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JOINT COMMITTEE REPORT ON
RISKS AND VULNERABILITIES IN THE EU FINANCIAL SYSTEM
MARCH 2016

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EXECUTIVE SUMMARY

Economic growth in the EU remains weak and heterogeneous with some countries particularly struggling to recover from the financial and sovereign debt crisis. Despite substantial monetary policy intervention by the ECB, inflation is still very low and exacerbates challenges the debt overhang poses for several countries. The low interest rate environment coupled with high non-performing loans (NPL) ratios in some countries contribute to subdued profitability of banks, while insurers struggle to invest in assets with returns that are able to match guaranteed rates. Investment funds experienced markedly lower returns during the second part of 2015. Overall, risks concerning the low profitability of financial entities remain key concerns to the EU financial system. They contributed to significant market moves in European financial markets, with bank share prices decreases and challenges on markets for contingent convertible instruments since the beginning of 2016. As financial institutions intend to reduce costs and adjust their business models, forward-looking supervisory approaches to scrutinize business model sustainability are needed.

Ample sources of funding and low yields feed valuation risk. Search-for-yield continues as the financial services industry struggles to offer adequate levels of profitability. In the investment fund industry, investors and asset managers appeared to rebalance portfolios by increasing the maturity and reducing the average credit quality of the assets they manage within applicable regulatory limits. Recently, however, some funds attempted to keep risk profiles more stable, compensating decreases in credit quality by reductions in maturity, and vice-versa. Insurers may turn to investment classes previously dominated by the banking industry, such as infrastructure loans and asset backed securities. As search for yield incentivises engaging in higher risk assets, supervisors should monitor asset valuations and discuss with institutions their risk appetite. Banks should ensure that prudent credit standards with an adequate risk control are maintained.

Non-bank and non-insurance financial institutions (NBNIFIs) are playing an increasing role in the financial system, as the financial system beyond banks and insurers has expanded over the last 5 years. Empirical

evidence indicates that this evolution is accompanied by a change in the character of interconnectedness in the financial system. Anticipating the further expansion of market-based intermediation, regulators should monitor for ancillary, intrinsic risks such as concentration risks, cross border exposures and regulatory arbitrage, with the purpose to identify and mitigate potential propagation of shocks.

Following last decade's positive contribution of emerging markets (EM) and China to global economic growth, economic activity in these markets started to recede recently. While the slowdown in EM affects Europe directly through trade, indirect transmission through reduced confidence for global economic recovery and second round effects, such as a weakened demand for EU exports, could prove to be more substantial. Developments in China and EM may have a negative impact on European financial markets and entities.

1 INTRODUCTION

The August 2015 Joint Committee Report on Risk and Vulnerabilities considered as key risks to the EU financial system *i)* the low interest rate environment and its impact on the profitability and business models of financial institutions, *ii)* the continued search for yield, *iii)* the reductions in market liquidity and *iv)* the political and economic risks due to uncertainty around the resolution of problems related to Greece's financial situation.

With the exception of immediate concerns over Greece's financial situation, which has been somewhat contained, these risks have generally persisted. Weak economic growth and political concerns leave the EU economy particularly vulnerable to external shocks including spill-overs from economic slowdowns in other (emerging) markets, especially in China and Brazil. Recent drops in asset and commodity prices, especially oil, intensify the severe uncertainty about economic growth going forward.

This report highlights **risks concerning the low profitability of financial entities in a low yield environment**, the increasing **interconnectedness of bank and non-bank entities** and the potential **contagion from China and other emerging markets**.

2 RISKS CONCERNING THE LOW PROFITABILITY OF FINANCIAL ENTITIES IN A LOW YIELD ENVIRONMENT

Yields in Europe remain **close to historical lows** across a variety of fixed income instruments including sovereign and corporate bonds, money market instruments and asset-backed securities.¹ This is true across the entire maturity spectrum, with an increasingly large amount of short-dated instruments offering negative yield-to-maturity, also reflected in **short-term negative rates** on both collateralised and unsecured loans.²

Credit risk premia have **substantially declined** over the past few years. In corporate bond markets the spread between BBB and AAA securities has averaged 0.6 percentage points in 2015, down from 2.3 percentage points in 2013 (Figure 2.1). In the same context, the portfolio of **outstanding long-term corporate debt** securities in EU markets has **experienced shifts to more risky components**; with the share of non-investment grade debt securities rising from 3% to 10% in between 2009 and 2015, potentially also driven by a substantive decrease in the absolute issuance of debt bearing higher risk ratings. Similarly, the share of corporate debt issuers rated BB and lower rose from 13% to 30% over the same period (Figure 2.2). The decline in the average

¹ See ESMA TRV 1 2016, Appendix graphs A.26, A.31, A.43, A.47, A.54, A.64 and A.71.

² The Eurex 3-month General Collateral Pooling index last traded above zero in December 2014, and the 3M Euribor rate has been negative since April 2015.

credit quality of outstanding debt securities and issuers has reduced the availability of high-graded bonds, which likely feeds back into increases in their prices and lower yields. In addition, issuers are also exposed to the incentive to increase the average maturity of the fixed income securities they issue. In recent months, however, credit spreads fanned out again to some degree, reflecting on lately observed corrections in asset valuation and potentially reducing valuation risk.

2.1 LOW PROFITABILITY OF FINANCIAL ENTITIES

Following a robust performance in H1 2015, driven by strong equity and fixed-income valuations, the **investment fund industry** experienced **markedly lower returns** during the second part of the year. Equity funds were particularly impacted, reflecting the August stock market correction, with monthly returns declining from 1.9% in March to a three-year low of 0.5% in September, recovering afterwards to 1.0% in December. Exchange-traded funds - the vast majority of which track equity indices - experienced a similar decline. Bond funds' monthly returns, which averaged 0.6% over the past six years, declined from 0.2% to 0.05% in the six months of H2 2015. Commodity fund returns dived deeper into negative territory and hit a six-year low of -2.2% in August as commodity prices continued to decline (Figure 2.3). Recent market developments may potentially support the continuation of such trends due to a decline in mark-to-market values of investment portfolios.

The low yield environment also puts pressure on the profitability in the **insurance sector**, particularly via **lower investment results**. Return on Investments (ROI)³ deteriorated from 3.7% to 3.5% in Q3 2015 for the median company in a sample of large European insurers reporting to EIOPA (Figure 2.4).⁴ Such results are especially challenging for life insurers with old contracts with high guaranteed returns, which often lie between 4% and 5%.

Effort is therefore being made to limit the impact of low rates. Non-life firms have focused more on underwriting profitability to offset the poor investment returns (helped in part by the very limited severity of natural catastrophes over the past quarters).⁵ In the life sector, a **strategic shift toward unit-linked products or products with flexible guarantees** can be observed in several countries and in EU overall (the share of unit linked technical provisions increased from 37% in 2009 to 59% in 2014 for the EU as a whole). Overall, the average return on assets (ROA) and return on equity (ROE) therefore remained somewhat buoyant, standing at 1.1% and 9.8%, respectively, in Q3 2015.

A prolonged period of low interest rates also pose significant challenges to the resilience of defined benefit **Institutions for Occupational Retirement Provision (IORPs)**, and results of the EIOPA IORP stress test published in January 2016 showed that IORPs were generally more vulnerable to the market stresses than increases in longevity. The stress test revealed a market-wide EUR 78bn pre-stress deficit on national balance sheets. Moreover, using a market consistent approach which takes into account the current low interest rates,

³ EIOPA defines the investment return as the sum of investment income, realised investment gains and losses, and movements in unrealised gains and losses, net of investment expenses and charges as percentage of the average market value of the investment portfolio over the period excluding investments for unit linked products. The data reported is based on IFRS.

⁴ See Annex 2 in <https://eiopa.europa.eu/Publications/Standards/EIOPA%20Risk%20Dashboard%20December%202014%20-%20Background%20Note.pdf>

⁵ The Operating results in non-life is usually measured by the combined ratio (CR) gives a quick fix on whether underwriting is profitable and the degree of profitability. A combined ratio below 100% implies an underwriting profit, above 100% implies an underwriting loss. The Combined Ratio was about 93% in Q3 2015 for the median company in EIOPA's sample of large insurance companies.

the data showed an aggregated deficit of assets over liabilities of EUR 428bn for participating IORPS when sponsor support and pension protection schemes were not taken into consideration.

After a long period of low returns, **banks have improved their profitability** during 2015. An aggregate ROE of 6.4% as of Q3 2015 represents an improvement compared to 5.4% as of Q3 2014 (Figures 2.5 and 2.6). Profitability has nevertheless still not attained long-term sustainable levels, as **average return on equity (ROE) appears not to cover banks' cost of equity (COE)**. Prolonged low interest margins in the context of a low interest rate environment constrain bank profits and higher levels of returns. Net interest income (NII) and trading income have decreased when compared to total operating income, and the average NII compared to total operating income has decreased from 58.8% in Q4 2014 to 56.3 % in Q3 2015. Profitability concerns are not least reflected in substantial bank share prices decreases since the beginning of 2016, and contributed to recent challenges observed on markets for contingent convertible (CoCo) instruments. Also, yields for subordinated bank debt instruments widened and differentials to senior unsecured instruments increased.

Banks intend to compensate for lower net interest margins with other sources of income, such as fees and commissions. However, the **increasing disintermediation of the financial services** traditionally provided by banks, and a **more relevant role for non-bank intermediaries** in the financial service industry may hamper opportunities for growth and profit generation.

Several additional factors are negatively affecting bank profitability. The still low quality of assets in many jurisdictions keeps a drag on profitability and high levels of NPL constrain abilities to extend new lending. Conduct-related charges and litigation costs continue to be a further weigh on profitability of the banks. Going forward, the implementation of new impairment requirements under IFRS 9 could further affect profitability. It may result in increasing loan loss provisions through a focus on the expected loss model with a potential impact on both own funds and Risk Weighted Assets (RWA).

Financial **entities are aiming to reduce costs and adjust their business models** as a response to low profitability levels and additional capital requirements, often reducing capital-intensive business. Entities most likely adjust also through **innovation** (see Box 1), **increased risk taking** and **search for higher yield** as discussed in the next section. Such reactions highlight the **need for** a forward-looking supervisory approach when **scrutinizing the sustainability of business models**,⁶ in particular with regard to potential earnings, income sources and strategies drivers. Supervisors should for instance take a proactive stance towards banks' restructuring measures for their NPL. **Stress tests should evaluate the vulnerability of the EU financial system** to low-yields and further adverse market evolutions. In that context, a specific stress test exercises aimed at evaluating the vulnerability of the EU insurance system to low-yield and negative market evolutions will be launched by EIOPA in 2016. The EBA will conduct its EU-wide 2016 stress test, assessing banks' ability to meet supervisory capital ratios during an adverse economic shock. The **promotion of supervisory convergence** with respect to **risk management practices**⁷ in the fund industry within the EU could give further positive impulses to financial stability.

⁶ EBA Guidelines for common procedures and methodologies for the supervisory review and evaluation process (SREP) provide a common framework for supervisors in the assessment of risks to banks' business models, their solvency and liquidity positions.

⁷ This could apply to the interpretation of existent regulations, but as well attempts to promote convergence to common standards for voluntary actions of the industry.

Box 1 - Risk related to the development of Financial technology

Increasing proliferation of new financial technology and of technology providers of financial services ('Fintech'), digitalisation, and rapid innovation characterise a changing financial sector. Technology advances may increasingly affect traditional providers of financial service and their revenues. While Fintech may pose challenges for traditional providers of financial services, they can also provide opportunities for the financial sector. These include wider access to financial advice and services for customers at lower costs, and increasing competition and efficiency. A growing diversity of market participants and financial services offered may also reduce systemic risk, and lead to better and more customer-friendly products.

In the banking sector, Fintech could impact future profit generation capacity while financial institutions increasingly rely on other revenue streams than interest income. Fintech may have the potential to **disrupt business models and business lines** with their digital services, such as, e.g., **traditional retail payments services**. They may also promote risk taking behaviour of traditional providers of financial service. Fintech is often in a position to offer more efficient services, while market entry barriers may be lower than for traditional providers of financial services, and as digital advancements facilitate their market entry. Operational risk may also increase from, e.g., outsourcing to Fintech by traditional providers of financial service seeking to reduce operational costs.

With the increasing digitalisation of financial services, the ESAs have observed a growing number of institutions offering **automated tools using computer-based algorithm or decision trees when providing advice to consumers**, without, or with very limited, human intervention only. The ESAs are also monitoring developments around the **use of distributed ledger technology (DLT)**, which allows payment systems to operate in a fully decentralised way, without traditional intermediaries. This innovation draws on advances from a range of disciplines including cryptography, game theory, and peer-to-peer networking, and there are some expectations that DLT financial transactions could be settled almost instantaneously and various processes automatized.

Supervisors should monitor closely financial technology developments with a view to thoroughly understand developments in the field of financial technology and innovation, and to be prepared to adequately respond to a rapidly changing financial sector. This includes assessing potential risks for investor protection, such as, e.g., risks of misunderstandings and increasing exposure to IT risk. Fintech may also give rise to integrity risk, such as money laundering, legal and reputational risk. In the long run, advances in Fintech and digitalisation may also increase macro-prudential risks, e.g. related to procyclicality, and may pose risks for financial stability and for the orderly functioning of markets.

Considering the speed and potential impact of technological innovation on the financial sector, **supervisors should strengthen international and inter-sectoral cooperation**. This should include exchanging knowledge and sharing experiences and practices.

The JC launched a Discussion Paper (DP) on the topic of automation in financial advice in December 2015, explaining the concept of automated advice and highlighting potential benefits and risks to consumers and to financial institutions. This DP is aimed at assessing whether regulatory or supervisory action might be needed to mitigate the risks at the same time as harnessing the potential benefits of this innovation.

2.2 SEARCH FOR YIELD IN A LOW YIELD ENVIRONMENT

The combination of low yields, tighter spreads and still low profitability reported in the previous parts of this section may encourage search-for-yield mechanisms across markets and participants.

In the investment fund industry, **search-for-yield** may create new trends in fund strategies and reinforce existing risks. Investors' asset allocation and the investment behaviour of mutual funds are likely to be both affected. Some evidence suggests that investors have already started to rebalance their portfolios by shifting funds out of money market funds into equity funds, hence having contributed to longer term valuation gains in equity markets.⁸

⁸ See Hau, H. and Lai, S. (2014), Asset allocation and monetary policy: Evidence from the Eurozone.

To offset lower returns, asset managers, and in particular those of funds invested in money markets and fixed income instruments, face incentives to increase the maturity and reduce the credit quality of the assets they manage within regulatory limits. Thus fund managers have in recent years gradually shifted funds' portfolios from higher to lower-rated securities, and increased the average maturity of managed funds' portfolios more significantly than other financial sector entities. As a result, the **share of debt securities rated BBB or below in Euro Area (EA) investment funds' debt portfolios increased** gradually and represented more than 50% in Q2 2015.⁹ Such portfolio changes can **reinforce liquidity and maturity risks**, in particular for open-ended funds such as UCITS¹⁰, with problems arising in particular in stressed market conditions. Lower-rated and longer-dated debt securities tend to trade in less liquid markets or in markets where liquidity can quickly vanish during episodes of stress, as recently illustrated by the turmoil in US high-yield debt markets and the subsequent freeze in redemptions in a US hedge fund. For that reason bond funds recently appeared to follow a more risk-balanced approach, by partially compensating lower rating by shorter maturity, and vice-versa.¹¹

Lastly, a challenging low yield environment may result in the **expansion of complex fund strategies** or an **increased offer of alternative fund products**. Larger reliance on synthetic leverage (within regulatory limits), either for hedging or for trading purposes, could lead to **stronger pro-cyclicality in asset markets**. Similarly, the development of alternative products such as smart-beta exchange-traded funds may result in greater exposure concentration and create additional complexity for investors. These developments could increase risk, including systemic risk, if funds do not have adequate risk management capacities in place, or when such strategies or products are delivered to retail investors without proper disclosure of risks.

Insurers may turn to investment classes previously dominated by the banking industry, such as infrastructure loans and asset backed securities. These asset classes may have certain suitable characteristics for insurers, in particular long-term cash flows which can be used to match long-term liabilities, provided that the risk is properly managed. However, while some insurers have reported increased investments over the last years in big infrastructure projects (such as large real estate projects, railways, roads and renewable energy), and sometimes also in direct lending, these investments remain a small portion of the total investment portfolio of insurers, at least on an EU-wide level.

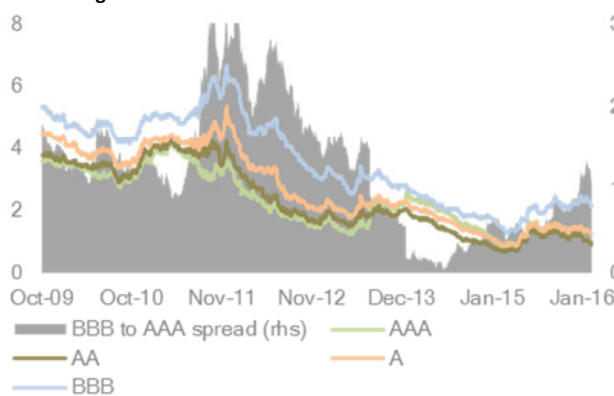
As search for yield in the low interest rate environment incentivises engaging in higher risk assets, **supervisors should monitor asset valuations**. Banks should ensure that prudent credit standards with an adequate risk control are maintained. As search for yield also incentivises business activities entailing higher risk, **supervisors should discuss with institutions their risk appetite**, and monitor that business activities are aligned with the institutions' stated risk appetite in terms of revenue generation. Concerning risks around asset valuation, the cost of investments, and in particular regarding the awareness of retail clients, **current work on disclosure standards** concerning risks and costs of UCITS and retail products (covered by the Packaged Retail and Insurance-based Investment Products Directive (PRIIPs)) could provide some mitigation. Similarly, the potential practice of closet indexing, i.e. the proximity of a fund to a benchmark while still claiming to be actively managed, can expose investors to different risk/return profiles than expected and to management fees close to those of more active funds. In addition, **instruments such as investor warnings could be considered** in instances of elevated opaqueness in financial products' risk-return-profiles.

⁹ See European Central Bank, Financial Stability Review (November 2015), Box 7. Partially, however, this trend may stem from the shifts in the composition of total securities outstanding presented earlier in this section.

¹⁰ UCITS are funds covered by the Undertakings for Collective Investments in Transferable Securities Directive.

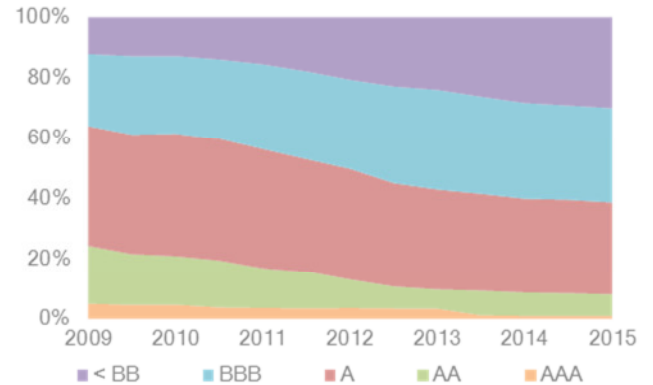
¹¹ See ESMA TRV 1 2016, forthcoming, T.31, p. 20.

Figure 2.1: Corporate bond yields, credit risk premium and EU corporate issuer ratings.



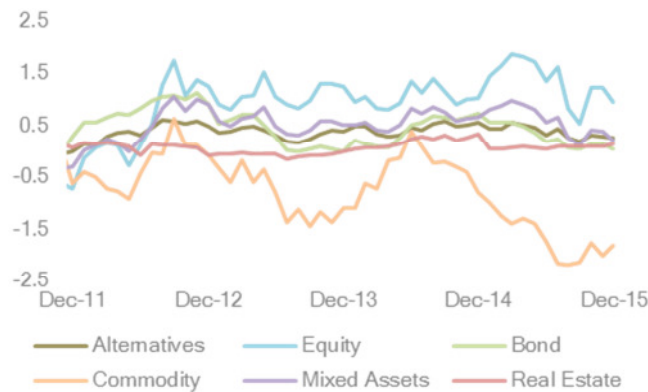
Sources: Thomson Reuters Datastream, ESMA.
Note: Markit iBoxx EUR corporate indices for maturities 5-7years, in %.

Figure 2.2: Rating profile of issuer ratings across rating grades.



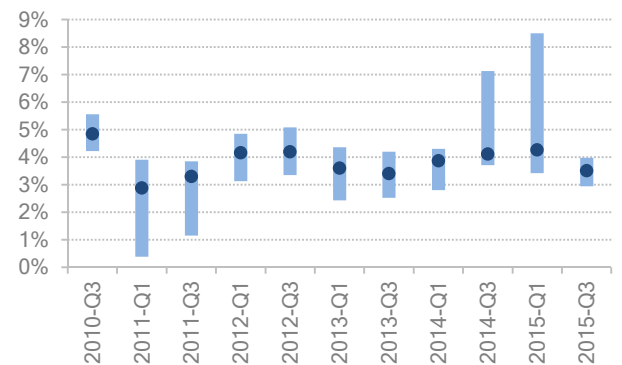
Source: CEREP, ESMA.
Note: Share of EU corporate issuer ratings, by rating category. Non-weighted average of ratings from Fitch, Moody's and S&P's.

Figure 2.3: EU Investment fund returns



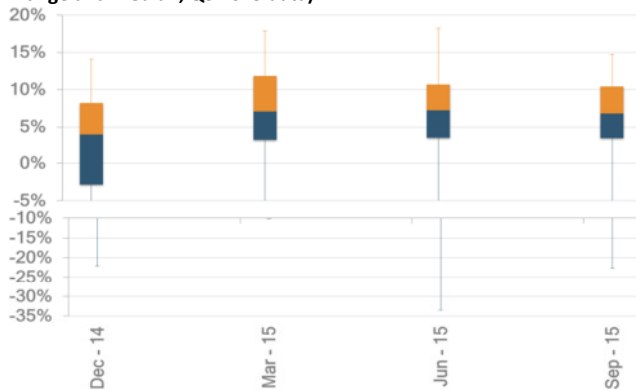
Source: Thomson Reuters Lipper, ESMA
Note: EU-domiciled investment funds average monthly returns. Monthly data, asset weighted, in %.

Figure 2.4 Investment returns for a sample of large European insurers, median and interquartile range (blue bars)



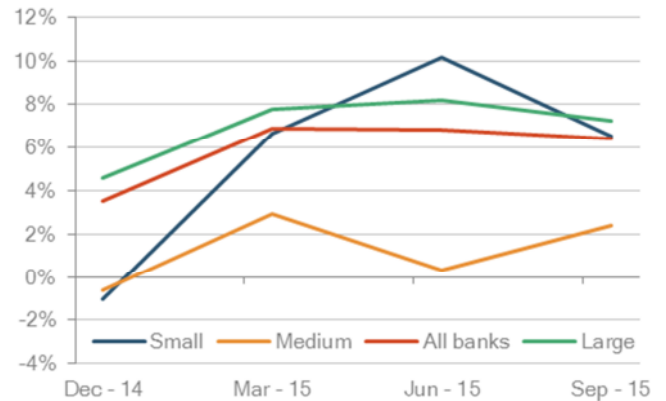
Source: EIOPA

Figure 2.5: EU banks return on equity (ROE) (5th and 95th interquartile range and median, Q3 2015 data)



Source: EBA

Figure 2.6: EU banks ROE per size of banks, Q3 2015 data)



Source: EBA

3 INTERCONNECTEDNESS WITHIN THE FINANCIAL SYSTEM

Interconnectedness represents a potential channel for the propagation of shocks, thereby contributing to systemic events. In order to prevent systemic crisis, regulators include this feature among the determinants of the systemic relevance of financial institutions.¹² Current regulations on systemically relevant institutions cover banking and insurance industries. However, **NBNIFs are playing an increasing role in the financial system.** These entities provide alternative funding sources and intermediation channels, but also increase the potential for spill-over effects and add to complexity. In this context, negotiations around the finalisation of criteria for the definition of systemically important NBNIFs are pending at the international level.

The EU Commission's plan for achieving a Capital Market Union (CMU) has the potential to further facilitate conventional and alternative funding channels, thus contributing to the revival of economic growth in the EU. The CMU will complement legislative measures aiming to foster new forms of market-based funding such as the regulations concerning European Long Term Investment Funds (ELTIFs), European Venture Capital Funds (EuVECAs) and European Social Entrepreneurship Funds (EuSEFs). In the context of the CMU, also the framework for securitisations is reinforced, including ensuring due diligence, risk retention and transparency rules, the provision of criteria for simple, transparent and standardised securitisations and the promotion of the risk-sensitiveness of securitisations' capital treatments through legislative action.

Regulators should continue to complement recent measures and support market-based funding through, for instance, developing regulation for non-bank loan origination models and promoting transparent and harmonized marketing rules for investment products. Anticipating the further expansion of market-based intermediation activities as a desired process, **regulators should, however, closely monitor for ancillary, intrinsic risks such as concentration risks, cross border exposures and regulatory arbitrage.**

3.1 FINANCING THE ECONOMY BEYOND BANKS AND INSURERS

The financial system beyond banks and insurers has expanded rapidly over the last 5 years, reaching a size equal to 87% of the EA banking system (Figure 3.1). **EA investment funds grew by 65%,** up to EUR 10tn, complementing banks' economic functions as providers of financial intermediation between final investors interested in saving instruments redeemable in the short term and borrowers interested in longer term credit.

The prolonged period of low interest rates plays an important role in this evolution. Due to the low remuneration of bank deposits, investors "**searching for yield**" have re-allocated their funds to unit-linked life insurance products and investment funds which can offer higher, although riskier returns. **Market-based funding partly compensated the near stagnation of banks' credit extension,** with EA investment funds' holdings of non-financial corporate debt securities growing by 48% over the last 5 years (Figure 3.2). More recently the rapid development of specialized loan funds providing direct lending to the real economy revived concerns over shadow banking. While acknowledging the potential benefit of this activity – still in its infancy – it is necessary that it develops in an EU harmonised framework, with appropriate risk mitigants, such as the ELTIF regulation, in place.¹³

¹² For banks ref. to EBA (2014) Guidelines. Available at [https://www.eba.europa.eu/documents/10180/930752/EBA-GL-2014-10+\(Guidelines+on+O-SIIs+Assessment\).pdf](https://www.eba.europa.eu/documents/10180/930752/EBA-GL-2014-10+(Guidelines+on+O-SIIs+Assessment).pdf). For insurers ref. IAIS (2013) Global Systemically Important Insurers: Initial Assessment Methodology. Available at: <http://iaisweb.org/index.cfm?event=getPage&nodeId=25233>

¹³ See Joint Committee Report on Risks and Vulnerabilities in the EU Financial System, March 2015.

3.2 GROWING CONCERNS REGARDING INTERCONNECTEDNESS WITHIN THE FINANCIAL SYSTEM

The development of the marked-based funding is nevertheless raising increasing concerns regarding the **interconnectedness between investment funds, banks and insurance companies.**

Investment funds' exposure to banks and insurers appears stable, yet not negligible in absolute terms. Overall, the direct exposure of investment funds to the rest of the Euro Area financial system represents in Q2 2015 EUR 660bn, less than 10% of their assets (Figure 3.2). In particular Money Market Funds (MMFs), which are an important source of short-term financing for financial institutions, are highly exposed to Monetary Financial Institutions (MFIs) counterparts (70% of their assets). In consequence, their disorderly withdrawal could cause broader repercussions, such as contagion to the real economy and the bail-out of risks for their sponsors and, ultimately, public authorities. MMFs with a constant net asset value (CNAV) are particular vulnerable to runs.

Insurance companies and banks are likewise exposed to investment funds. An EBA stock take of a sample of EU banks¹⁴ identified significant exposure to non-banks financial intermediaries of EUR 1 082bn in Q1 2015. The EU banks' average individual exposure to non-MMF represents approximately 29% of their eligible capital, after credit risk mitigation and large exposures exemptions, and their exposure to UCITS MMFs represents 5.9%. Within non-MMF, the largest average individual exposure is to fixed income funds (about 11% of eligible capital), followed by real estate funds (10% of eligible capital). Insurance companies have increased their exposure to investment funds from 6% of the total assets in Q4 2008 to 10% in Q2 2015.

In addition, **certain activities, and especially repo transactions (EUR 5.6tn in the EU),¹⁵ contribute to the interconnectedness** within MFIs, but also between MFIs and Other Financial Institutions (OFIs). As repos are short-term instruments, both lenders and borrowers can easily withdraw: around 30% of repos have a maturity shorter than a week and 60% can be withdrawn within less than a month. Although liquidity risk appears to be limited under normal market conditions, the limited information available on repo transactions and exposure makes it challenging to anticipate what may happen under stressed market conditions.

Switching perspectives from the aggregate level to an individual entity basis, empirical evidence from network analytics indicates a **change in the character of interconnectedness between the 60 largest listed financial companies in the EU** (see Box 2). Until 2012, the performance of banks appeared to be able to predetermine the subsequent performance of insurers and fund managers. However, since 2012 this pattern reversed. As a consequence, **asset managers emerged as the group impacting on the performance of firms within the two other sectors.** This evidence is consistent with the growing importance of the asset management sector in terms of interconnectivity.

3.3 INDIRECT CONNECTIVITY INCREASES THE RISK OF CONTAGION

The **high correlation in asset prices** observed in H2 2015 across financial asset classes **creates additional contagion risk** between financial institutions.¹⁶ Also due to the low interest rate environment and search-for-yield behaviour, investors tend to follow similar trading patterns, resulting in increased volatility and co-movements of asset classes. In terms of interconnectivity, forex markets play an important role as an

¹⁴ 169 banks and 15 investment firms from 22 Member States, covering around half of the aggregate total assets of the EU financial sector

¹⁵ ESMA TRV 1 2016, forthcoming, Appendix: graphs A.83.

¹⁶ ECB Financial Stability Review, November 2015, p.9.

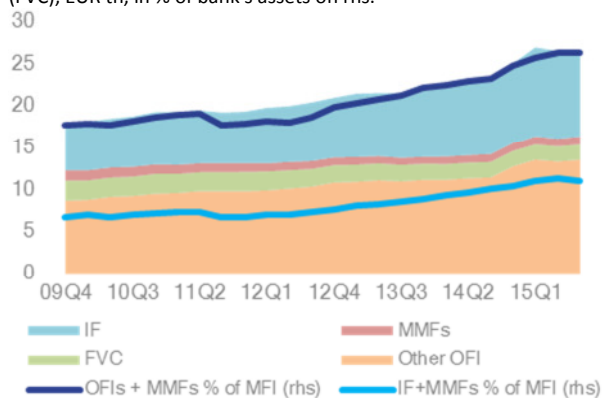
additional risk transmitter, with some 40% of the EA investment funds assets being invested outside the EA¹⁷ and banks playing the role of market makers. Higher correlations between financial assets **reduce the benefit of diversification and foster potential systemic events.**

Liquidity issues heighten the risk stemming from asset price correlation. In response to a market shock, financial institutions can meet **redemption requests** (e.g. for investment funds) and restore their solvency by ultimately **selling illiquid assets**. Such sales could, if substantial, **depress asset valuation** and increase market volatility. Thereby they would **propagate stress to other institutions**, which may subsequently be forced to sell assets due to margin calls on repo and derivatives. Hence **a negative feedback loop would result**. Also **CoCo instruments** can exacerbate contagion risk between financial institutions in case of their conversion or write down.

Financial conglomerates with their **vertical integration** represent an **additional channel of indirect contagion**. In most European countries, parent companies of asset managers frequently belong to banking groups. Within such groups, direct contagion from one fund to another is limited due to constraints on cross-investments and direct investments of funds into their parent companies.¹⁸ Contagion should therefore **mainly be transmitted via indirect channels**. Concerns about the liquidity of a fund or, more generally, sub-entity of a financial group can spread to the parent or other subunits, including funds, **exposed to comparable asset classes or explicit credit lines**. In the same way, **reputational risk** associated with the parent company could lead to redemptions in all managed funds and associated sub-entities.

Figure 3.1: Increase in size of non-banking system

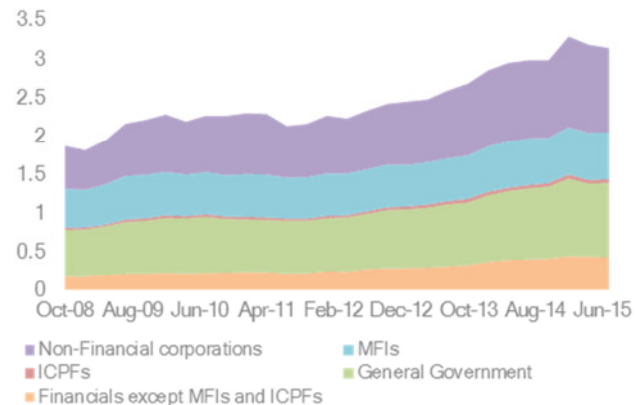
Total assets for EA Money Market Funds (MMFs) and other financial institutions (OFI): investment funds (IF), financial vehicle corporations (FVC), EUR tn, in % of bank's assets on rhs.



Source: ECB, ESMA

Figure 3.2: EA IFs' exposure to other EA financial sectors

EA IFs holdings of debts securities shares, investment fund shares and other equities issued by EA entities. EUR tn



Sources: ECB, ESMA.

¹⁷ ECB Financial Stability Review, November 2015, p.91.

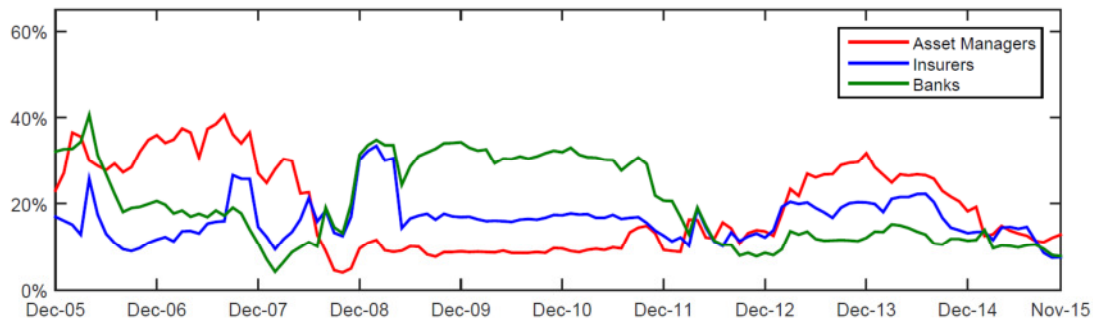
¹⁸ Limits exist in general for the possibility to invest into other funds according to applicable regulations, e.g. for UCITS i.e. maximal 10% of Assets under Management, with the exception of fund of funds constructs. For investments into parent companies general requirements on eligible investments and limits to investment positions apply.

Box 2 – Are banks, insurers and asset managers becoming more connected?

Interconnectedness within the financial industry is considered one of the most relevant determinants for systemic risk. Connections among financial institutions, concerning both the asset and the liability sides of their balance sheets, are potential channels for the propagation of shocks in the economy. Based on the assumption that stock prices reflect all information available to markets, the evolution of such interconnectedness between banks, insurers and asset managers is illustrated by mutual interdependencies in the stock market prices of the biggest 20 companies from each of these three sectors.¹⁹

Interconnections among banks, insurers and asset managers

The figure displays for each sector the number of statistically significant Granger causality connections over the total number of possible connections. Statistical significance level is set at 5%.



Source: banks: top 20 in terms of capitalization from STOXX® Euro 600 Banks; (re)insurers: top 20 in terms of capitalization from STOXX® Euro 600 Insurance; Asset Managers: 20 AM listed in US and EU stock markets. Data retrieved from Datastream®. Elaboration: EIOPA.

The graph shows a clear distinction between the three groups that tend to play distinct and mutual roles in different timeframes. The measure captures a prominent role played by banks in the aftermath of the 2008 financial crisis driven by credit and liquidity issues followed by a relatively tranquil period in 2012 when the number of relevant connections dropped. From 2013 to 2015 the reduction of market tensions and the prolonged low yield environment lead to an increase in the number of significant connections stemming from the most affected industries, namely asset managers and, to a lower extent, insurers, with banks playing an ancillary role. 2015 is characterized by a low level of interconnectedness, with the contribution of asset managers ticking slightly up in late 2015

Concluding, within the limitations of data and of the model, the analysis shows how banks, insurers and asset managers react and contribute to market tensions potentially reflecting vulnerabilities such as sensitivities to interest rate, liquidity shrinkage or credit exposure. The active role played by asset managers in the second half of the observation period calls for further investigation, also with regard to their potential systemic relevance.

4 RISKS FROM CHINA AND EMERGING MARKETS

While emerging markets (EM) and China in particular contributed positively to economic growth over the last decade, economic activity in these markets has started to recede. The probability of **re-pricing of risk premia in global financial markets increased recently**, as sharp declines in the Chinese equity markets in the last quarters of 2015 and first weeks of 2016 triggered augmented uncertainty and significant market moves in

¹⁹ Linear Granger causality tests for pairwise causality in the monthly stock returns of 60 financial companies equally divided between banks, (re)insurers and asset managers are used to identify significant connections. The analysis is rolled over the last 8 years. It is worth noticing that the concept of Granger causality does not measure the causality in its stricter meaning, but whether past values of a variable x contain information that helps to predict a variable y beyond the information contained in past values y of alone. More specifically, we are measuring whether the movements in stock price of one entity anticipate (cause) movements of stock prices of other entities.

global and European financial markets. At the same time, perceptions of **emerging market risks** have **increased** substantially at financial institutions²⁰.

The slowdown in EM affects Europe directly through trade. Trade between the EU and China has increased substantially over the past decade with China's share in world GDP reaching 13% in 2014. Despite their relatively large size, however, EU exports to China remain limited, effectively limiting contagion risks.

Direct exposures of the EU financial system to EM and China **appear** relatively **limited** and vary across industry. In the banking sector, a deterioration of economic conditions in China and other EM countries could have a negative impact on balance sheets and exposures, by triggering defaults and reducing revenues from business with EM clients. EU banks' direct exposure towards EM countries was about EUR 2.3tn (11% of total RWA) as of June 2015²¹. The total exposure to China increased from EUR 521bn in Q2 2014 to EUR 654bn (approx. 3% of RWA) in Q2 2015, and is concentrated to relatively few banks in a few countries (Figure 4.1). The exposures of large EU insurers to EM and China were found to be 3.4% and 2.1% of total assets in a stock take carried out by Eiopa in 2014. EA investment funds were exposed to EM with EUR 669bn (9.5% of AuM) and to China with EUR 25bn (0.3% of AuM) in Q3 2015.

However, **indirect transmission channels** such as broader **confidence effects** on the global economic recovery (following weaker growth in China and other EM like Brazil²²) as well as **second round market effects** could prove to be more substantial. For instance, a sharp decline in economic output in China may potentially also lead to **withdrawal of Chinese investors from Europe**, including investors in banks and insurers, weakening those entities' financial positions. Moreover, a slowdown in China's economic activity also **affects global commodity markets**. While lower commodity prices could have positive impacts on EU growth, the weak economic climate and debt overhang render this stimulus less effective. Additionally, the drop in commodities' prices heavily impacts EM with commodity-export oriented economies²³.

Furthermore, at least 50% of **outstanding corporate debt in EM** countries is **denominated in non-domestic currencies**²⁴, and this could **affect EU financial institutions** with direct linkages to commodity producers through debt or equity financing. Rising interest rates in the US and other major economies might result in further depreciation of EM currencies, and exert additional downward pressure on oil, industrial metals and other commodities prices. Moreover, slower growth in EM will affect insurers operating in such countries.

All these potential developments in China and EM may have an impact on European financial markets and entities, operating in EU or abroad. Therefore, they should be duly covered in relevant risk analysis exercises, such as sensitivity analyses or stress test exercises. Optimistic assumptions regarding returns on cross border activity should also be challenged and carefully scrutinized by supervisors.

²⁰ For instance, responses to the EBA RAQ indicate that emerging market risks are now most important factor negatively influencing the market sentiment. A global market slowdown is considered to be highest risk linked to EM risks, followed by potential losses from deteriorating emerging market asset quality and devaluation of emerging market currencies.

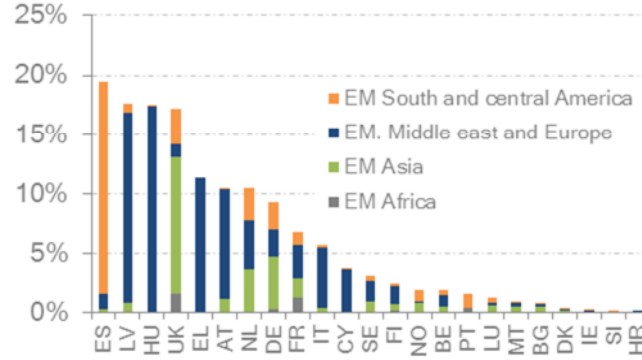
²¹ Based on supervisory reporting data.

²² In recent months, uncertainties about global economic recovery increased and the growth outlook for the main regions and in some EU countries deteriorated, coinciding with significant declines in oil and other commodity prices.

²³ With commodity prices having fallen to their lowest levels since 2008, negative impacts for emerging markets exporters' economies are being realised.

²⁴ Source: IMF, EBA calculations.

Figure 4.1: EU banks' credit RWA of emerging market exposure over total RWAs – by geographical area, Q2 2015



EM Africa: Morocco, South Africa, Zambia

EM Asia: China, India, Indonesia, Philippines, Sri Lanka, Thailand

EM Middle East and Europe: Russia, Turkey, Ukraine

EM South and central America : Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Peru, Uruguay, Venezuela

Source: EBA supervisory reporting