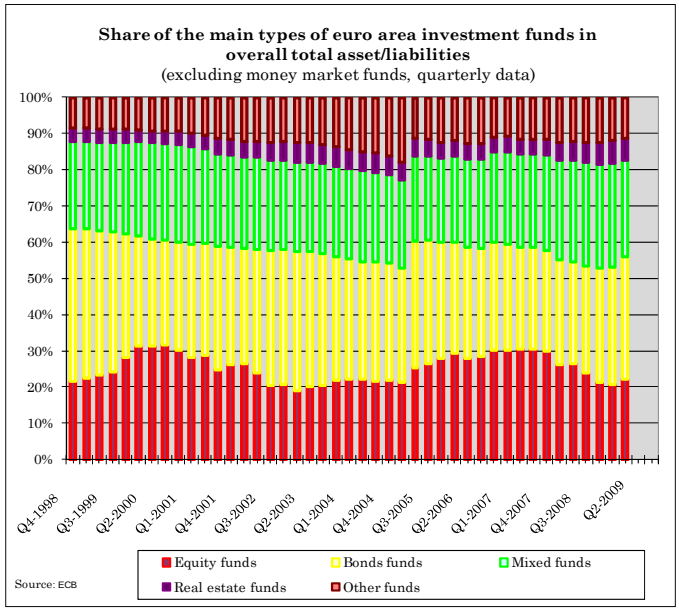

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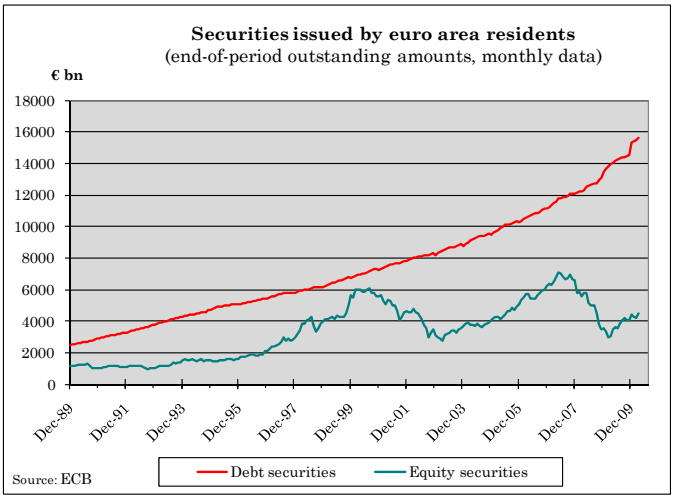

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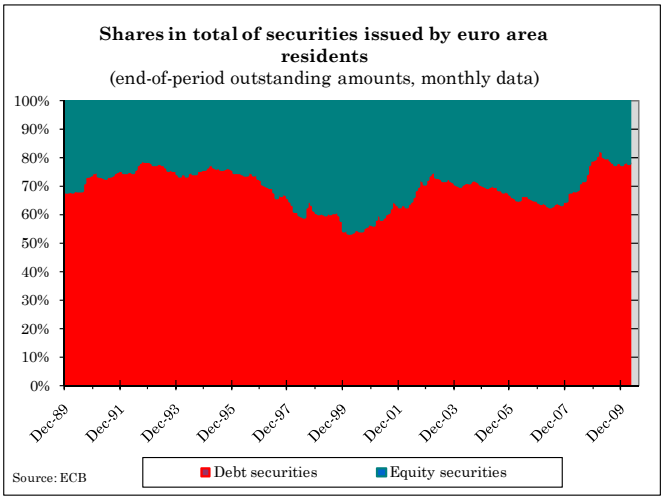

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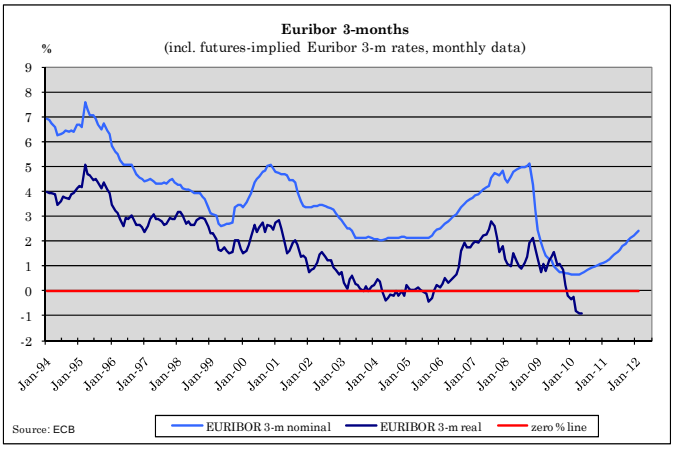

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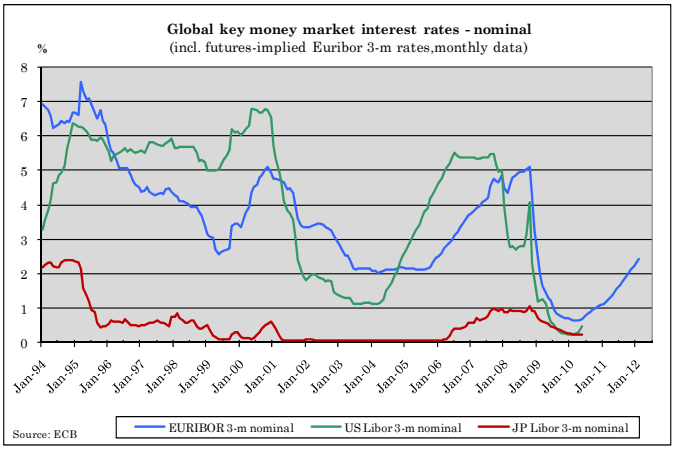
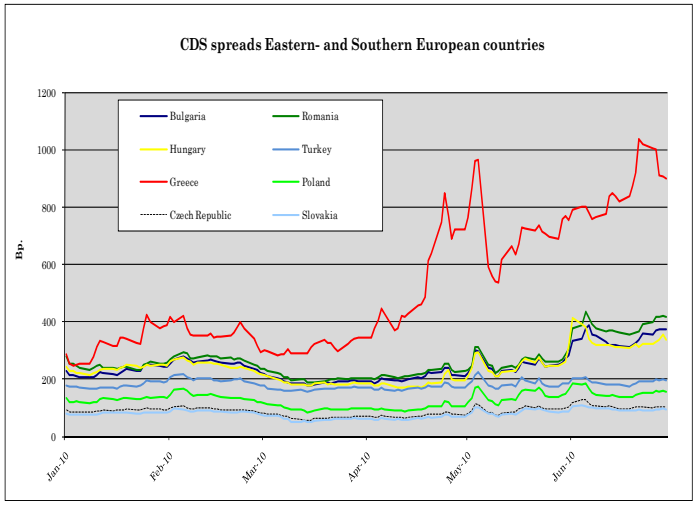


Appendix 5 - Sovereign CDS spreads (daily)

Figure 1



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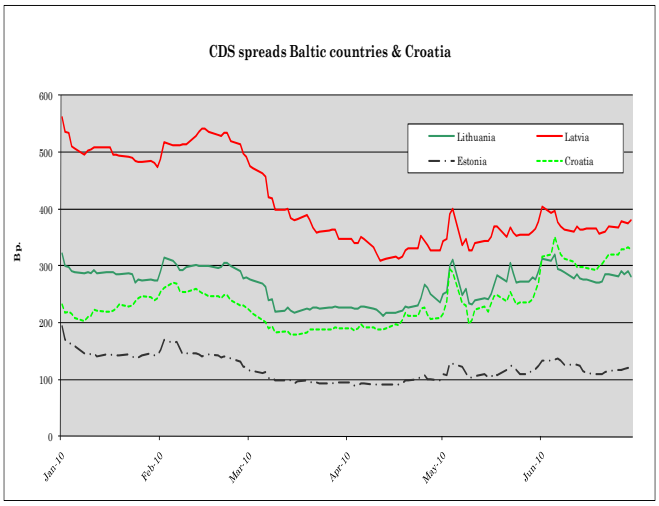

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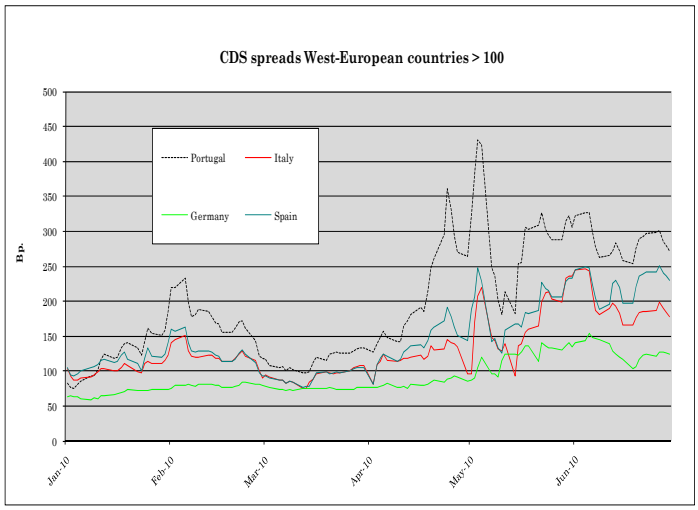

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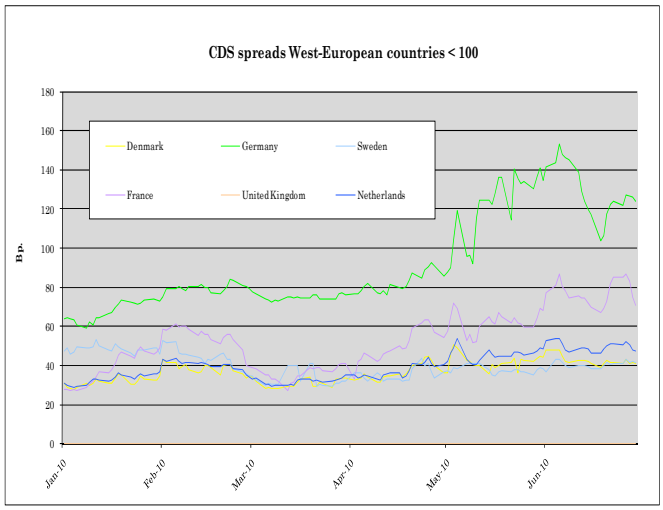

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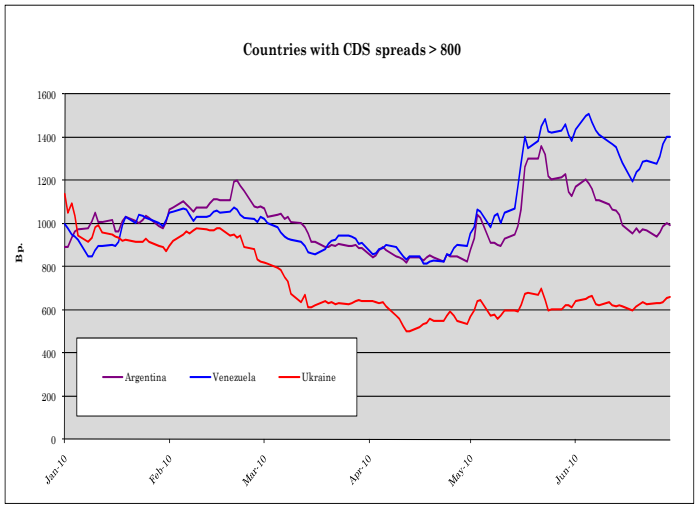
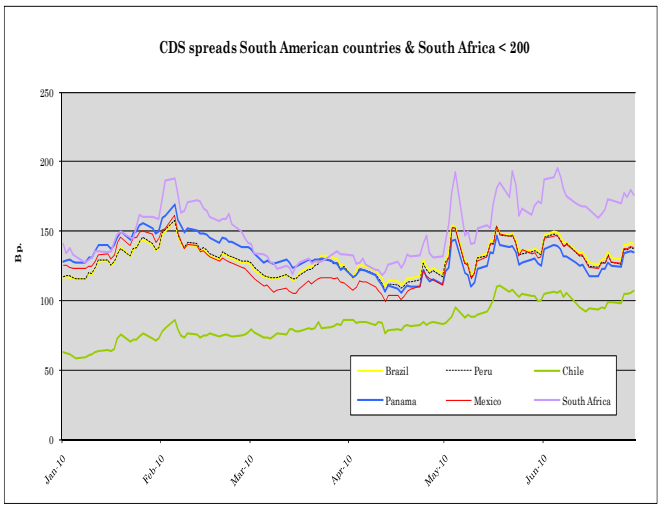


Figure 6



Source: Bloomberg