Annex to Lower for longer – macroprudential policy issues arising from the low interest rate environment

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Joint Task Force of
ESRB Advisory Technical Committee (ATC),
ESRB Advisory Scientific Committee (ASC), and
ESCB Financial Stability Committee (FSC)

ESRB
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Introduction

This Annex to the Report "Lower for longer – macroprudential policy issues arising from the low interest rate environment" follows the structure of the report.

Section 1.1 complements section "Policy perspectives in the low interest rate environment – Systemic liquidity risk" of the report.

Section 1.2 complements section "Policy perspectives in the low interest rate environment – Key actions to complete the implementation of 2016 ESRB report measures" of the report. It assesses the progress made with respect to implementation of the 17 policy proposals advanced by the report on "Macroprudential policy issues arising from low interest rates and structural changes in the EU financial system" (ESRB (2016))[1] and presents a detailed explanation of the methodological approach adopted by Work Stream 3 (WS3) in conducting this assessment.

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[1] See Appendix F of **Macroprudential policy issues arising from low interest rates and structural changes in the EU financial system,** European Systemic Risk Board, Frankfurt am Main, 2016.

1 Annex to Policy perspectives in the low interest rate environment

1.1 Annex to the policy proposal on addressing and preventing systemic liquidity risks

Part 1: Liquidity shocks/triggers for insurance companies

SOURCES OF LIQUIDITY RISKS	TRIGGERING EVENTS	SHOCKS
Exposure to insurable events	Catastrophic events (e.g. natural catastrophes, pandemics)	Increase in frequency and magnitude of catastrophes
		Increase in collateral calls on risk pooling agreements (reinsurers)
	Sudden inflation spike (general or concentrated in specific sectors – e.g. medical costs, car spare parts)	Increase in cost of claims (potentially also driven by legal decisions)
Policyholder behaviour	Insurance run	Mass lapse event (surrenders)
	Loss of confidence	Reduction in new business (premium inflow)
		Non-renewal of existing contracts (premium inflow)
		Mass lapse event (surrenders)
	Financial crisis	Reduction in new business (premium inflow)
		Non-renewal of existing contracts (premium inflow)

		Mass lapse event (surrenders)
Off-balance sheet exposures	Increase/decrease in interest rates	Request for collateral (example: margin call on interest rate derivatives) due to changes in the market value of assets
	Capital market shocks	Increase in margin/collateral calls
Balance sheet exposures	Fire sale	Haircuts to assets
	Capital market shocks	Haircuts to assets
	Currency shocks	Foreign exchange mismatch
Funding risk	Deterioration of own credit rating	Increase in funding costs
		Shock to own equity
		Shock to risk premia of issued bonds
		Requests for collateral
	Disruption of the repo market	Reduced access to repo market
Counterparty exposure	Default of a primary reinsurer	Haircuts to reinsurance receivables and reinsurance recoverables
	Deterioration of lending balance sheet positions (banking activities)	Increase in the probability of default of counterparties
Operational risk	Cyberattack	Liquidity needs arising from ransomware or phishing attacks. Disruption in the premium collection process for some time

Source: European Insurance and Occupational Pensions Authority (EIOPA)
https://www.eiopa.europa.eu/sites/default/files/financial_stability/insurance_stress_test/methodological-principles-liquidity.pdf

Part 2: Liquidity reporting in the investment fund industry and central clearing counterparties (CCPs)

Investment funds are already subject to a range of liquidity reporting requirements that depend on the regulations that cover each fund type.

Alternative Investment Funds (AIFs) are subject to a range of detailed liquidity reporting requirements and must report their liquidity profile to their respective national competent authorities (NCAs) and the European Securities and Markets Authority (ESMA) at regular intervals. In this regard, on the liability side, AIFs report the share of Net Asset Value (NAV) that can be redeemed by their investors over a range of buckets (1 day, 2-7 days, 8-30 days, etc.) and, on the asset side, the share of the portfolio that can be liquidated over the same time buckets (see **ESMA (2020))**. AIFs also report their liquidity financing risks (the amount of available financing over the time buckets) and information on liquidity management tools. With a more "system-wide" view, AIFs report on their ownership concentration (share of NAV held by the top five investors) and, separately, their ownership by investor type (insurance, banks, etc.). AIFs also report exposures by asset class (corporate bonds, foreign exchange (FX) derivatives, etc.).

Money market funds (MMFs) are also subject to liquidity reporting requirements and information with a more systemic angle will soon be available. Under the MMF Regulation, funds report liquidity information to NCAs and ESMA on a regular basis, along with detailed information on the asset side (full portfolio holdings) and on the liability side (net flows, including by investor type). The information is currently reported on a quarterly basis for MMFs with assets under management (AuM) of more than EUR 100 million and on an annual basis for MMFs below that threshold. With a system-wide angle, new MMF reporting should soon make information available on MMFs' portfolio exposures and on their ownership structures.

At the EU level, Undertakings for Collective Investment in Transferable Securities (UCITS) are not subject to liquidity reporting requirements; some countries have, however, put in place liquidity reporting at national level. There are no EU reporting requirements for UCITS and the European Systemic Risk Board (ESRB) recently issued a recommendation to the European Commission for UCITS reporting, especially as regards their leverage and liquidity risk (**ESRB, 2018**). A number of countries have introduced a UCITS reporting regime that includes liquidity reporting: Belgium has mirrored the reporting requirements laid down in the Alternative Investment Fund Managers Directive (AIFMD)[2] and Luxembourg introduced half-yearly UCITS risk reporting in 2010 (**CSSF, 2010**). In the euro area, UCITS also report their portfolio holdings to central banks.

As regards CCPs, the European Market Infrastructure Regulation (EMIR)[3] requires certain liquidity disclosures and information to be shared with supervisors. Under EMIR, CCPs need to abide by strict rules on the type of collateral they accept from their clearing members; as specified in Article 46 of EMIR, they must "accept highly liquid collateral with minimal credit and

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[2] *Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No 1060/2009 and (EU) No 1095/2010 (OJ L 174 1.7.2011, p. 1)*

[3] *Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories (OJ L 201 27.7.2012, p. 1)*

market risk". As regards their investments, CCPs face tight constraints (Article 47 of EMIR), with a prescriptive list of acceptable investments being imposed. As for the monitoring of these exposures, Article 44 of EMIR specifies that a CCP must measure its potential liquidity needs on a daily basis. It must take into account the liquidity risk that would be generated by the default of the two clearing members to which it has the largest exposures. CCPs are under an obligation to inform and report to their NCAs on the principle that those authorities supervise their activities (see Article 4 of the Regulatory Technical Standards (RTS)).

Part 3: Liquidity reporting for insurance companies and pension funds (ICPFs)

In insurance, liquidity risk can arise on both sides of the balance sheet. The main sources of liquidity risk in the insurance sector arise from exposures to insurable events, policyholder behaviour, on and off-balance sheet exposures, funding risk and/or other sources. For example, on the asset side, insurers may face liquidity risk in the event of disruptions in the financial markets. On the liability side, insurers may be faced with liquidity risk if there is a sudden and significant increase in claims or surrenders.

There are two main approaches to assessment of the liquidity position of an insurance undertaking: the balance sheet approach and the cash flow approach, each with their benefits and shortcomings.

- A balance sheet approach approximates the liquidity needs and sources stemming from the stocks of assets and liabilities held by an undertaking on a specific reference date.
- A cash flow approach is a flow-based technique that compares the projected or realised liquidity sources and the liquidity needs of an undertaking over a predefined time horizon to determine whether, and to what extent, the inflows would be able to sustain the outflows over time.

At the same time, however, there are also spillover effects to be considered. For example, bans on redemption rights in the funds industry may create systemic liquidity risk in the insurance sector. Cross-consistency in terms of approaches and tools would therefore be important.

Overall, exposure to liquidity risk may be different from that of other sectors. In the banking sector, for example, the main source of liquidity risk tends to come from maturity transformations by banks. Consequently. an approach to liquidity risk that takes into consideration the specific nature of the different sectors would seem to be required.

Although Solvency II[4] reporting already includes detailed information on assets and liabilities, there are gaps that would need to be filled in. From a macroprudential point of view, the main reporting gap relates to certain of the elements that would allow authorities to identify potential systemic risk triggered by massive surrender decisions. In practical terms, incentives or disincentives to policyholders are linked to the type of product and the existence of certain contractual features.

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[4] *Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II) (OJ L 335, 17.12.2009, p.1)*

Data gaps relate mainly to the liability side and may include the classification of products according to the types of penalty embedded, differences in surrender values, etc.

1.2 Annex to Section 4.2: Overview of policy proposals formulated in the 2016 LIRE report

The 2016 Low Interest Rate Environment (LIRE) report[5] proposed a suite of policy options to mitigate observed risks (Table A1.1). With regard to the sustainability of business models, the LIRE report proposed enhancing the resilience of entities and resolving or consolidating unsustainable entities through a set of policies targeting the insurance sector, the pension funds sector and the banking sector. Since the low interest rate environment poses the most immediate risks to business models with return guarantees on long-term liabilities, measures to enhance the resilience of vulnerable companies within the life insurance and pension fund sectors were considered to be of paramount importance. The report therefore proposed that the implementation and subsequent review of Solvency II should address the risks from a protracted low interest rate environment (Policy A.1.1.1). The report also supported the development and harmonisation of effective recovery and resolution frameworks for insurance companies at European level. A proposal was made for resolution regimes to explore legal options that give the authorities in charge of resolution the power to modify the terms of existing contracts as a last resort (Policy A.1.2.2). In the pension fund sector, the report encouraged the implementation of EIOPA's recommendation to enhance risk assessment and the transparency of pension funds in all European countries to help the relevant authorities and schemes to identify and take steps to address potential shortfalls (A.1.1.2). With respect to the banking sector, the report encouraged the finalisation of the resolution framework proposed in the Bank Recovery and Resolution Directive (BRRD)[6] (Policy A.1.2.1). Moreover, given the increased sensitivity to interest-rate risk and asset revaluation, the report suggested that the Basel Committee on Banking Supervision (BCBS) guidance be swiftly incorporated into EU law (Capital Requirements Regulation[7] (CRR)/Capital Requirements Directive (CRD))[8] to achieve harmonised assessment and regulation of interest-rate risk for bank books (Policy A.1.1.3). Given that risks related to a low interest rate environment are likely to occur simultaneously in several sectors, a proposal was also made for the efficiency and cross-sectoral consistency of recovery and resolution frameworks to be evaluated and for measures to be taken to ensure their consistent implementation. These frameworks would, in fact, allow for the restructuring and recovery, and if necessary the removal, of institutions that were not viable in a low interest rate environment (Policy A.1.2.3).

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[5] See **Macroprudential policy issues arising from low interest rates and structural changes in the EU financial system,** European Systemic Risk Board, Frankfurt am Main,2016.

[6] Directive 2014/59/EU of the European Parliament and of the Council of 15 May 2014 establishing a framework for the recovery and resolution of credit institutions and investment firms..

[7] Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012, *OJ L 176, 27.6.2013, p. 1–337.*

[8] Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC (1).

With regard to increased risk taking, the 2016 report proposed policies aimed at enhancing monitoring and resilience to risk re-evaluation; these policies targeted markets and residential real estate (RRE)/commercial real estate (CRE) price misalignment in terms of risk dimensions. The report supported the closure of data gaps and the monitoring of risks, further enhanced by cross-border and cross-institutional cooperation, with a view to strengthening early warning systems (Policy A.2.1.1). In relation to the risk of asset price misalignments in the real estate sector, the 2016 report encouraged macroprudential authorities to develop the necessary means to monitor financial stability risks, in particular with respect to lending standards, including credit intermediation by non-bank institutions. Macroprudential authorities were encouraged to conduct loan affordability tests, implement limits on loan-to-value and debt-to-income ratios and guarantee the prudent valuation of collateral to contain the build-up of imbalances arising from excessively loose lending conditions and thereby increase resilience (Policies A.2.2.1 & A.2.2.2).

A suite of policy options was also identified to mitigate conjectured risks (Table A1.2). In the context of the broad-based risk taking, the 2016 report highlighted the need to enhance the monitoring of risk taking and resilience to risk revaluation across the whole system (including shadow banking) and with respect to RRE/CRE price misalignment. The report proposed, for instance, that certain aspects of non-banking activities still not fully resolved in the existing regulation should be addressed, e.g. in respect of leverage, funding, liquidity and interconnectedness (Policies B.1.1.1, B.1.1.2, B.1.2.1, B.1.2.2, B.1.2.3).

Finally, with regard to risks related to changes in the structure of the financial system, the report encouraged the development of a system-wide stress testing framework and the development of a macroprudential toolkit for non-banks and financial markets. The report encouraged the development of a system-wide stress testing framework for macroprudential purposes and with the aim of conducting a system-wide financial assessment of the impact of price and liquidity shocks (Policy B.2.1.1). The report supported the fostering of activity-based regulation to ensure cross-sector consistency and avoid regulatory arbitrage (Policy B.2.2.1). Finally, it encouraged the development of a strategy for the creation and implementation of a macroprudential toolkit for application beyond the banking sector (B.2.2.2).

Table A1.1: Policy proposals

			A. Policies to address currently observed risks
	Nature of actions to be taken	**Sector/risk dimension**	**What type of actions needs to be taken**
A. Sustainability of business models	Enhance resilience of entities, accounting for interest rate risk	Insurance companies (resilience)	A.1.1.1: The ongoing implementation of Solvency II and its future review should address risk from the protracted low interest rate environment by reviewing the risk-free rate, and in particular the ultimate forward rate methodology, taking a macroprudential perspective, as well as relevant areas in the long-term guarantee package. The use of additional prudential tools should also be explored, including the power to request a reduction in the maximum level of interest rate guarantees offered in new contracts, the power to cancel or defer dividend distributions (even before the SCR has been breached) and introduce discretionary benefit limitation options, and the power to increase resilience by retaining more capital.
		Pension funds (resilience)	A.1.1.2: To endorse EIOPA's Opinion recommending the strengthening of EU regulation applicable to pension funds with a common framework for risk assessment and transparency, including the market-consistent valuation of liabilities and an evaluation of additional funding (including sponsor support). To further investigate the interaction and potential systemic impact of (underfunded) pension funds on the real economy, including via future stress tests, taking differences between Member States into account.
		Banks (resilience)	A.1.1.3: Harmonised assessment and regulation of interest rate risk in the banking book through swift implementation into EU law (CRR/CRD) of the BCBS guidance.
	Resolve or consolidate unsustainable entities	Banks (resilience)	A.1.2.1: Finalise the resolution framework under the BRRD on country and EU levels.
		Insurance companies	A.1.2.2: Develop effective recovery and resolution procedures for insurance companies (at national and EU level) whose business models prove unviable, including exploring legal options for modifying the terms of existing contracts with guaranteed returns as part of the resolution process, and as a measure of last resort if other instruments like guarantee schemes have proved insufficient and the modification is in the interest of policyholders.
		Cross sectional/system wide (resilience)	A.1.2.3: Evaluate the consistency of resolution regimes across borders and sectors (to ensure their efficiency and minimise costs/cross-sectoral spillovers)
B. Broad-based risk taking	Enhance monitoring of risk taking	Markets (credit & financial cycle)	A.2.1.1: Enhance the monitoring of financial and real asset valuations, with a view to strengthening early warning systems and communication (e.g. by giving it more prominence in the Risk Dashboards and in the work programmes of relevant institutions).
	Enhance resilience to risk revaluation	RRE/CRE price misalignment (credit & financial cycle)	A.2.2.1: Implement, on a country-specific basis, macroprudential measures (LTV, DTI, etc.) to strengthen resilience to risk revaluation and pre-empt the build-up of imbalances and systemic risks from the relaxation of lending conditions.
			A.2.2.2: Adopt, on a country-specific basis, prudent lending principles across real estate lenders, including loan affordability tests, (accounting for the impact of interest rate changes) and collateral valuation standards.

Source: ESRB 2016 LIRE Report

Table A1.2: Policy proposals (cont.)

	B. Policies to address currently conjectured future risks		
	Nature of actions to be taken	**Sector/risk dimension**	**What type of actions needs to be taken**
B. Broad-based risk taking	Enhance monitoring of risk-taking	Markets (interconnectedness)	B.1.1.1: Enhance data sharing, analysis and risk monitoring related to interconnectedness across the EU financial system in order to build knowledge of how risks are moved through different parts of the financial system, detect spillover channels and identify key nodes in the system (including, among others, SFT, collateral re-use and derivative exposures).
		Investment banks, shadow banking risks (resilience)	B.1.1.2: Consider increasing the disclosure requirements of investment funds and other non-banks to better monitor leverage (including synthetic leverage), liquidity conditions and funding positions, including Securities Financing Transactions (SFT), collateral re-use and derivative use, if required.
	Enhance resilience to risk revaluation	RRE/CRE price misalignment (credit & financial cycle)	B.1.2.1: Implement a monitoring framework for lending standards for all credit lending institutions, not limited to banks (framework to be strengthened over time as data gaps are being closed).
		Broad-based risk taking beyond capcitiy (resilience)	B.1.2.2: Review the need, within and across sectors, for increasing liquidity buffers or strengthening liquidity management tools B.1.2.3: Review the need, within and across sectors, to contain leverage to counter the risk of repricing effects and as a backstop limiting contagion risk (the precondition is to close data gaps)
C. Risks related to changes in financial sysem structure	System-wide stress tests	Markets (interconnectedness)	B.2.1.1: Increase cooperation and establish common ground across sectoral stress tests, with the ultimate goal of developing and implementing system-wide stress tests in the long term that include common shocks related to asset prices and liquidity
	Develop and strengthen macroprudential toolkit for non-banks and financial markets	Shadow banking risks, investment funds, liquidity risk in non-banking sector (resilience, funding and liquidity/maturity transformation)	B.2.2.1: Ensure cross-sector consistency to avoid regulatory arbitrage, by fostering activity-based regulation (complementing entity-based regulation). B.2.2.2: Support efforts aimed at developing a strategy for macroprudential policy beyond the banking system, including a review of the current framework for the regulation of leverage, liquidity and financing in the non-banking sector, with the aim of limiting systemic risk; the development of margins and haircuts as macroprudential instruments.

Source: ESRB 2016 LIRE Report

1.2.1 Assessment methodology

This assessment of the implementation of the policy proposals formulated in 2016 is based predominantly on expert judgements and surveys addressed internally to members of the European Systemic Risk Board. The nature of some of the proposals (e.g. enhanced analysis, risk monitoring) and the absence of a set of objectives against which to measure implementation, led us to assess their implementation status based on expert judgements and qualitative evidence of the actions taken rather than based on quantitative evidence.

For each of the proposed policy actions, we assessed: (i) the progress made with their implementation; and, (ii) the adequacy of the actions taken in respect of the proposals.

In assessing progress with implementation of the 2016 policy proposals, we were not able to apply the established procedure to assess ESRB Recommendations given that the proposals differed from ESRB Recommendations in terms of structure and legal status. For this reason, we did not consider actions undertaken in response to the policy proposals.[9] In assessing progress with implementation, we have attempted to answer the following questions.

- What actions to implement the proposals have been taken by EU and national authorities?
- Have these actions led to any major breakthrough in implementation of the proposals?
- Have any important phases of the process of the implementation of the proposals been concluded?
- Have the proposals been implemented in full?

We have assessed implementation of the policy proposals by applying a four-grade system. Progress with implementation has been assessed as:

- *not implemented* – if no significant actions have been identified;
- *in progress* – when some action has been undertaken, but further work is still ongoing or planned;
- *partly implemented* – if some important phases of the process of implementation of the proposals have been concluded;
- *implemented* – when actions seem to fully reflect the intentions of the proposals.

Our conclusions with respect to implementation of the suite of policy proposals provide an overview of both what has been done and what is still to be done. Our analysis details progress with implementing the proposals and evaluates whether additional action is needed. In

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[9] European and national authorities may have worked towards implementation of these proposals with a view to following up on the 2016 LIRE report or done so independently, based on their own agendas, coincidentally ultimately responding to the actions recommended by the report. Because we were unable to distinguish between these two courses of action in examining the relevant actions taken towards implementing these policy options, we have refrained from assuming that these actions were being undertaken in response to the policy proposals.

distilling the policies that the General Board may want to concentrate on in the future, we analysed the nature of the current environment, the identified risks and their magnitude.

In evaluating the adequacy of the actions taken, we assessed the degree to which they are proving to be effective, based predominantly on those actions taken de facto after publication of the 2016 LIRE report. Actions planned were included in the assessment process only if they had been formalised in some way (e.g. where EIOPA's Opinions related to the review process of an EU directive).

Moreover, adequacy was assessed based on various criteria depending on the nature of the measures concerned. An illustration of the questions underpinning the assessments, as well as the results of the policy implementation assessment exercise, can be found below (see Table 1, Appendix B).

Table A1.3: Criteria for assessing sufficiency

	Sufficiency
Risk monitoring-type measures	*Is the developed framework able to effectively assess LIRE risk across the financial system (as intended)? Is the monitoring framework complete? Is it used actively at the EU level?*
Analytical-type measures	*Are the analyses complete? Do they point to progress with assessment of LIRE risk (as intended)? Do they provide a good basis for deciding whether there is a need for additional macroprudential policy action in the area subject to analysis?*
Policy regulations (if empirical evidence available)	*Have the regulatory measures reduced risk effectively and in a way that maximises the balance between benefit and cost?*
Policy regulations (if any empirical evidence available, or actions in progress, planned or partly implemented)	*Is the construction/calibration of the regulatory measures appropriate or not in context of LIRE risks?*

We assessed whether the actions taken were sufficient to meet the objectives of the policy proposals by applying a binary-grade system: positive (yes) or negative (no).[10]

[10] In Figure 17, Section 4.2, of the main report, we present a summary of the assessment contained in this Annex; 2016 proposals are mapped into the categories in panels B and C of Chart 1 in the following way. In panel B, Policy Regulation includes proposals A111, A112, A113, A121, A122, A221, A222, B112, B221 and B222; Risk Monitoring includes proposals A112, A211, B111 and B121; Policy Analysis includes proposals A111, A123, B111, B112, B122, B123, B211 and B222. In panel C, Cross-sectoral includes proposals A123, A221, A222, B121, B122 and B123; Markets includes proposals A211, B111

1.2.2 Assessment of progress with the 2016 policy proposals

1.2.2.1 Actions to address risk related to the sustainability of business models

Most of the policies proposed to contain risks related to the sustainability of business models encouraged new regulatory actions. A summary of assessment of the progress achieved in the domains identified by the policy proposals is presented in Table 5.

Table 5 **Summary Assessment: Risks related to the sustainability of business models**

RISKS RELATED TO THE SUSTAINABILITY OF BUSINESS MODELS					
Risk timing	Policy no.	Policy	Nature of action	Assessment	
				Implementation	Sufficiency
Contemporaneous risks (in 2016)	A.1.1.1	Implement Solvency II Directive; review the Directive with a view to provide additional tools to limit LIRE risks	Regulation/ analysis	In progress	YES
	A.1.1.2	Establish harmonised EU framework for risk assessment and transparency of IORPs (support EIOPA's Opinion on IORP II Directive)	Regulation/ risk monitoring	In progress	NO
	A.1.1.3	Implement BCBS Guidance on Internal rate of return (IRR) in banking book	Regulation	Implemented	YES
	A.1.2.1	Implement BRRD	Regulation	Implemented	YES
	A.1.2.2	Develop framework for recovery and resolution (R&R) in insurance at EU and national levels	Regulation	In progress	YES
	A.1.2.3	Evaluate consistency of R&R regimes across borders and sectors	Analysis	Not implemented	NO

Source: ESRB, LIRE WS3 Assessment.

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and B211; Non-banking includes proposals A111, A112, A122, B112, B221 and B222, and Banking includes proposals A113 and A121.

The only policy assessed as not being implemented is A.1.2.3, aimed at ensuring the cross-sector consistency of resolution frameworks. While some academic work was identified, to date no in-depth analysis has been carried out on the contagion channels between banking and insurance or CCPs in resolution. The absence of any such analyses is due to the fact that work on the development of a framework for recovery and resolution (R&R) in insurance at EU and national levels (Policy A.1.2.2) is still underway. In this regard, EIOPA's advice on the minimum harmonisation of resolution frameworks was published in December 2020 in its Opinion submitted as part of the Solvency II review.[11] Implementation of an EU harmonised framework in this field depends on the legislative initiative taken by the European Commission in response to EIOPA's advice.

The goal of Policy A.1.1.2, aiming at establishing a harmonised EU framework for pension fund risk assessment and transparency, has not been fully achieved. At the time of the publication of EIOPA's Opinion[12] on the Directive on the activities and supervision of institutions for occupational retirement provision (IORP II)[13], the legislative procedure for the adoption of that new Directive was already at an advanced stage; the Opinion was not therefore taken into consideration for the Directive but will serve instead for the review of that Directive on 13 January 2023. Since 2016, EIOPA has been employing a partly harmonised framework to assess the risks to pension funds in the EU through its regular stress testing exercises. EIOPA is also planning to review and enhance its stress testing framework for pension funds, and to further investigate the interaction and potential systemic impact of (underfunded) pension funds on the real economy. In the light of this, we have assessed this policy as being in progress, from the point of view of the implementation, but still not sufficient in terms of the adequacy of the actions taken with respect to 2016 proposal.

EIOPA included many of the proposals formulated in Policy A.1.1.1 in its Opinion to the Commission. However, the legislative process is ongoing, and the outcome of the Opinion's proposals is still uncertain since this falls within the remit of the European Commission. One important element of the policy proposal, i.e. the review of the ultimate forward rate (UFR) used in determining the risk-free interest-rate term structure, has already been taken into consideration and partly implemented. The remaining 2016 proposals (i.e. the methodology for deriving the risk-free interest-rate term structure; the power to request a reduction of the maximum level of interest-rate guarantees in new contracts; the power to cancel or defer dividend distributions before the solvency coverage ratio (SCR) is breached and to retain more capital to increase resilience in a LIRE) may be implemented, as a result of EIOPA's Opinion, within the framework of the review of Solvency II.[14] The limited progress achieved so far at the EU level should not impede work to limit LIRE-related risks at national level.

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[11] **Opinion on the 2020 review of Solvency II**, European Insurance and Occupational Pensions Authority, Frankfurt am Main, December 2020.

[12] EIOPA, Opinion to EU Institutions on a Common Framework for Risk Assessment and Transparency for IORPs, EIOPA-BoS-16/075, 14 April 2016, EIOPA, Opinion on the 2020 review of Solvency II, EIOPA-BoS-20/749, 17 December 2020 (see section 14.1, page 79) and EIOPA, Background document on the Opinion on the 2020 review of Solvency II – Analysis, EIOPA-BoS-20/750, 17 December 2020 (see section 14.1.5, page 720-725).

[13] Directive (EU) 2016/2341 of the European Parliament and of the Council of 14 December 2016 on the activities and supervision of institutions for occupational retirement provision (IORPs) (OJ L 354, 23.12.2016, p. 3)

[14] The power to request a reduction of the maximum level of interest rate guarantees in new contracts is given to NCAs in some jurisdictions.

1.2.2.2 Actions to address broad-based risk taking

Most of the proposals on containing broad-based risk taking behaviours call for more in-depth analysis or better risk monitoring, with only a few new policy regulations. Moreover, many of the risks identified in 2016 were only based on conjecture at that time. In addressing these conjectured risks, the report therefore formulated policy proposals allowing for a relatively long lead-in time. The overall assessment of the policy actions recommended to contain risk related to broad-based risk taking is presented in Table 6.

Important gaps still exist as regards the lending activities of non-banking institutions, in both the mortgage and non-mortgage markets. Many countries have implemented measures that target lending by banks or mortgage lending, while instruments based on total debt, which would capture lending by non-banks and consumer loans for instance, are not as commonly implemented (Policy A.2.2.2). For this reason, we would stress the need for a more comprehensive activity-based approach covering all types of lending by all types of lender, including non-banks. With respect to the principles of prudent lending for commercial real estate institutions, progress is hindered by the nature of the borrowers (i.e. corporations), the more international nature of the market and the difficulties in designing measures that fall to the purview of national legislation. Important progress has been made[15] towards establishing a comprehensive EU-wide framework for monitoring real estate lending standards (Policy B.1.2.1) and other real-estate-related data. If implemented, the 2016 ESRB recommendation on closing data gaps should provide all the information necessary to assess real estate risks in Member States, and across the EU, for financing by all types of lender.

In spite of the progress made by countries towards implementing macroprudential measures limiting the risk of a loosening of lending standards, e.g. LTV and DTI (Policy A.2.2.1), the actions taken are still considered to be insufficient.[16] Once again, these measures are common for bank lending but less common for lending falling outside the banking sector. In many countries, there is still an absence of measures that target total debt and apply to all lenders of all types. The key obstacle identified is the lack of data on the total indebtedness of economic agents. The approach to calibration of these measures varies among countries.

[15] Recommendation of the European Systemic Risk Board of 21 March 2019 amending Recommendation ESRB/2016/14 on closing real estate data gaps (ESRB/2019/3) (OJ C 271, 13.8.2019, p. 1) is in the process of being implemented and should be finalised in 2021 for RRE and in 2025 for CRE.

[16] In 2019 the ESRB launched a survey among members on the availability of national legal frameworks for borrower-based measures; the preliminary results of the survey revealed that some countries still do not have the power to apply legally binding borrower-based measures (BbMs).

Table 6 **Summary assessment: Risks related to broad-based risk taking**

RISKS RELATED TO BROAD-BASED RISK TAKING					
Risk timing	Policy No.	Policy	Nature of action	Assessment	
				Implementation	Adequacy
Contemporaneous risks (in 2016)	A.2.1.1	Enhance monitoring of valuations of financial and real estate assets	Risk monitoring	Implemented	YES
	A.2.2.1	Implement macroprudential measures (loan to value (LTV), debt to income (DTI), etc.) to limit risks from any relaxation of lending conditions (on a country-specific basis)	Regulation	Partly implemented[17]	NO
	A.2.2.2	Adopt prudent lending principles across real estate lenders (on a country-specific basis)	Regulation	Not implemented	NO
Future/conjectured risks	B.1.1.1	Enhance data sharing, analysis and risk monitoring in respect of interconnectedness across the EU financial system	Analysis/risk monitoring	In progress	NO
	B.1.1.2	Consider increasing non-bank disclosure requirements for liquidity, leverage and funding	Analysis/ Regulation	Partly implemented	YES
	B.1.2.1	Implement monitoring of lending standards for all lending institutions	Risk monitoring	In progress	NO
	B.1.2.2	Review, within and across sectors, the need for increasing liquidity buffers or strengthening liquidity management	Analysis	Implemented[18]	YES
	B.1.2.3	Review the need to contain leverage across sectors	Analysis	Partly implemented	NO

Source: ESRB, LIRE WS3 Assessment

[17] Implemented for RRE & banks, in-progress for CRE.

[18] This can be reconsidered in the context of COVID-related analysis (see the factsheet).

More work is needed on the analysis and the monitoring of interconnectedness within the EU financial system (Policy B.1.1.1). While significant progress has been made with the infrastructure, data quality and legal hurdles have prevented us from combining different data sets and developing a comprehensive framework for analysing interconnectedness in the EU financial system. While improvements in the collection of data at sectoral level and activity datasets can provide important insights into different sectors of the financial system, a complete "data map" of the financial system is still not available. As this is a key to assessing the risks arising from interconnectedness, the progress made is deemed to be insufficient.

The EU's current ability to assess and contain leverage across the financial system is also insufficient (Policy B.1.2.3). The development of a macroprudential approach to leverage is likely to take some time and is therefore a medium-term goal, not an immediate solution.[19] To date, there are no impact studies analysing the use of leverage requirements within individual sectors nor analyses of the interactions between sectoral requirements. For this reason, we are still unable to assess leverage across the financial system and economy. As it is difficult to assess whether the LIRE risks identified have been addressed, we consider the actions taken with respect to Policy B.1.2.3 to be insufficient.

1.2.2.3 Actions to address risks related to changes in financial system structure

The response of financial institutions to the LIR environment and related risks can lead to changes in the structure of the financial system, which can, in turn, result in the migration of some risks across the financial system and the economy. Because such changes had not been observed in 2016 but were expected to materialise, the resulting risks were seen as future risks, conjectured at the time. The suite of policy proposals formulated in 2016 to limit these risks entailed both enhanced analysis and new policy regulations. The overall assessment of the policy actions proposed to contain risk resulting from structural changes in the financial system is presented in Table 7.

[19] We acknowledge that a unique definition or framework to monitor leverage across the financial system might be difficult to devise. Our analysis documents the work done so far at sectoral level.

Table 7 **Summary assessment: Risks related to changes in the structure of the financial system**

RISKS RELATED TO STRUCTURAL CHANGES IN THE FINANCIAL SYSTEM					
Risk timing	Policy no	Policy	Nature of the action	Assessment	
				Implementation	Sufficiency
Future/ conjectured risks	B.2.1.1	Develop sectoral EU stress tests; develop system-wide stress tests for implementation in the long term	Analysis	In progress	NO
	B.2.2.1	Ensure cross-sector consistency of tools to avoid regulatory arbitrage, by fostering activity-based regulation	Regulation	Not implemented	NO
	B.2.2.2	Develop a macroprudential strategy extending beyond banking and ensure its implementation	Analysis/ Regulation	Partly implemented	NO

Source: ESRB, LIRE WS3 Assessment.

The three policy proposals presented serious intellectual and political challenges due to their system-wide reach. This has affected the pace of their implementation.

The development of activity-based regulation and assuring cross-sector consistency of regulations (Policy B.2.2.1) are the areas where the least progress has been identified. This policy proposal was formulated to bring in regulations focusing on the nature of the activities (instead of targeting a given subset of institutions) and regulatory arbitrage, in a financial environment in which non-banks are starting to provide bank-like services and financial markets are expected to begin playing a bigger role.[20] To date, legislation cutting across all sectors of the financial system is still very new and much debated. Macroprudential regulation, especially for the EU, is at present, entity based: instruments, such as LTV caps and caps on leveraged loans, that limit indebtedness irrespective of the type of lender, are still far from common. In some countries, borrower-based measures are implemented across the financial system as part of the consumer protection framework and are not viewed as macroprudential policies. In general, bank-like activities across the non-banking sector are still limited and despite ongoing discussions among policymakers (see, for instance, Policy B.2.2.2 below), little significant material progress has been observed and this part of the macroprudential framework therefore remains largely incomplete.[21]

[20] See, for instance **Statistical Newsreleases** DNB 2019.

[21] The ESRB Non-Banking Financial Institutions (NBFIs) Monitor (October 2020) presents both an entity and an activity-based discussion of systemic risks and vulnerabilities related to non-bank financial intermediation.

Somewhat more progress was identified with respect to the development and implementation of sectoral and system-wide stress tests (Policy B.2.1.1). Currently, all European supervisory authorities (ESAs) conduct regular sectoral stress testing exercises. Against the background of the COVID-19 pandemic, the ESRB published the results of a top-down analysis that attempted to quantify the potential impact of a mass bond downgrade scenario on the EU financial system.[22] The ECB, with the collaboration of national central banks (NCBs) in the Eurosystem, has been working on the development of an analytical stress testing framework capturing the interactions between banks and non-bank financial institutions through the use of a range of granular data sets. This new framework would make it possible to assess the impact of an adverse macro-financial scenario on individual financial entities and on the financial system as a whole.[23] As the earliest horizon for implementation of this framework is the end of 2021, we view these actions to be important, but not yet sufficient. The completion of this project is closely intertwined with another key challenge, the development of a map of the financial system and its interconnectedness (Policy B 1.1.1).

Finally, the actions taken to develop and implement a strategy for macroprudential policy beyond the banking system are also considered insufficient, despite the significant progress made (Policy B.2.2.2). The ESRB 2016 strategy paper on macroprudential policy extending beyond banking and the policy papers issued by the ESAs[24], are important steps forward but have not led to a fully developed macroprudential framework extending beyond banks. However, some of the policy proposals discussed earlier can be seen as steps towards the implementation of such a framework. Examples include moves towards activity-based regulation and prudent lending standards across institutions and review of leverage, liquidity and funding regulations.[25] Full implementation of these policies would significantly contribute to the sufficiency of progress with Policy B.2.2.2. Even if the actions have not yet led to a fully developed macroprudential framework extending beyond the banking sector, significant progress towards the creation of a framework has been made.

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22 See **A system-wide scenario analysis of large-scale corporate bond downgrades**, European Systemic Risk Board, Frankfurt am Main, 2020.

23 The framework will be able to consider direct and indirect contagion mechanisms, liquidity and solvency interactions, dynamic balance-sheet developments and the related reactions of the different financial institutions that may, in turn, lead to material amplification effects. It will cover banks, investment funds, insurance companies and potentially CCPs and hedge funds.

24 See factsheet B.2.2.2.

25 Policies A.2.2.1, A.2.2.2, B.1.1.2., B.1.2.1, B.1.2.2, B.1.2.3.

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