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**JOINT COMMITTEE REPORT ON
RISKS AND VULNERABILITIES IN THE EU FINANCIAL SYSTEM
MARCH 2014**

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EXECUTIVE SUMMARY

The European financial system continues to face a range of interrelated and cross-sectoral risks¹. These risks require continuous heightened supervisory attention both at the political level and from the European System of Financial Supervision, including the European Supervisory Authorities (ESAs). Although important policy milestones have been reached, in particular in the field of regulation, key risks identified in the previous report, such as the fragmentation of financial markets and the effects of persistent low interest rates, continue to challenge the stability of the European financial system. This report considers risks which have worsened since August 2013, and emerging risks, such as those linked to the conduct of business or to infrastructure functions.

Although near-term risks to the EU financial system from the euro-area sovereign debt crisis have abated and several indicators are pointing to improving confidence in the EU economy, the economic outlook remains fragile in a number of Member States, also due to weak private and public balance sheets. Uncertainties about asset quality persist in the banking sector and institutional investor segments, for example real-estate and private equity funds in some Member States remain a fundamental issue across the EU. Going forward, the EBA and EIOPA, in coordination and consultation with the ECB and the ESRB, will assess the resilience of banks and insurers to macroeconomic and market shocks. Banks will be required to stress test credit risk, market risk, sovereign risk, securitisation and cost of funding². Insurers will be required to stress test interest rate risks (including low yields) as well as other risks, such as insurance-specific risks, credit and market risks.

Recent market developments have highlighted key risks that relate to the uneven global macroeconomic conditions and to associated policy responses that are not necessarily tightly coordinated. This report focuses in particular on (i) risks associated with the search-for-yield behaviour that relies on continued low interest rates, (ii) concerns about a sudden increase in global bond yields, and (iii) potential vulnerabilities stemming from renewed tensions in global emerging market economies. While the accommodative monetary policy stance and further measures taken by central banks significantly contributed to successfully mitigating crisis effects, the protracted nature of the low-interest-rate environment has intensified the search-for-yield behaviour. Market participants are **seeking higher yields in various ways**, including investing in riskier and less liquid assets and investing through off-balance-sheet investment vehicles. As the search-for-yield behaviour intensifies, so do concerns regarding the build-up of imbalances and the risks associated with interest rates change, which may determine a sudden and disorderly unwinding of financial positions. As the continuing strong performance of markets is accompanied by the concern that investment flows and fundamentals decoupled, in particular risks from a **sudden jump in global bond yields and credit spreads** are increasing.

Developments in recent months have also highlighted **risks stemming from global emerging markets economies (EME)**, which relate to political uncertainties, economic slowdown and foreign exchange volatility, with the potential to affect the European financial system via its significant aggregate exposure to emerging markets economies, be that through economic links or financial exposures. Imbalances becoming apparent in EME may be a symptom of wider global imbalances with a potential for impacts and repercussions in other parts of the global economy.

¹ This report focuses on the broad risks and conditions within the EU. For the sake of brevity it omits individual country-specific details. Hence, it does not fully reflect the wide dispersion of risks and conditions throughout the EU and does not always represent risks and conditions within the individual countries perfectly. Therefore, the conclusions drawn apply only on an aggregate European level. This qualification applies throughout the report.

² <https://www.eba.europa.eu/documents/10180/563711/Communication+on+the+2014+EU-wide+stress+test.pdf>

Finally, this report identifies some policy measures or recommendations to prevent or mitigate the consequences of reputational and operational risk both in financial institutions as well as with regards to consumer protection. Risks associated with **deteriorating business conduct in financial institutions, the reorganisation of financial market infrastructures, and operational risks from IT infrastructure** require further attention. Addressing issues such as identified or alleged misconduct of business and inadequate oversight structures will contribute to the restoration of confidence in the European financial sector and supports the promotion of consumer protection.

Promoting confidence in the European financial sector more permanently will also depend on the success of ambitious structural reforms being implemented across Europe, aimed at promoting medium- to long-term economic growth, increasing income generation and enhancing debt sustainability of sovereigns, and strengthening the balance sheets of corporations and households.

INTRODUCTION

While the range of risks facing the EU financial system has not changed substantially since the previous Joint Committee Report on Risk and Vulnerabilities, recent developments have pointed to further risks coming increasingly to the fore. In particular, this report covers:

- search for yield in a protracted low-interest-rate environment;
- concerns about a sudden increase in global bond yields;
- potential implications from renewed tensions in emerging market economies;
- risks from the deteriorating conduct of business of financial institutions;
- increased concern about operational risks from IT infrastructures.

These risks, although presented individually in separate sections of this report, are often highly interlinked. Moreover, key risks identified in the previous report continue to challenge the stability of the European financial system and remain relevant. Since the last report, new evidence has indicated a receding fragmentation of bank funding markets. Banks of different sizes headquartered in economies experiencing sovereign stress have regained access to unsecured funding, and differentials to spreads of banks headquartered in economies with strong market perceptions have declined. Nevertheless, the European financial sector appears **fragmented with regard to cross-border banking activity**. There has been evidence that intra-EU cross-border lending into economies experiencing sovereign stress or recession has been materially scaled back and remains at low volumes. Evidence also suggests that lending rates for loans extended to comparable non-financial corporations continues to differ substantially according to the corporation's country of domicile.

There is still uncertainty regarding the strength of the financial sector in the EU. Going forward, the EBA and EIOPA will assess the resilience of banks and insurers to macroeconomic and market shocks. Banks will be required to stress test credit risk, market risk, sovereign risk, securitisation and cost of funding. Insurers will be required to stress test interest rate risks (including low yields) as well as other risks, such as insurance-specific risks, credit and market risks.

Supervisors should encourage financial institutions to hold sufficient reserves to cover losses arising from business model risks based on prudent asset valuation and an adequate risk valuation. Additionally, supervisors should ensure that financial institutions anticipate losses stemming from potentially adverse macroeconomic and financial scenarios in order to cover potential capital shortfalls in advance. Furthermore, stress test results will support supervisors to challenge in advance the business models of financial institutions in order to prevent needs for sudden increases in required capital that may damage the confidence in financial institutions and financial stability in European markets. Similarly, supervisory support for transparency and disclosure contribute to investor confidence and financial stability by warranting the provision of the information relevant for assessing financial risk.

The ECB, ESMA, EBA and national competent authorities are increasingly monitoring new risks such as those linked to misconduct of business, risks stemming from Monetary Financial Institutions (MFI) and the quality and continuity of key financial benchmarks in the EU. In particular, confidence in interbank reference rates remains at risk, as withdrawals from the respective panels have already weakened the robustness and representativeness of some panels, and erroneous or manipulative submissions into the benchmark setting process have impaired the pricing efficiency of related financial products.

In relation to specific risks also covered in this report, some policy measures and recommendations have already been identified but further policy developments are expected as risks evolve.

As regards **EU financial regulation**, important milestones have been reached since the previous report, and the current programme of EU financial services reform has made important steps towards conclusion and implementation. With respect to the creation of the **Banking Union**, the legislation setting up the **Single Supervisory Mechanism (SSM)** has entered into force. The SSM will see euro area banks being subjected to direct ECB supervision from November 2014.

Agreement has also been reached in the trilogue on the **Bank Recovery and Resolution Directive (BRRD)**, which establishes harmonised rules on how the costs of bank failure are allocated, which should promote clarity and certainty among investors and depositors. It has been generally regarded positive from a risk perspective that the bail-in rules will apply by 2016, two years in advance of the original Commission proposal. This new legislation has been agreed at a time of improved market confidence and does not appear to have acted as a primary driver of pricing or to have had an impact on banks' issuance capacity. However, it is too early to judge the long-term impact of its application.

While trilogue negotiations have commenced on the **Single Resolution Mechanism (SRM)** negotiation, parties remain apart on some key points. There are concerns about the effectiveness of the mechanisms proposed for decision-making, about the adequacy and robustness of funding during the ten-year build up, and the transition from national funding arrangements to a Single Resolution Fund. Furthermore, the discussion on a common backstop has been postponed. Nonetheless, given that both the Council and the Parliament have given priority to the dossier, this gives reasons to believe that a final agreement may be achieved by April 2014.

As regards **insurance**, the conclusion of the long-term guarantee impact assessment and the trilogue agreement marks the end of the impasse on OMNIBUS II and allows a full implementation of **Solvency II** by January 2016. The clarity over the Solvency II implementation timeline will contribute to strengthening insurance supervision in Europe.

In the **markets** sector significant progress was made in early 2014 with political agreement being reached in principle on the **Markets in Financial Instruments Directive/Regulation (MiFID/R)**. There was agreement on the **Directive on Criminal Sanctions for Market Abuse**, which introduces common definitions of insider dealing and market manipulation, and classifies them as criminal offences in serious cases, and on the **Central Securities Depositories Regulation**, which will ensure that settlement is carried out in a safer and more efficient manner. Preliminary agreement was reached between the European Parliament and the Council on **UCITS V**, which clarifies depositary duties and liabilities, and on the **Audit Regulation**, which aims to increase investor confidence in financial information. There is a good likelihood that these reforms can be completed before the effective end of the Parliament's legislative mandate.

Nevertheless, as highlighted throughout the report, the future of the banking and insurance business in Europe is conditioned by ambitious structural reforms across Europe that promote economic growth in the medium to long-run, increasing income generation and supporting debt sustainability of sovereigns, corporations and households.

1 RISKS FROM A WEAK MACROECONOMIC OUTLOOK

Since last autumn, several indicators are pointing to **improved confidence in the EU economy**, not least in light of easing sovereign concerns in some Member States, and market sentiment continues to be supported by an accommodative monetary policy. For now market participants are anticipating the ECB/SSM comprehensive assessment to address lingering market uncertainties surrounding bank balance sheets.

Surveys of business and consumer confidence have shown marked improvements over the past six months and the Commission expects the EU as a whole to grow by 1.5% in 2014. Nevertheless, **recovery is not stabilized yet** and economic performance continues to display high heterogeneity across the EU. Thus, several Member States still experience negative growth rates, unemployment remains at high levels and indebtedness of both the public and the private sectors continues to increase. Moreover, economic activity as well is still held back by a large debt overhang, particularly of corporates, including in SMEs, which restrains their ability to raise the necessary financing.

As economic recovery remains weak and uneven, and dislocation between financial markets and the real economy continues, concerns arise regarding **asset price imbalances** and the possibility of sharp adjustments. These concerns are mainly related to market anticipations of **a possible change in the stance of liquidity programmes of major central banks** as well as to uncertainties about **the outlook in a number of global emerging market economies**.

Also, lingering **solvency problems** in the EU and in other advanced economies continue to generate additional risks for the road ahead. In fact, **high levels of indebtedness of sovereigns and the private sector** imply that any eventual future change in monetary policies can be expected to have adverse effects on the solvency of both sectors. In particular, future rises in interest rates may affect both the debt servicing burden and the valuation of financial assets. The first would affect sovereigns, households and non-financial corporates in particular, while the latter may also impact financial institutions.

As for **financial markets**, since August 2013 improving macroeconomic conditions also help to support the positive trend in market valuations. The first signs of an economic recovery in several EU Member States, including also in some distressed economies, have bolstered investor confidence and supported strong market performance, especially in equity markets. The return of some EU Member States to sovereign debt markets signalled a further relaxation in the EU sovereign debt crisis. Meanwhile, concerns about a possible overvaluation of real estate markets in some Member States persist.

However, there are also indications that favourable market pricing and compressed risk premia can, to a notable extent, be attributed to **intensifying search for yield**. In an environment of improving but still vulnerable economic outlook, risks of overvaluations with sudden, potentially substantial re-pricings and spread movements remain. On the other hand, whereas European financial market reactions have demonstrated some resilience against the US Federal Reserve's decision to begin a slow tapering of its asset purchases, the **risks of future global financial turbulence are considerable**, and the European financial system remains vulnerable to contagion from adverse developments in global EME. Also, vulnerabilities persist in light of signs of **imbalances in higher-rated sovereign and speculative-grade corporate bond** markets and indications of **potential liquidity problems, particularly in corporate debt markets**.

Regarding **risks stemming from the macroeconomic outlook**, ESAs are preparing, in consultation with the ESRB and the ECB, Union-wide stress tests. In developing common methodologies for assessing the effect of economic scenarios on an institution's financial position, it is important to ensure that the main



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macroeconomic risks and vulnerabilities for EU financial stability and financial institutions are adequately covered under the scenario to be tested.

1.1 BANKING SECTOR: ASSET QUALITY, PROFITABILITY AND FUNDING

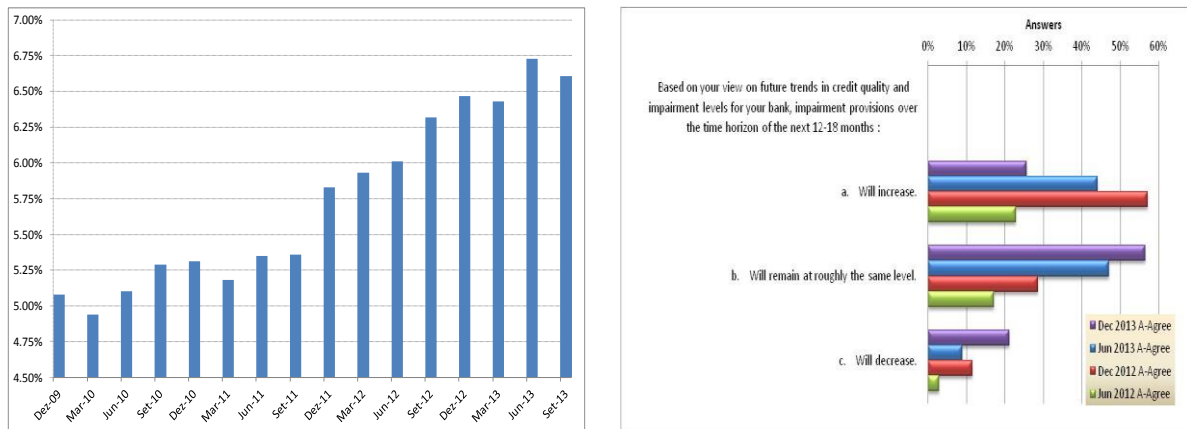
An improving level of confidence has been observed in the EU banking sector, as is reflected by improved investor sentiment and valuations for debt and equity of European banks, narrowing spreads, and market indicators implying lower perceived default risks. This has led to some improvement as regards financial fragmentation within the EU. Substantial challenges to fully restoring confidence in banks nevertheless remain in light of persisting asset quality concerns and low profitability. Further challenges such as reputational risks and continued downside risks to the economic environment in some parts of the EU also remain significant.

Further improving **capital levels** have particularly contributed to increasing confidence in the banking sector and strengthened the resilience of the sector in a fragile economic environment. Following the EBA recapitalisation exercise and strong national efforts to progress towards strong capital buffers, T1 capital increased to 12.9% in Q3/2013 (weighted average) and attained a level comparable to US peers. Also, the EBA transparency exercise showed that an increase in the Core Tier 1 of European banks increase of around EUR 80 billion from December 2011 to June 2013. While capital levels are stronger, there is no room for complacency and vulnerabilities remain.

Although there has been a constant flow of capital offerings of both common equity and hybrids which contributed to shore up bank capital positions, a reduction in risk-weighted assets (RWA) can be identified as a predominant driver of improvements in capital ratios. Perceived market uncertainties about the calculation of RWA continue to cast market doubts on strong capital levels. It is therefore important to dispel perceived market uncertainties surrounding consistency and RWA calculation. The EBA continues its work aimed to address uncertainties surrounding RWA calculations, identify any material differences in RWA outcomes and understand the sources of differences, thus contributing to improved ongoing disclosure on RWA going forward. Moreover, the setup of the SSM should contribute to improve consistency on the internal models calculation of RWA across banks in participating Member States.

While capital levels have improved and strengthened the resilience of banks against the backdrop of a weak economic environment, there was evidence of a continued **deterioration of quality** in large segments of loan portfolios throughout 2013, although there was considerable variation across portfolios and geographies. However, EBA risk indicators suggest that the intensity of the deteriorating trend has declined, and there has been some slight indication of improvement in the average level of impaired loans. It may, nevertheless, be too early to identify a bottoming out of the deteriorating trend in light of continued pressure on the financial positions of households and corporates in some regions, and of concerns about a possible overvaluation of some real estate markets. An EBA survey in October 2013 also showed that respondents, banks and financial market analysts alike, expect the level of non-performing loans to remain high.

Figure 1: Impaired loans and past due (>90 days) loans to total loans - Weighted Average and expectations for impairments



Source: EBA KRI, EBA December 2013 Risk Assessment Report

Nevertheless, it will be crucial that the ongoing asset quality review provides much desired and anticipated clarity on problem loans, level of impairments and on the degree of balance sheet repair still needed. To fully restore confidence, it will be very important that the assessments be conducted in a rigorous and credible way. It is also important that the assessments apply consistent definitions across the EU, in order to ensure comparable and credible results. To overcome differences in loan classifications (e.g. performing loans, non-performing loans) and in the way in which loan forbearance is defined, assessed and reported, the competent authorities involved, including the ECB, agreed to apply in the assessments common definitions of 'non-performing exposures' and 'debt forbearance' which the EBA had published in October 2013.

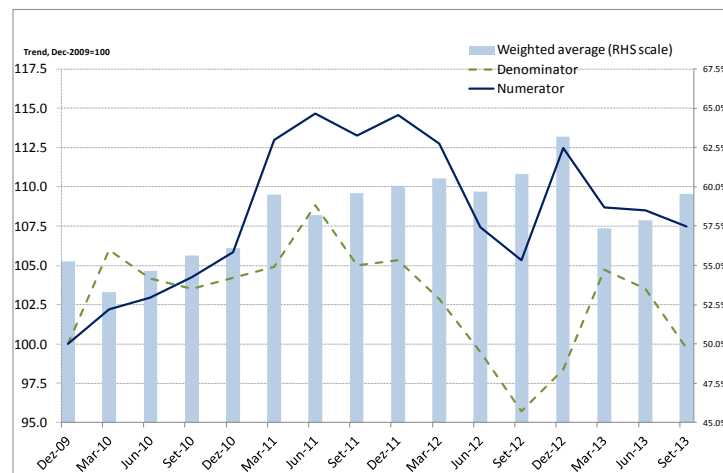
Enhanced **transparency and disclosure** in a consistent fashion across the EU are widely recognized as important factors in fostering market and supervisory discipline and thus promote trust in the sector, as they shine a light on pockets of uncertainty which cast shadows on the sector more broadly. Since their inception, the EBA and ESMA have thus actively contributed to consistent supervisory and financial reporting disclosures across the EU. In November 2013, ESMA published a report on the review of the accounting practices of a sample of European banks containing an assessment of the quality and comparability of disclosures and recommendations aimed at improving the transparency of financial reporting.

Efforts for enhanced transparency and disclosure were also visible in the EBA 2011 EU-wide Stress Test disclosure, followed by the recapitalisation exercise of European banks in 2011-2012, and continued with the December 2013 transparency exercise. In 2014, the EBA will conduct, in coordination with the ECB, another EU-wide Stress Test and will aim to ensure consistency and comparability for the outcomes across all participating banks based on a common methodology, scenarios, and accompanied by a consistent disclosure exercise.

The **profitability** and income of EU banks have continued to face significant challenges which are unlikely to dissipate in the near future, given the still subdued economic outlook in many regions. Average return on equity for large European banks is on a decreasing trend throughout 2013 (at 6.3% in Q3/2013). Low profitability not only hampers an important generic capital growth, but also increases challenges to raise equity. Furthermore, the low-interest-rate environment continues to create pressure on bank net interest margins as a permanent and stable source of earnings. Increasing levels of loan-loss provisions and higher credit costs in a context of low growth and declining lending volumes are further important drivers of weak

earnings. Whereas banks were able to further reduce operating costs, the recent rise of costs from misconduct fines and settlements has offset cost containing efforts in some banks. Average cost income ratios for large EU banks show no sign of improvements, and subdued income has been the main driver of an increasing average cost income ratio.

Figure 2: Cost/income



Source: EBA KRI

Supervisors should maintain their focus on analysing banks’ business models to assess sustainability, business mixes, management strength and strategy, and, inter alia, banks’ profit and funding models, and take action where long-term sustainability is in doubt.

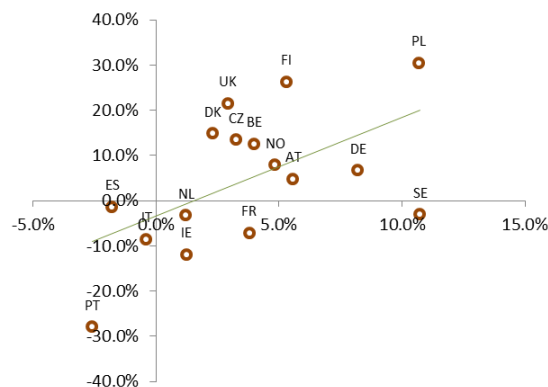
Bank funding conditions have continued to follow an improving trend with substantial debt issuing activity at favourable pricing by European banks of different sizes, including in financially stressed countries, which particularly benefitted from a benign market sentiment. At the same time, banks have further reduced their reliance on central bank funding. By January 2014, banks in the euro area had repaid EUR 446 billion of the two longer-term refinancing operations (LTRO) from a total of EUR 1.019 billion allotted by the ECB in December 2011 and February 2012. Further weaning off of central bank, nevertheless, remains a challenge for some banks. Deposits have continued a trend of further slow growth in most regions, and the weight of deposits in banks’ funding mixes is increasing and contributes to the resilient funding structures. However, continued supervisory attention of potential behavioural changes for deposits not covered by deposit guarantee schemes remains important, as deposits may become more volatile with the introduction of new resolution and bail-in requirements.

Growing investor appetite towards European banks’ debt and equity in the context of a benign market sentiment often reflects recognition of improving fundamentals of individual banks. However, some dislocation can be observed between benign market sentiment for bank debt and equity on the one hand, and between continued downside risks for banks with weaker balance sheets or operating in subdued economic environments on the other hand. There are indications that favourable market pricing for debt and equity, and compressed risk premia can, to a notable extent, be attributed to growing investor risk appetite in **search for yield in a prolonged low-interest-rate environment**.

1.2 INSURANCE SECTOR: DECLINING PREMIUM GROWTH

With several years of weak GDP growth in Europe and globally, life and non-life insurers continue to report **subdued sales** mainly as a consequence of reduced consumer purchasing power. The pressure on the sale of insurance policies has been particularly pronounced in countries where household wealth and income has been reduced. Figure 3 illustrates this development between 2009 and 2012 for life and non-life companies.

Figure 3: Change in gross written premiums in life and non-life (y-axis, in %) vs. nominal GDP (x-axis, in %) between 2009 and 2012



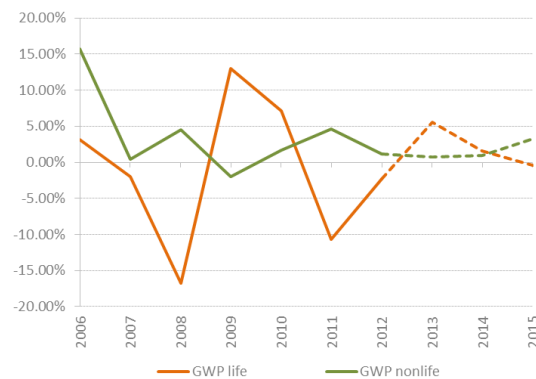
Source: EIOPA, EUROSTAT

Note: Graph covers countries with GWP in life and non-life (incl. composites) of at least EUR 5 billion

Growth in the insurance market is strongly connected with economic growth, and recent signs of a gradual recovery in Europe are positive for the European insurance sector. A majority of large European life insurers reported positive premium growth in Q3 2013. Although premium growth is welcome, coinciding signs of decreasing own funds in some jurisdictions illustrate that increases in insurance volumes cannot be seen in isolation when assessing the financial resilience of the insurance sector.

EIOPA has estimated a simple model linking GDP growth and unemployment to contemporaneous premium growth. The model shows that the effect of those two factors on insurance volumes differs for life and non-life insurance. In particular, while non-life insurance might benefit from gradual economic recovery (see Figure 6), market growth in life insurance will remain somewhat subdued due to high unemployment in the next three years. Moreover, non-life insurance benefits from compulsory insurance products for non-life business, such as car and accident insurance. There is, however, naturally a risk of a much more pronounced decline in life insurance and weaker recovery in non-life insurance if growth does not take a proper hold in Europe. Moreover, changes in the tax regimes of some European countries might have a further significant effect on future growth in premiums; this effect is not captured by the projection. Such effects may come from general tax increases to reduce public sector deficits or increased taxation on premiums or reduced tax incentives for long-term life and savings products.

Figure 6: GWP projection for euro zone

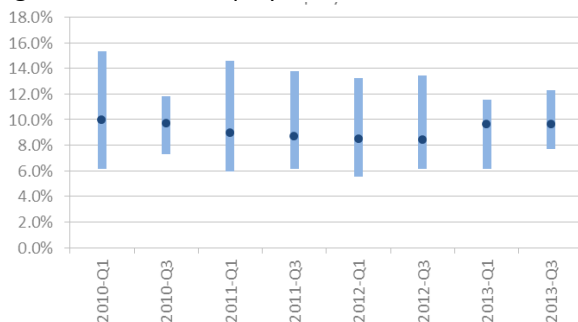


Source: EIOPA and ECB survey of professional forecasters

Note: Dashed lines represent projection using macro scenario based on ECB SPF.

Despite negative pressures on premium growth over the last few years, overall profitability figures remain reasonably robust. The largest European insurers are still reporting quite strong return on equity (ROE), (see Figure 4), in particular in non-life. This is due to steps already taken to improve operational efficiency by various cost-cutting measures. Improvements in efficiency have prevented a decline in return on assets (ROA) in the life sector as well. However, this implies that the scope for supporting earning levels from future efficiency gains is less pronounced.

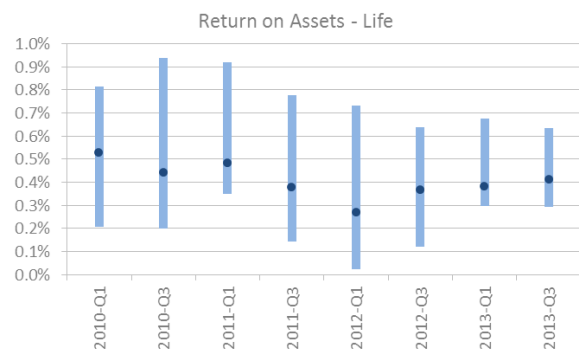
Figure 4: Return on equity, life and non-life



Source: EIOPA

Note: Sample based on 30 large insurance groups in EU and Switzerland

Figure 5: Return on assets, life



Source: EIOPA

Note: Sample based on 30 large insurance groups in EU and Switzerland

1.3 FINANCIAL MARKETS: DECREASING PRICE FOR RISK

Tensions in EU financial markets further eased during 4Q 2013. This was associated with the combination of improved macroeconomic prospects for some EU economies, easing pressure on EU sovereign debt markets, and continuing monetary policy and liquidity support measures. Underlying vulnerabilities, nevertheless, remained high with increased signs of search-for-yield behaviour, potentially related to the ongoing low interest-rate environment. Volatility indicators remained broadly stable at an elevated level.

In corporate credit markets, the spread between investment-grade and speculative-grade bonds fell to its lowest level since 2008 (see Figure 7) adding to concerns about potential valuation risks and related imbalances in investment positions. The persistent decline in corporate credit spreads to pre-crisis levels is consistent with falling default rates at the aggregate level. However, one cannot exclude the possibility that low spreads are driving low default rates rather than vice versa. An examination of the relationship between euro area real GDP growth and euro area expected corporate default rates reveals a disconnect from 2012 onwards. When the euro area was in recession and non-performing loans were rising, corporate default rates were decreasing (see Figure 8). A sharp adjustment in corporate bond markets could be amplified not only by rising corporate defaults, but also by thin market liquidity. Banks have significantly reduced their holdings of corporate bonds over the crisis period and respondents to the ECB survey on credit terms and conditions in euro-denominated securities financing and OTC derivatives markets (SESFOD) expect a further decline in market making activity in 2014 due to balance sheet and capital constraints as well as the need to comply with regulation, both already implemented and currently planned.

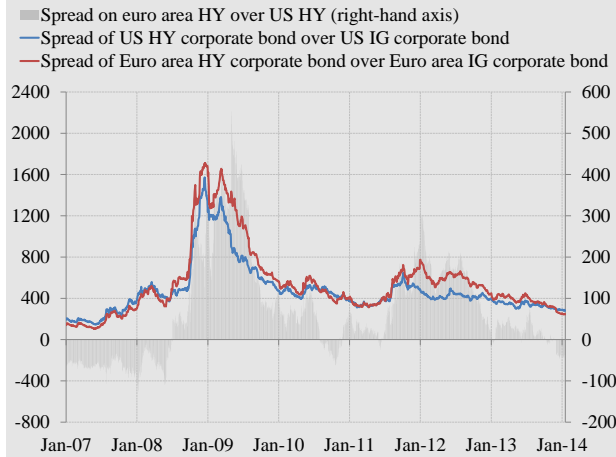
Developments in government bond markets have also been characterised by a decline in credit spreads, driven by a broad based compression of yields in the riskier segments and the confidence of investors in the success of the ongoing fiscal adjustment and economic reforms; yields on ten-year Spanish and Portuguese bonds fell to levels last observed in 2010, and the yield on the Irish five-year government bond declined below that of the five-year US Treasury (see Figure 9). Outside the euro area, however, sovereign bond spreads for some EU Member States experienced fluctuations or upward trends since May 2013 and additionally widened since mid-January 2014, suffering from spill-overs from the ongoing emerging market turmoil. Meanwhile, broad European equity indexes continued to advance, driven by an expansion in P/E multiples rather than earnings growth, while the banking sector outperformed among the broad equity indices.

Quantity-based indicators also indicated increased demand for risky European assets. Data-on-portfolio flows show, since January 2013, strong inflows to European equity and bond funds located in stressed euro area countries and ETF funds targeting high-yield segments of the bond market (see Figure 10). In particular, the fund industry of the entire EU experienced strong inflows to bond funds during the year 2012, while inflows remained more moderate since May 2013. Exceptionally strong demand was recorded at January auctions of Irish and Spanish government bonds and an increased presence of foreign investors was noted. Issuance of speculative grade non-financial corporate debt remained at relatively high levels in the second half of 2013, while the share of subordinated bank debt issuance in total bank debt issuance from July 2013 to January 2014 reached pre-crisis levels.

Regarding market volatility, equity indices measures continued to narrow. This had the effect of reducing value-at-risk (VaR) measures and capital requirements for some trading book activities, and lowering the costs of the acceptance of additional risks. However VaR risk measures in bond markets continue to be elevated and the needs for liquidity buffers remain substantial, especially in an environment of uncertainties about the course of policy rates. In addition, historical time series for equity volatility indices are characterised by prolonged declines punctuated by sharp jumps in volatility, as also observed for one incident in late 2013. An eventual future occurrence of such volatility jumps could trigger VaR shocks, especially if the volatility in bond markets and the concerns about misvaluation in asset markets continue to increase.

Figure 7: Spread between investment-grade and speculative-grade European corporate bonds

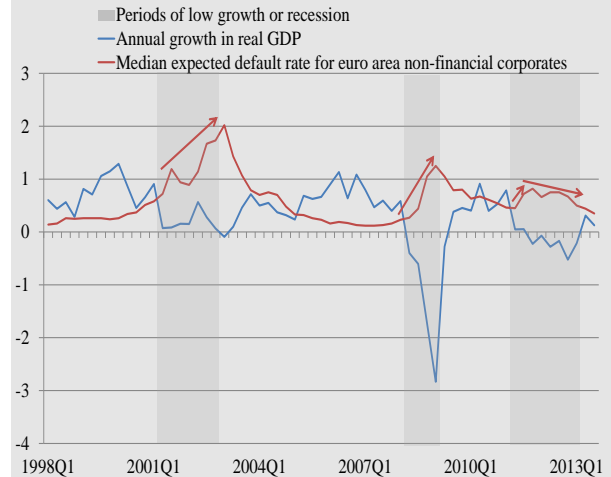
(Jan. 2013 – Jan. 2014; 100=Jan. 2013)



Sources: Bank of America Merrill Lynch, Thomson Reuters and ECB calculations.

Figure 8: Expected default rates for euro area non-financial corporates and real euro area GDP growth

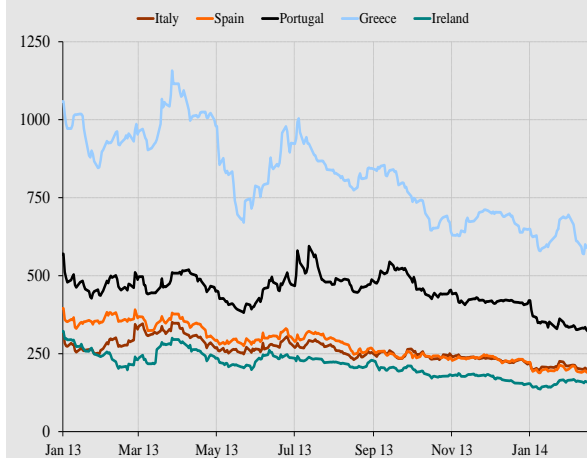
(Q1 1998 to Q4 2013; percentages)



Sources: ECB and ECB calculations.

Figure 9: Spread between yields on selected ten-year euro area government bonds and ten-year German government bonds

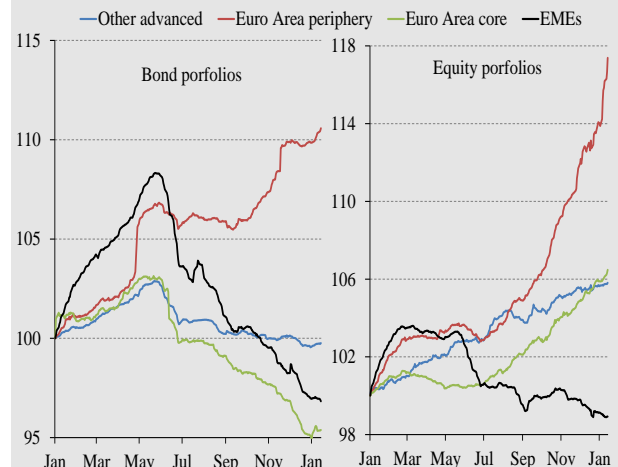
(Jan. 2013 – Feb. 2014; basis points)



Sources: Bloomberg and ECB calculations.

Figure 10: Cumulated investor flows into equity markets by region

(Jan. 2013 – Jan. 2014; 100=Jan. 2013)



Sources: EPFR and ECB calculations.

2 RISKS ASSOCIATED WITH SEARCH FOR YIELD IN A PROTRACTED LOW-INTEREST-RATE ENVIRONMENT

After a positive, but not very dynamic first half of 2013, financial markets experienced strong rallies towards the end of 2013. Sovereign and corporate bond spreads as well as spreads on asset backed securities in the EU continued to narrow, while yields on the lower limit of the risk spectrum tended to remain stable.

Figure 11: Financial Markets evolution

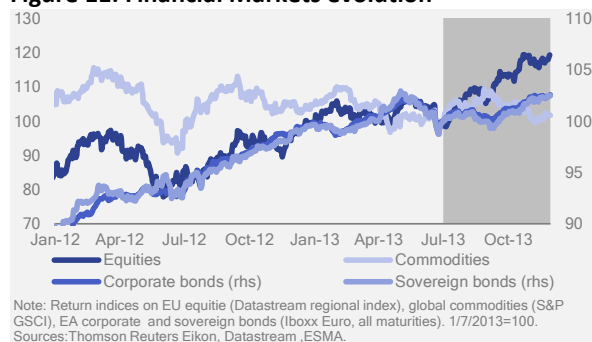
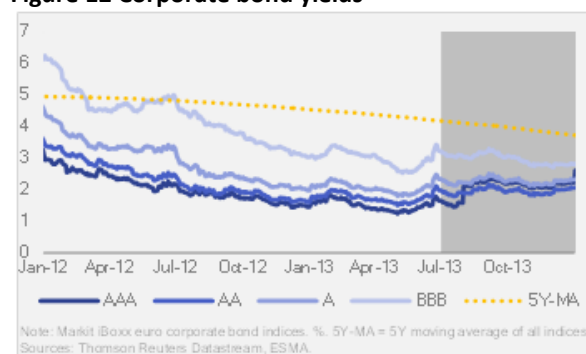


Figure 12 Corporate bond yields



Due to the continued persistence of the low-interest-rate environment, the portfolio return expectations of many market participants and retail clients remain significantly above current risk-free interest rates, whether, similar to the insurance industry, driven by contractual liabilities or by stakeholder expectations. Low interest rates incentivize market participants to **seek higher yields in various ways**, including investing in less liquid, riskier and later maturing assets and taking risks with off-balance-sheet investment vehicles. Concerning the latter, regulatory action, such as EMIR, SSR, CRD IV and CRR, has contributed to a successful moderation, as demonstrated by reductions in the market value of outstanding OTC derivative contracts, and to the decreasing volume of credit default swaps, in particular for those on sovereign bonds.

A continuation of the currently strong market performance may not be justified by fundamentals, especially given the moderate macroeconomic and fiscal prospects. Demand is still hampered by uncertainties around economic recovery and the distributional side effects of the low-interest-rate environment (e.g. the transfer of purchasing power from households to sovereigns and non-financial corporates). This decoupling of investment flows and fundamentals would then lead to a less efficient capital allocation. It would also foster the tendencies for asset overvaluation and the existent deficiencies in balance sheets and solvencies of borrowers.

A reallocation of capital from the loan book of the banking system to the fund industry may have beneficial effects for the financing of the economy. At the same time this implies a shift of risks in the financial system. This shift requires continued monitoring, especially in the case where flows are allocated to **shadow banking** activities which currently benefit the economy by being among the main drivers of financial innovation, but which also impose new risks on the economy.

Persisting low interest rates are increasingly putting pressure on the **business model sustainability of some banks**, which find overall net interest margins and interest income continuously under pressure, contributing to profitability pressures and subdued earnings. In a low-interest environment, low net interest margins are typically not being matched by a full repricing of assets. The attempts of banks to increase lending rates may prove challenging and even insufficient for addressing a low-interest-rate environment, given the low overall

demand for new lending as well as limited customer capacity to bear higher lending rates in a subdued economic environment. At the same time, customer deposits are earning at least non-negative interest rates resulting in a tightening margin between deposits and assets. The low-interest-rate environment also continues to provide **incentives for debt forbearance** and contributes to delays in de-risking efforts and balance sheet repair. Furthermore, low yields in a low-rate-environment incentivise a search-for-yield behavior, not least of banks, and provide incentives for banks to take increased risk, move into higher risk business and apply lower lending standards.

So far, the **search-for-yield** is mainly a phenomenon in wholesale markets, and has **not reached retail markets**, in which risk aversion remains the dominant investment rationale, **on a grand scale**. This is reflected in the fact that **deposits** remain the most important asset class in household portfolios and experience positive growth despite booming asset prices and low rates of return on EU representative retail investor portfolios which include deposits as an important component. Stability in deposits implies available funding to a deleveraging banking system. At the same time, an increased dependency on a funding resource exposed to instability, in the case of sudden increase in inflation rates, might add to the sector's exposure to liquidity risks.

On the other hand, some **structured retail products** offered rates of return below the risk-free interest rate. Accordingly, both sales and outstanding volumes of structured retail products continued to decrease in 2013. Increased regulatory and supervisory attention at EU and national level may have slowed down the market diffusion of this type of products.

According to EIOPA's regular bottom-up surveys among national supervisors, the risks stemming from a prolonged period of low interest rates are the **most important risks that the insurance and pension funds sectors** are currently facing. These risks have been identified as highest both in terms of probability of materialisation and in terms of impact (see Figures 13 and 14). Although the continued period of low interest rates is challenging for life insurers who struggle to design profitable products that consumers want at an affordable price, non-life companies are also exposed to interest rate risk.

Figure 13: Risk assessment for the insurance sector

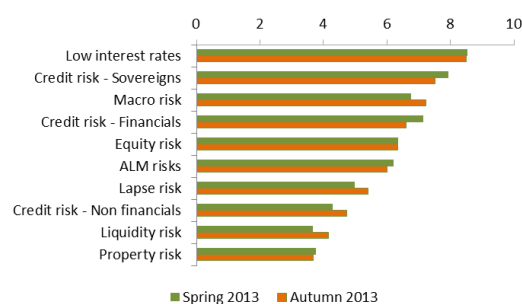
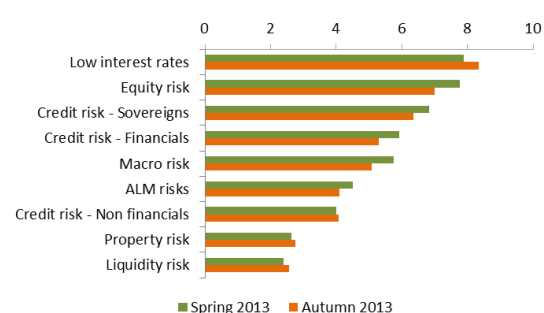


Figure 14: Risk assessment for the pension funds sector



Source: EIOPA

Note: Risks are ranked according to probability of materialisation (from 1 indicating low probability to 4 indicating high probability) and impact (1 indicating low impact and 4 indicating high impact). The figure shows the aggregation (i.e. probability x impact) of the average scores assigned to each risk.

In response to low interest rates, **life insurers increasingly continue to pull back on providing long-term investment guarantees to consumers**. In the short term, this reduces the attractiveness of some products and constrains sales. Many insurers are lowering guaranteed returns, such as dialling back guarantees on sales of traditional products that provide high guaranteed annual returns. While decreasing the number of guaranteed

products, many insurers now increasingly focus on unit-linked products and shift investment risks to consumers. In return these kinds of products are alleged to provide higher margins if equity markets perform favourably. Some of these steps are necessary to ensure continued solvency and profitability in the insurance sector. However, in some cases they may introduce certain consumer protection issues and raise risks related to deteriorating conduct of business.

It is essential that **supervisors closely monitor the risks posed by future interest rate developments to the insurance sector**. EIOPA, in consultation with the ESRB and the ECB, is currently preparing two consistent macroeconomic scenarios for the 2014 insurance stress testing exercise. These scenarios are intended to help identify the main sources of risk including the quantification of the impact of continued low interest rates, macro risks, equity risk, and contagion risks from exposure to sovereigns, financial institutions and corporates. Under these scenarios, the global environment is assumed to destabilise, leading to a drop in the corporate or equity market values, thereby triggering a reaction with renewed tensions in the EU sovereign bond markets and decreasing property values. It is assumed to start from an impulse in either the EU equity market or the non-financial corporate bond sector, while risk-free interest rates remain at exceptionally low levels. In addition, single-factor insurance stress tests are being developed by EIOPA to assess the impact of insurance-specific risks, such as natural catastrophes and longevity risk. Moreover, to test the prolonged period of low-yield environment in more detail, two low-yield satellite scenarios are being prepared by EIOPA as well. Given the importance of such scenarios, supervisors should also collect information on how insurers would react in order to restore a capital shortfall relative to SCR and maintain profitability under the different scenarios.

3 RISKS FROM A SUDDEN INCREASE IN GLOBAL BOND YIELDS

As the search-for-yield behaviour intensifies so do **concerns regarding the build-up of imbalances and the possibility of a fast and disorderly unwinding of this behaviour**. Global risk appetite remains fragile and highly sensitive to developments in EME, particularly China, while continued positive investor sentiment towards European markets, particularly the more stressed and high-yield segments, hinges on a nascent and uncertain euro area recovery supporting debt sustainability.

The risk of a sudden jump in global bond yields and credit spreads remains elevated. As momentum builds in the US economy, so does the risk of a sharp adjustment in market expectations regarding the timing of future policy rate increases by the Federal Reserve, as well as the pace and timing of further tapering. On the other hand, within Europe continued buoyancy in the bond markets of stressed countries builds on positive expectations concerning the macroeconomic and fiscal development in associated Member States, which may still be exposed to uncertainties. However, market reactions following the first signs of a potential tapering by the Fed in May last year show that EU financial markets are vulnerable to a sudden repricing of risk and a widening of the term premium.

Historically, low yields indicate that there is room for **sudden rate ‘snapbacks’** (including in euro area non-financial corporate bond markets). Such snapbacks could affect adversely market sentiment and capital flows, especially against the backdrop of a still fragile economic recovery. This could further exacerbate the impact of a **risk repricing**. At the same time, the protracted search for yield tends to raise sensitivity to rate changes, as it leads to a decline in corporate bond asset quality and to a lengthening in bond portfolio duration. A repricing of risks could hit institutional investors, making its impact less predictable. Funds, insurance and pension funds have progressively increased their exposure to corporate bond markets, to some extent at the expense of banks.

Signs of scarcity in the provision of **liquidity** by market makers could further exacerbate the impact of such a repricing. Evidence of a reduction in the corporate bond inventories of market makers and liquidity in the euro area sovereign bond markets also showed some sensitivity to the May-June turmoil and lower participation of money market funds in repo markets.

Other things being equal, rises in interest rates would have a negative impact on **households’ financial positions** through rapidly declining prices in equity and bond markets, and rising costs of mortgage loans. Similarly, the financial positions of sovereigns and corporates would suffer due to higher debt services. Any associated negative demand effects would contribute to macroeconomic risks, while in particular higher debt service costs might negatively impact on default rates and incentives for orderly repayment, potentially contributing to higher rates of impaired assets in the portfolio of lenders.

Also, a persistent trend of EU **debt instruments towards downgrading** during the first half of 2013, even if slowed down by decreasing default rates, and slowly improving macroeconomic conditions reveal that risks for sudden changes in the yield structure remain present. Market reverberations experienced in June 2013 and recent materializations of changes in the term structure of yields, both abroad and in the EU, demonstrated the importance of those risks.

In addition, notwithstanding internationally differing macroeconomic cycles, changes in term structures generated by modifications of interest rate environments lacking international coordination are likely to go along with higher valuation, funding and credit risks due to increased volatilities of exchange rates and cross-border capital flows.

Banks and their supervisors should take well into account the risks of a sudden reversal of interest rates as well. Some initial reactions to renewed global EME turmoil, as observed for example in FX markets, have indicated that implications on global interest rates can be substantial, and knock-on effects for European market rates with potential sudden increases and negative implications for banks cannot be ruled out.

Insurers also face the risks from rapid increases in bond yields as the value of their fixed-income investments would fall on a market value basis. If bond yields increase due to increases in the 'risk-free rate' and appropriate asset-liability management policies are in place, assets and liabilities will change in a similar manner (although not necessarily completely offsetting each other). However, if the change in the bond yield is caused by a change in the spreads, insurers may face declining asset valuations, but unchanged liabilities and, therefore, a worsened capital position. In Solvency II, several measures are introduced (e.g. the matching adjustment and volatility balancer) to balance such effects for long-term business. Additionally, if interest rates rise fast, the effect on life insurance companies could be even more harmful if their products become unattractive in comparison to new products combining life, pension or savings components. Life insurers could be exposed to a large number of policyholders exercising embedded surrender options, forcing some insurers to liquidate their fixed-income holdings and realise large capital losses.

Finally, as **fixed-income funds** gain weight within the financial intermediation chain, any adverse events that lead to rising interest rate levels pose significant risks. Bond funds engage in maturity transformation and securities lending activities and belong, therefore, to the core of the financial system. Between 2011 and 2013 their exposure to liquidity risks increased also driven by falling credit ratings in fixed-income products. In the same time the average maturity of assets managed by EU bond funds fell from 8.2 to 7.9 years. Thus, despite a reduction, the maturity of fixed-income funds' assets remains substantially above the maturity of their fund shares, leaving the sector with a substantial amount of credit risks. In addition, the entire fund industry is exposed to valuation risks, as the potential of the materialization of price corrections for equities and fixed-income products adds to the sensitivity of the fund sector's performance and assets under management (AuM) to changes in interest rate levels.

Thus, it is important that **risks of a sudden jump in global bond yields and of credit spreads** be adequately reflected in the stress test scenarios to be conducted, namely the direct effects from increased funding costs and declining asset valuations.

4 RISKS STEMMING FROM GLOBAL EMERGING MARKETS ECONOMIES

Developments in recent months highlight **increasing risks stemming from emerging market economies (EME)**, which could affect the European financial system. Risks include political uncertainties (e.g. Turkey and Ukraine), economic risks (e.g. concerns of a substantial slowdown of activity in China), and foreign exchange risks (e.g. in Argentina and South Africa).

After a prolonged period of strong portfolio inflows, EME are facing a transition to more volatile external conditions. Low growth, low rates and unconventional monetary policies in advanced economies have boosted inflows to the bond markets of EME. The risks stemming from EME can be a symptom of a global shock with a much wider impact and repercussions in other parts of the global economy, with a possible need for reassessments of monetary policy and financial stability stances in Europe.

Instability in global EME could propagate to Europe in the future through several transmission channels. **Direct financial linkages through cross-border exposures of some banks** appear to be one of the key contagion channels. Until now profits generated by these banks in EME more than compensated for the losses suffered in Europe. Thus, a negative shock in EME could significantly impact the balance sheets and profits of these banks. Also **direct financial market linkages** could have a material impact. The correlation between changes in government bond yields in the euro area/EU and EME has recently risen to historical highs, suggesting that EME shocks could also be transmitted to Europe through global confidence effects.

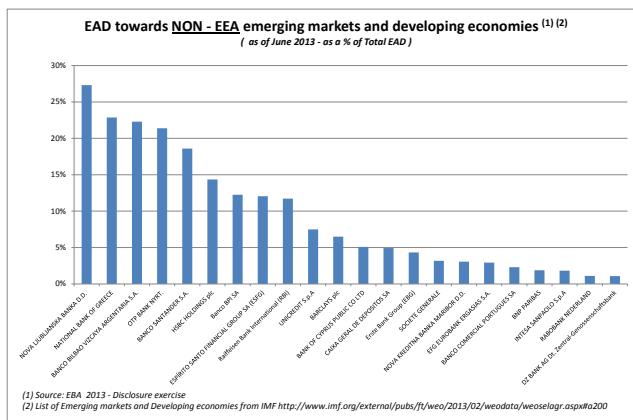
On the other hand, **indirect financial linkages through common exposures** are expected to be limited at this stage³. Significant asset quality deterioration in Chinese banks is not likely to have a material direct impact on most EU banks although there could also be an indirect impact via weakening U.S. and Japanese banks or via shrinking cross-border lending to the region thereby weakening the demand for European exports.

Direct real linkages through negative growth shocks could, due to rising interest rates, include negative impacts on EME domestic demand and may affect European exports. Although the overall effect on EU may be small, for some countries where economic growth is highly dependent on exports, a reduction in global demand might be relevant. Additionally, **indirect real linkages through trade channels and commodity prices** could have a targeted impact on specific sectors. Direct real linkages may go along with higher capital inflows which either could boost economic activity, if allocated to real investments, or result in an upward pressure on the euro's exchange rates, potentially adding to deflationary tendencies within the euro area.

Beyond direct and indirect linkages, prolonged instability in EME is leading to **more vulnerable financial markets**. Historic experience demonstrates that EME uncertainties often coincide with heightened financial market volatility, including 'overshooting' on indices. EME instability could also lead to abrupt **reversals of international capital flows**, with adverse implications for financial intermediaries and economies.

³ The slowdown in economic growth accompanied by the increase in interest rates might lead to corrections in real asset prices, namely real estate, affecting financial exposures to EME.

Figure 15 – Exposure at default towards non-EEA EME and developing economies



Some national banking systems have substantial claims on EME, e.g. Austria, France, Germany, Spain, Greece and the UK. Claims can be high both in nominal values and relative to total capital in respective banking systems, although exposure varies significantly between countries. The EBA transparency exercise has revealed some elevated exposures at default (EAD) in some banks towards EME.

Also, some European financial institutions attain notable shares of their profits from operations in EME, which has offset lower profitability in domestic markets experiencing financial stress. The EBA exercise also indicated heightened default rates of exposures against some emerging markets, making the banks concerned vulnerable to possible further turmoil in emerging market economies, and specific banks in more exposed banking systems can be vulnerable to adverse trends in emerging markets. **Some initial knock-on implications**, such as rising CDS spreads and falling equity prices, could be observed for some banks with heightened claims towards or operations in EME following January turmoil in some of these markets. Furthermore, sustained vulnerabilities in EME could lead to further adverse knock-on implications in banks with weaker market perceptions even where exposure to EME is limited.

The risk of decreasing profitability in some EMEs comes in addition to already weak revenues coming from the EU area. Restructuring and cost cutting practices, as the ones put in place in core EU markets, is one mitigation measure that could be fostered.

Figure 16: CDS spreads on selected EME

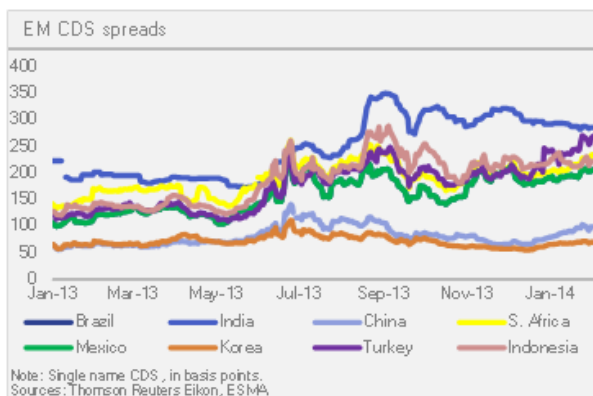
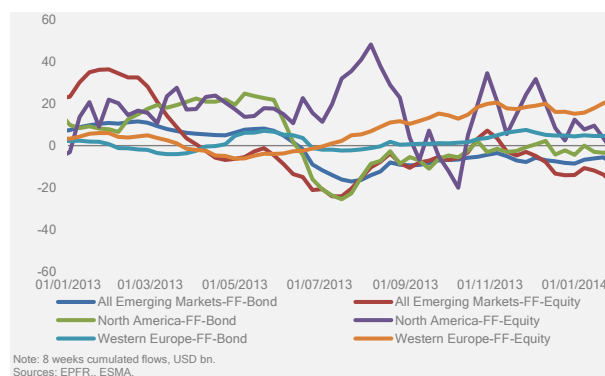


Figure 17: Fund Flows



Since 2Q 2013, **investment funds** with a regional focus on emerging markets experienced a period of continued capital outflows. Simultaneously, CDS spreads on EME entities rose considerably. Both phenomena indicate increased risks associated with investments in EME markets, which were reinforced in early 2014 by depreciations of the respective currencies. The substantial exposure of EU G-SIFIs to some of these CDS markets indicates that risk might be possibly transmitted via both the direct and indirect channels discussed above.

In the insurance sector, low growth in insurance volumes in Europe has provided, over the last years, incentives for insurers to look to EME for external growth. Several large European insurers have been looking for new sources of revenues in Latin America and Asia. Such a development poses new challenges in terms of risk management, new product developments and group supervision.

5 RISKS FROM DETERIORATING CONDUCT OF BUSINESS

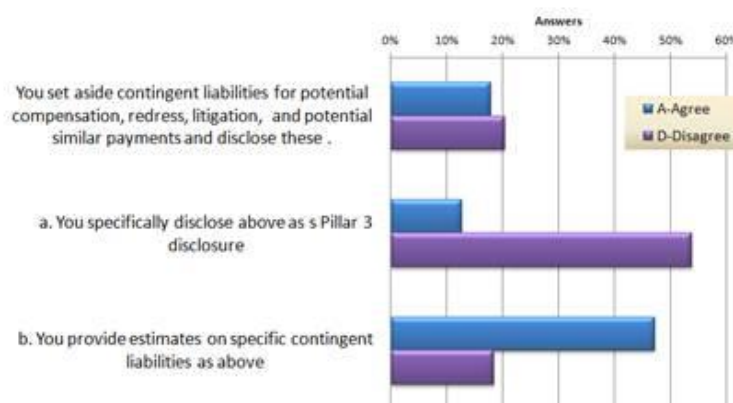
Increasing numbers of detrimental business practices observed in the EU financial sector have led to a growing sensitivity regarding conduct-of-business issues. Not only have these issues adversely impacted on the institutions involved in the recent past, but they also increasingly affect consumer confidence in financial institutions and in the financial system as a whole.

The nature, types and extent of identified or alleged misconduct has expanded recently. For example, detrimental business practises include failures with regard to rate benchmark setting processes, inadequate oversight arrangements by product manufacturers, alleged misselling of US mortgage bonds, retail misconduct such as misselling products and inadequate complaint handling, suspected manipulation of markets for credit default swaps and in foreign exchange trading business, legal probes against senior management, conflicts of interests such as the inadequate promotion of self-placements, violation of anti-money laundering rules, issues around imperfect competition in some market segments, and more.

Conduct issues have been highlighted in Europe through the launch, over the past few years, of enhanced consumer protection measures, including measures to strengthen corporate governance, aimed at ensuring that financial institutions better serve the needs of their customers and strengthening safety nets. These include the reviews of the MiFID and the Insurance Mediation Directive, rules on deposit protection and investor compensation, the cross-sectoral regulatory initiative on retail investment products (often known as packaged retail investment products or PRIIPs) aimed at improving and harmonizing product disclosures through a Key Information Document, and rules to strengthen conduct of business in the asset management industry.

Amounts of materialised and potential **redress costs and settlement payments are increasing** substantially affecting balance sheet provisions and the profitability of the institutions concerned. An EBA survey from October 2013 showed that since the financial year 2007/8 40% of the participating large cross-border banks each has paid out in the form of compensation, redress and similar payments amounts of over EUR 100 million. 16% of the respondents have paid over EUR 1 billion. There are doubts whether related risks have been adequately provisioned for and whether provisioning is adequately disclosed. In the EBA survey among large cross-border banks, only 18% of the respondents indicated that they set aside and disclose contingent liabilities for potential compensation, redress, litigation and similar payments.

Figure 18: Contingent liabilities set aside for conduct risks and disclosure



Source: EBA December 2013 Risk Assessment Report

There is still room for **improvement for the disclosure of related risks** often associated with challenges to quantify aggregated redress costs. Such challenges are mainly associated with the accounting treatment of actual and potential redress costs, which is not always consistent between institutions even when facing similar risks. Such risk disclosure is primarily the responsibility of the institutions themselves. **Auditors and supervisors should also monitor if appropriate provisioning for conduct risk has been made and challenge situations where non-provisioning for related risks is poorly substantiated.**

The rising scope and number of detrimental incidents indicate that many institutions should enhance **risk management functions and compliance proceedings**, as well as risk appetite frameworks and risk cultures. Institutional governance arrangements often fall short of identifying conduct of business concerns. For example, there often is no internal definition of conduct risks, and most risk models applied in institutions fail to capture conduct risks. It is important to maintain appropriate supervisory pressure for improvements to be made in the management of conduct-related issues. Supervisors are also well advised to reach a better understanding of potential redress issues in order to assess whether adequate contingency reserves for legal or reputational risks are being made.

A number of existing legislative provisions are in place across financial sectors aimed at protecting the interest of consumers in their dealings with financial intermediaries and institutions, and it is important that intermediaries understand the importance of their proper application, not least in efforts to restore lost confidence.

Also important are **further educational efforts to improve the financial literacy of consumers**. When asked about the most prevalent risk for retail customers, the majority of respondents of an EBA survey from October 2013 conducted among large cross-border banks and supervisors specified a lack of knowledge. Beyond efforts to improve financial literacy, consumer access to independent financial advice is equally important. With respect to the securities sector, the review of the MiFID will increase the regulatory and supervisory tools aimed at protecting the clients of credit institutions and investment firms. Existing provisions on investment advice, suitability, disclosure, conflicts of interest, and organisational requirements will be strengthened. The new legislative texts at European level, MiFID, IMD, and PRIIPS, all contain provisions aimed at improving product transparency for consumers and protecting them from buying products they do not understand.

The responsibility of management bodies for the protection of investors will be emphasized, rules on safeguarding of clients assets will be improved and a new regulatory approach will add a focus on product governance in the firm to the traditional focus on point-of-sale conduct of business rules and organisational requirements. New powers will be granted to supervisors. The ability of intermediaries to build a culture genuinely oriented to serve the interest of investors, together with the effective implementation and enforcement of the revised regulatory framework will be crucial to ensure the ability to deliver on the overarching investor protection objectives of the new rules. In addition, in the securities field, ESMA issued in February 2014 an opinion on practices to be observed by investment firms when selling complex financial products to investors. The concerns relate mainly to the suitability and appropriateness of complex products that are increasingly within the grasp of retail investors. The opinion sets out ESMA's minimum expectations with respect to the conduct of firms when selling complex products to retail investors.

In the insurance and occupational pension funds sectors, a practice of exchanging existing policies for new products that offer similar benefits but lower guarantees has been observed in a number of countries. While possibly justified as a measure to mitigate the impact of the low-interest-rate environment, such practices may also potentially have a disproportionately strong impact on consumers. EIOPA has been raising awareness

about this issue and the need for a coordinated supervisory response. Furthermore, NCAs in the respective countries where practices such as the ones described above have occurred, have taken different steps to prevent consumer detriment. For example, they have provided guidance on the calculation of the compensation to be provided to policy holders for the abandoned guarantees. On other occasions, the NCAs have promoted a clearer communication to consumers concerning the incentives to cancel or change their existing products.

As a conclusion, in order to mitigate **risks from deteriorating conduct of business**, institutions should enhance **risk management functions and compliance proceedings**, namely adjusting risk appetite frameworks and culture, and better integrating conduct-of-business concerns in their **governance arrangements**. Supervisors should maintain appropriate supervisory vigilance in business-conduct-related issues. Further educational efforts to improve the **financial literacy of consumers** are also important in this respect, while at the same time **regulatory initiatives** should continue to contribute to build a culture genuinely oriented to serve the interests of clients.

Box: Robustness of key interbank reference rates

The quality and continuity of key financial benchmarks in the EU remains a key concern of ESMA, EBA and national competent authorities, in particular with respect to the decline in the number of submitting banks. Confidence in interbank reference rates remains at risk, as, on the one hand, withdrawals from the respective panels have already weakened the robustness and representativeness of some panels, while on the other hand erroneous or manipulative submissions into the benchmark setting process have impaired the pricing efficiency of related financial products. If they continue further, these impacts may impair confidence on the part of benchmark users and possibly lead to a discontinuation of the affected benchmarks. Notwithstanding the recently observed slowdown in the decline of submitting banks, risks of non-viability remain elevated, in particular in the case of Euribor where a legal framework to compel submitting banks has not yet entered into force.

A widespread loss of confidence in a key financial benchmark would affect both wholesale and retail markets. It seems safe to say that a wide range of counterparties are exposed to IBOR-referenced contracts, both on the asset and liabilities side of their balance sheets. The financial sector, especially banks, asset managers, hedge funds, CCPs and other financial institutions are exposed through derivatives exposures, loans and debt securities. Non-financial corporations, governments and households are exposed through their variable loans and mortgages as well as their securities holdings. Inter-bank reference rates are also extensively used for risk management and valuation purposes by different market participants, including non-financials.

Derivatives are particularly exposed to the risk of loss of confidence in the underlying benchmark. Level and volatility in the underlying benchmark determine, to a large extent, the present value of such contracts and slight changes in the referenced index can have a large effect on the market price. By contrast, present values of loans or other cash instruments are typically less sensitive to changes in the referenced indices. Moreover, the frequency with which the rates or prices of cash contracts are adjusted is typically lower than in derivatives contracts.

There remains great uncertainty over the amount and value of contracts referenced to the critical benchmarks but also over the legal consequences of a possible permanent benchmark discontinuation. In particular, there is a risk that contracts could be frustrated if the benchmark would cease to exist, implying that the contracts would automatically be brought to an end, irrespective of the wishes of the parties. Further uncertainty exists with respect to the critical moment of non-viability of key inter-bank reference rates and the volume of contracts indirectly linked to the benchmarks, either by legal or economic ties.

Extensive reform initiatives have been undertaken by the Commission, FSB, IOSCO as well as ESMA and EBA, and national Institutions that aim to ensure high quality of the benchmark setting process and the resulting

index, while reducing the likelihood of manipulation. Initial steps addressed the most pressing governance problems at the time, when reform activities were still under discussion and a new legal framework for benchmarks in the EU had not been proposed. Benchmark manipulation was addressed, inter alia, by means of amendments to the Market Abuse Directive and Regulation (MAR/CSMAD). Current reform efforts focus on establishing a new legal framework for benchmarks in the EU and accompanying a wider reform of global interbank reference rates at FSB level, which may also imply addressing the issues related to the transition from existing to new benchmarks in a non-disruptive manner.

Policy responses to benchmark risks acknowledge the vast amount of outstanding contracts referenced to key benchmarks and the general lack in contingency planning around their use. Ensuring a maximum level of quality benchmarks and sustaining their stability is a vital responsibility of benchmark administrators and submitters. Reforms initiated by EU and international public authorities aim to encourage these efforts.

6 RISKS FROM FINANCIAL MARKET INFRASTRUCTURES AND TRADING VENUES

Financial Market Infrastructures (FMIs) and trading venues are increasing in prominence, notably in view of new FMI regulations — such as EMIR — or trading *glitches*, such as the August 2013 clustering of some high-profile events in non-EU markets. Indeed, competitive forces are reshaping the FMI sector's structure due to the interaction between:

- economies of scale and scope;
- technological innovation, including high-frequency-trading (HFT);
- regulatory change and public sector initiatives, including those accommodating the completion of the common market and those promoting transparency, competition, efficiency and resilience.

In line with the changing environment and the adapting nature of FMIs, sector-related risks are evolving. The distribution, nature and impact of risks vary considerably across FMIs, including systemic and too-big-to-fail considerations, which raise the importance of the EU work on recovery and resolution frameworks (RRF) for FMIs. These risks often differ from those related to banks, with FMIs typically not using debt-based leverage, even though some have banking licenses. Of particular yet difficult to quantify relevance are risks that can transmit via interoperability arrangements between FMIs or exposure to common participants.

Trading Venues and Exchanges

Non-EU trading venues received some unwelcome attention in recent months, notably in August 2013, as operational issues, including IT-related *glitches* and human errors, gave rise to trading blackouts.⁴ While human error, such as fat-finger errors, can have a significant impact on markets, technological innovations have the potential both to promote and negatively affect financial stability; the emergence of high-frequency trading (HFT) or the establishment of multi-lateral trading facilities (MTF) are developments that can reshape risk-profiles. MTF may temper systemic risk related to a local exchange as they generate a degree of redundancy in the system while also fostering greater competition and price determination across the single market. Of course, such shifts will likely result in changes in the conduct — and potentially risk-profiles — of local exchanges. On the other hand, risks associated with HFT include increased risk of sudden swings.

Central counterparties (CCPs)

CCPs are central to reforms of the global financial system, with EMIR and Dodd-Frank Act set to meet the G20 commitment to mandate central clearing of derivatives. Clearing requires a CCP to interpose between the counterparties to a trade, effectively becoming a buyer to every seller and vice versa. Underlining their systemic relevance, ECB data show that EU CCPs cleared notional volumes in excess of EUR 300 trillion in 2012. Risks faced by CCPs include credit — including counterparty and replacement cost risk — and liquidity risk. The clearing requirement implies that systemic risk is now better captured and addressed by the various applicable regulations in place. Specifically, registered CCPs must meet requirements set out in EMIR that address such risks. The supervisory responsibility for CCPs remains with the relevant NCAs. In recognition of the importance of cross-country and sector issues, however, supervisory colleges composed of relevant CAs will convene regularly for each authorised CCP. Reflecting ESMA's important role with respect to EMIR and with a view to ensuring a level playing field across the EU, ESMA will be a member of all supervisory colleges and peer-review

⁴ August 2013 witnessed a clustering of technology-related glitches in non-EU trading. Mid-August the Shanghai Stock Exchange surged on account of a fat-finger error at Everbright. On August 22, due to a 17-minute technology malfunction a US-based G-SIFI erroneously accumulated over 800 000 options contracts requiring most of the trades to be voided. Later that day, trading of all NASDAQ OMX-listed stocks and exchange-traded products had to be halted for three hours. On August 27, NASDAQ OMX experienced technological problems related to a price feed which caused renewed problems. Seasonally light activity mitigated the potential impact of these events.

national stress testing activities. In view of the systemic importance of CCPs, Union-wide supervisory stress tests of the resilience of CCPs under adverse market conditions are also mandatory. Given too-big-to-fail considerations around CCPs, robust resolution and recovery frameworks (RRF) are important — as also recommended by the BIS — and the EU is in the process of considering appropriate frameworks. Global regulatory coordination and level playing fields are critical in a world of global capital mobility, notably as regulatory arbitrage can give rise to race-to-the-bottom behaviour. Global regulatory efforts regarding CCPs remain uneven, displaying in particular some heterogeneity outside of the EU and the US.

Trade repositories (TR)

With a view to enhancing the transparency of derivatives markets, new reporting requirements are coming into effect under EMIR under which trade repositories (TRs) are tasked with keeping a record of the trades reported to them and calculating the positions that these give rise to. EMIR seeks to mitigate risks facing TRs, which are particularly of an operational and legal nature. Furthermore, the Commission's proposal for a regulation on the transparency of securities financing transactions (SFTs) requires reporting SFTs to TRs. Risks associated with TRs relate to the quality of data, notably in the initial phase of reporting and including the quality of data received by TRs, and to the risk of a breach of confidentiality, as these data contain details of contracts and counterparties, or to data losses, for instance due to operational failure. EMIR provides ESMA with the mandate for TR supervision.

Central securities depositories (CSDs) and securities settlement systems

Public sector initiatives regarding CSDs represent the final leg in EU legislators meeting their international commitments. In 2012, CSDs settled close to a EUR 1 quadrillion worth of trades every year while holding over EUR 40 trillion worth of securities in custody. Their systemic relevance is further augmented by their dominant position and interconnectedness. For instance, CSDs are typically monopolistic players in national markets. Yet, they are often horizontally integrated via cross-border links or interoperability arrangements. Further, they may provide a variety of financial market services, often extending to banking-type activities, and are often vertically integrated. The exposure of CSDs to credit or liquidity risks differs markedly from other financial institutions. For instance, where operating under standards such as delivery versus payment (DvP), their counterparty risk is limited. Therefore, it is important to ring-fence their core activities, such as notary and settlement, from non-core activities, notably bank-type. Addressing such issues and promoting competition, a new draft regulation (CSDR) is awaiting final adoption by the Council and the European Parliament in April. CSDR will include rules on CSD registration and requirements on settlement discipline. On another front, the ECB's EU settlement platform, TARGET2 Securities, should become operational over the coming year possibly reducing cross-border transaction risks by harmonising standards and settlement practices.

As such, with regards to the **risks from financial market infrastructures and trading venues**, robustness of the system is key both to failures in any of its components and to shocks from the outside, including cyber attacks or natural catastrophes. Technological advances and cross-border/global integration extend the boundaries of what is possible, allowing for enhanced efficiency but widening the potential for systemic events. **Global and cross-sector supervisory cooperation is critical** in this area in order to mitigate the consequences of extreme situations, in particular having in mind the high sector-level interconnectedness and strong capital mobility.

Box: Defining FMI risks

The dimension of FMI risks can be either systemic or non-systemic. Further, they can be characterised as:

- Operational risk, which is the risk that deficiencies or vulnerabilities in IT systems or internal processes, human errors, management failures, or disruptions resulting from external events will result in the reduction, deterioration, or breakdown of the services provided by an FMI.
- Legal risk, which can be described as the risk of the unexpected application of a law or regulation, and which is particularly prevalent in cross-border transactions, which are both rising and changing in the EU.
- General business risks, which are the risks related to the administration and operation of an FMI as a business enterprise.
- Custody and investment risk, which is the risk of loss on assets held in custody in the event of a custodian's insolvency, negligence, fraud, poor administration, or inadequate recordkeeping.
- Liquidity risk, which is the risk that a counterparty will have insufficient funds to meet its financial obligations as and when expected, although it may be able to do so in the future.
- Credit risk, where credit risk can relate to counterparty risk, principal risk, replacement-cost risk, as well as to settlement and custodial risk. Credit risk is the risk that a counterparty, whether a participant or other entity, will be unable to meet fully its financial obligations when due, or at any time in the future. FMIs and their participants may face replacement-cost risk (often associated with pre-settlement risk) and principal risk (often associated with settlement risk).

7 OPERATIONAL RISKS FROM IT INFRASTRUCTURES

The importance of information and communications technologies (ICT) for financial institutions has grown substantially over the past years with IT supporting nearly all processes or making such processes possible in the first place. As further advances in IT are made, IT systems are becoming increasingly complex and the volume of data and the degree of specialisation are growing. That in turn has significantly increased the risk of no longer being able to safely control these systems.

Concerns are growing over the increasing persistence, intensity and sophistication of information technology related operational risks, including risks of cyber incidents and/or malicious attacks to as well as accidental failures of IT systems.⁵ Risks include a broad range of IT risks, including connectivity and dependency on the Internet.

During 2013, financial institutions are reported to have been hit by cyber incidents more frequently. Attacks were allegedly targeted to exploit vulnerabilities in IT systems to access customer data, for financial gain, or to disrupt services. Banks have seen an increase in high-profile distributed denial of service (DDoS). Institutions also have to deal with attempts of espionage, disruptions of operations, and destruction of information. Redress and litigation costs as consequences of materialized cyber-related threats can also be high. Even though cyber risks are most commonly connected to the banking sector, they are also very relevant to market infrastructures and other financial market participants.

Moreover, risks are global. The International Organisation of Securities Commissions (IOSCO) and the World Federation of Exchange (WFE) found out in a recent survey that 53 % of surveyed WFE members had faced some kind of cyber incidents in the year 2012. Cyber incidents and crimes are assessed as a growing and, due to their rapid transmission throughout interconnected IT systems, potentially systemic threat⁶. In the USA, anecdotal evidence points to a surge in the sales of 'cyber insurance policies' of insurers. There are also indications of increasing demand for such policies in some European markets.

In such an environment it is important to ensure that **IT systems and related internal controls are safeguarded against adverse budgetary implications** and remain robust. While consolidation in the financial sector continues with mergers and acquisitions of institutions, interaction with legacy or heterogeneous IT systems deserves heightened attention, as particular weaknesses, such as inability to cope with volume of use, can be identified here. At the same time, there is an increasing need for IT systems to be very agile to adapt to future business and regulatory requirements. However, even the maintenance of existing infrastructures is not sufficiently addressed in some cases, and needs to rapidly adapt to new threats which are not always fully provisioned within existent budgets. Pressure to get products to markets, particularly in the mobile space, is also a source of risk as sufficient time to test before go-live dates is squeezed. Outsourced IT services or usage of dependency-on-cloud computing services also deserves attention, as well as IT security and concentration risks from hardware and software vendors.

The level of IT-security and cyber resilience⁷ in financial institution should be adequate vis-à-vis the nature and conduct of the business, and should be regularly assessed and evaluated by financial institutions and supervisors alike. **Supervisors should factor the mitigation of cyber and IT risks into regular practices and risk**

⁵ See for example Bank of England (2013): Technology and Cyber Resilience Benchmarking Report 2012

⁶ IOSCO and World Federation of Exchanges (2013): Cyber-crime, securities markets and systemic risk, Staff Working Paper: [SWP1/2013]

⁷ In this context cyber resilience encompasses IT security, information security/assurance and other security disciplines, but also incorporates the ability to continue critical operations within an acceptable timescale and/or to acceptable levels following compromise.

assessments, and institutions should strive to integrate IT security and cyber resilience (which include shutting down operations) in the risk models they apply. To this end, supervisors should aim at attaining sufficiently deep technical insights and include IT inspections with a necessary scope and depth, while institutions should strive for improved IT controls and IT audits. Moreover, the **overall resilience of market participants to cyber attacks and the robustness of business continuity plans should be improved and tested**, not least in the light of the rapid development and transformative nature of technologies.

Cyber and IT risks should be regarded as important components of operational risks, **and institutions should consider holding capital against them**. Nevertheless, holding capital should not be regarded as a substitute for the sound management of operational risk, such as sound IT governance and management, mature IT processes, IT quality assurance, and effective IT security management. The evolving nature of cyber threats increases the need for sound management practices and a strong, professional risk culture in financial institutions which can react to new threats and deliver appropriate levels of employee awareness about new risks. Moreover, supervisors, institutions and policymakers alike should cooperate to seek further remedies to address cyber and IT risks. They should also consider the use of market-wide exercises involving the industry and public authorities to improve coordination in the face of large-scale cyber-attack.

Given the profits that organised criminals can obtain by means of fraud, industrial espionage or sabotage, this trend will in all likelihood continue to gather pace. Recent massive hacker attacks on large US institutions and companies from other sectors highlight the importance to adopt prevention measures.

In many European countries, cyber risks of the financial sector are connected to larger cyber security strategies⁸ in order to enhance the resilience against these risks.

Clear frameworks and protocols for sharing information and protocols on detection are desirable in all jurisdictions, covering incident reporting and recovery among market participants and authorities in both directions. Cross-border cooperation and the facilitation of cross-jurisdictional information sharing on cyber incidents are also desirable.

As such, in order to mitigate **operational risks from IT infrastructures**, financial institutions should reinforce internal controls related to IT systems, with particular attention to IT security and cyber resilience and focus on developing sound IT governance practices within their risk management framework. As for supervisors, it is important that regular practices and risk assessments increasingly address the mitigation of cyber and IT risks, namely by testing the robustness of business continuity plans and reinforcing IT inspections, using adequate expertise. Also, cooperation among supervisors, institutions and policy-makers should be increased in order to enhance the assessment of the overall resilience of market participants.

⁸ See, for example BaFin (2013), IT Security: Expectations of banking supervision