I

(Resolutions, recommendations and opinions)

RECOMMENDATIONS

EUROPEAN SYSTEMIC RISK BOARD

RECOMMENDATION OF THE EUROPEAN SYSTEMIC RISK BOARD

of 31 October 2016

on closing real estate data gaps

(ESRB/2016/14)

(2017/C 31/01)

THE GENERAL BOARD OF THE EUROPEAN SYSTEMIC RISK BOARD,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) No 1092/2010 of the European Parliament and of the Council of 24 November 2010 on European Union macroprudential oversight of the financial system and establishing a European Systemic Risk Board [1], and in particular Article 3(2)(b), (d) and (f) and Articles 16 to 18 thereof,

Having regard to Decision ESRB/2011/1 of the European Systemic Risk Board of 20 January 2011 adopting the Rules of Procedure of the European Systemic Risk Board [2], and in particular Articles 18 to 20 thereof,

Whereas:

(1) The real estate sector plays an important role in the economy and its developments can have a material influence on the financial system. Past financial crises demonstrated that unsustainable developments in real estate markets may have severe repercussions on the stability of the financial system and of the economy as a whole. Adverse real estate market developments in some Member States, both in residential real estate (RRE) and commercial real estate (CRE), resulted in large losses in the past and negatively impacted the real economy. This reflects the close interplay between the real estate sector, funding providers and other economic sectors, and the strong feedback loops between the financial system and the real economy, reinforcing any negative developments.

(2) These linkages are important because they indicate that risks originating in the real estate sector can have a systemic impact that is procyclical in nature. Financial system vulnerabilities tend to accumulate during the upswing phase of the real estate cycle. The perceived lower risks and easier access to funding may contribute to rapid credit and investment expansion, along with an increased demand for real estate, putting upward pressure on property prices. Since the resulting higher collateral values further favour the demand for and supply of credit, these self-reinforcing dynamics can result in speculative bubbles. Conversely, during the downturn phase of the real estate cycle, tighter credit conditions, higher risk aversion and downward pressure on real estate prices may adversely affect the resilience of borrowers and lenders, thereby weakening economic conditions.

(3) Establishing a more harmonised framework for monitoring developments in the RRE and CRE markets, the segments of the real estate sector most relevant for financial stability purposes, is therefore crucial to ensure early identification of vulnerabilities that could lead to future financial crises. Policymakers need to have a certain set of relevant information available, including a reliable set of key indicators, to help identify the build-up of systemic risks and assess the potential need for macroprudential intervention. In addition, these indicators can play an important role in determining whether and when to tighten or release the harmonised macroprudential instruments targeting lenders that are available under Union law. Furthermore, the indicators can also be used to guide national authorities in the use of national macroprudential instruments that target borrowers.

[1] OJ L 331, 15.12.2010, p. 1.
[2] OJ C 58, 24.2.2011, p. 4.

(4) The lack of commonly agreed working definitions across Member States on the RRE and CRE sectors, along with operational constraints on data availability for a number of relevant indicators, hampers the reliability of financial stability analyses, making it difficult to accurately assess and compare risks across national markets. On the RRE side, earlier work by the European Systemic Risk Board (ESRB) ([1]) has highlighted that comparable high-quality data on some key metrics needed for financial stability surveillance and policy-making are still not available. In addition, the assessment of the ability of these indicators to provide early warnings against the build-up of systemic risks has been hampered by the absence of reliable and harmonised time series. On the CRE side, similar ESRB work ([2]) concluded that the absence of a harmonised working definition of commercial property and the lack of a granular and consistent data framework to capture broader market developments made the analyses of systemic risks problematic.

(5) Measures have been designed and implemented across Member States to dampen the procyclical effects of real estate markets and to strengthen the resilience of credit institutions against negative spillovers arising from real estate market dynamics. In addition, the prudential rules for the Union's banking sector, as laid down in Regulation (EU) No 575/2013 of the European Parliament and of the Council ([3]) and Directive 2013/36/EU of the European Parliament and of the Council ([4]), introduced a set of instruments, such as sectoral capital requirements, aimed at mitigating risks emerging in specific sectors, including real estate. The Union's prudential framework focusses mainly on capital-based measures targeting the capital structure of credit institutions. Instruments targeting borrowers, such as limits on the loan-to-value ratio, the loan-to-income ratio, the debt-to-income ratio, the interest coverage ratio and the debt-service-to-income ratio or the debt service coverage ratio, fall outside the scope of Regulation (EU) No 575/2013 and Directive 2013/36/EU and their implementation is governed by national law. Some of these instruments have already been activated by several Member States, although the definitions of the instruments and indicators vary.

(6) In carrying out its task, the ESRB should contribute to ensuring financial stability and mitigating the negative impacts on the internal market and the real economy. For these purposes, the availability of harmonised working definitions and a core set of comparable and timely available real estate indicators are of key importance. A better understanding of the structural and cyclical characteristics of RRE and CRE markets in the Union will be helpful in allowing national macroprudential authorities to better track the dynamics of the real estate sector, to identify the threats it may pose to financial stability and to guide appropriate action.

(7) Existing gaps in the availability and comparability of data on RRE and CRE markets in the Union relevant for macroprudential purposes should therefore be addressed. Accordingly, target working definitions of RRE and CRE should be provided for this purpose. In addition, a common set of indicators that national macroprudential authorities are recommended to monitor in order to assess risks resulting from the RRE and CRE sectors should be identified, along with target definitions of these indicators. The guidance should further specify the dimensions and degree of granularity for each indicator, the scope of the envisaged information and the measurement of the indicators.

(8) The adoption of harmonised definitions and methods for measuring indicators used for monitoring RRE and CRE markets does not prevent national macroprudential authorities from relying, for their internal risk and policy assessment, on real estate indicators based on their own definitions and metrics, which may be better suited to accommodate national requirements.

(9) Considering the strong procyclical nature of developments in CRE markets, risk monitoring in these markets should be performed more frequently than the monitoring of the RRE markets. Therefore, for the physical market as well as investment and credit flows and corresponding lending standards, monitoring should take place at least quarterly. Monitoring of the stocks of investments and lending and the corresponding lending standards in the CRE sector, as well as the development of lending standards in the RRE sector, should take place at least once a year.

([1]) ESRB, *Report on residential real estate and financial stability in the EU*, December 2015.

([2]) ESRB, *Report on commercial real estate and financial stability in the EU*, December 2015.

([3]) 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).

([4]) 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 (OJ L 176, 27.6.2013, p. 338).

(10) As CRE markets are heterogeneous, national macroprudential authorities should be encouraged to break down the common set of indicators according to relevant dimensions, such as the property type, the location of the property, and the type and nationality of the market participants. Moreover, the ESRB encourages national macroprudential authorities to consider information on the distribution of key indicators such as the loan-to-value at origination ratio, the current loan-to-value ratio, the interest coverage ratio and the debt service coverage ratio according to relevant risk buckets. Since, at this juncture, information on such distributions is not available at Union level, no specific guidance can be given as regards to relevant risk buckets for these CRE indicators. In the absence of more specific information, a monitoring on the basis of distribution characteristics of the indicators (e.g. quantiles) can be an alternative, with a need to focus on tail risks (i.e. the upper or lower quantiles depending on the indicator at hand).

(11) CRE markets are typically characterised by a wide range of market participants, often foreign-based and sometimes not subject to any microprudential or macroprudential supervision. The European Supervisory Authorities (ESAs) should therefore be encouraged to publish, on an annual basis, relevant aggregated data at country level on the activity in CRE markets of the entities under the scope of their supervision, drawing on data collected through existing regulatory reporting templates. Such public disclosure will enhance the knowledge of national macroprudential authorities on the activity of entities from other Member States on their domestic CRE market.

(12) In addition to using quantitative indicators, the ESRB encourages national macroprudential authorities to monitor developments in real estate markets through regular contacts with relevant market participants, in particular for the CRE sector.

(13) This Recommendation has been prepared taking into account other ongoing international and European initiatives in the area of data harmonisation and collection, the most relevant in the context of closing real estate data gaps being Regulation (EU) 2016/867 of the European Central Bank [1], which introduced the AnaCredit project. However, AnaCredit cannot be relied on alone for meeting the information needs identified in this Recommendation due to some of its features. First, the definitions of RRE and CRE provided in the Recommendation are more detailed and better suited for financial stability purposes than those laid down in the Regulation (EU) 2016/867, which only refers to the definitions in the Regulation (EU) No 575/2013. Second, information on some key indicators and market segments identified as important for financial stability in this Recommendation (such as the buy-to-let segment) is not provided for in Regulation (EU) 2016/867. Third, only euro area Member States are within the scope of AnaCredit. Non-euro area Member States have the option to participate on a voluntary basis, but at this stage it is still unclear which Member States will opt for this. Fourth, AnaCredit is currently restricted to legal persons and other institutional units, including non-financial corporations. Information on credit to natural persons is not yet within its scope and the timing of such extension is not yet defined. Fifth, AnaCredit collects loans held or serviced by credit institutions. This approach implies that loans held by other market participants are registered in AnaCredit only when a credit institution is servicing the loan. The importance of other market participants in real estate financing, in particular CRE property, requires a large collection of loans granted by these institutions. As set out in Recitals (10) and (12) of the Regulation ECB/2016/13, when preparing future stages of AnaCredit, the scope of loans in this market segment will be assessed as part of the merits and costs procedure, prior to possible extensions of the reporting population and of the reporting requirements to better cover RRE and CRE loans. Sixth, in application of the proportionality principle small banks may be excluded from the scope of AnaCredit [2] although a macroprudential authority might consider that also their activity in the real estate sector needs to be monitored for reasons of financial stability.

(14) In order to achieve a coherent implementation of the real estate indicators and to build upon existing decisions, structures, projects and methodological work, it is advised to liaise with the AnaCredit project for the implementation of this Recommendation.

(15) The purpose of the Recommendation is that national macroprudential authorities implement a framework for monitoring developments in the real estate sector relevant for financial stability and based on the recommended commonly agreed target definitions and indicators. The ESRB is also of the view that it would be beneficial

[1] Regulation (EU) 2016/867 of the European Central Bank of 18 May 2016 on the collection of granular credit and credit risk data (ECB/2016/13) (OJ L 144, 1.6.2016, p. 44).

[2] National central banks may grant derogations to small credit institutions provided that the combined contribution of all credit institutions that are granted a derogation to the total outstanding amount of loans in the reporting Member State does not exceed 2 %.

for financial stability and macroprudential policymaking to regularly collect and distribute at Union level comparable country data on these indicators. This would not only allow a more accurate assessment of real estate-related risks across Member States, but also a comparison of the use of macroprudential policy instruments activated by the Member States to address real estate-related vulnerabilities. Under Article 2 of Council Regulation (EU) No 1096/2010 of 17 November 2010 conferring specific tasks upon the European Central Bank (ECB) concerning the functioning of the ESRB, the ECB is required to provide analytical, statistical, logistical and administrative support to the ESRB. The ECB is therefore well-placed to coordinate such a data collection and distribution at Union level. Work on this should be initiated immediately after the adoption of the Recommendation, in consultation with Eurostat and the national statistical agencies as appropriate. As macroprudential authorities start implementing the Recommendation and the actual data collection at Union level proceeds, further technical guidance and work on the target definitions and indicators will be needed to accommodate for the specificities of markets or market segments and to ensure the statistical quality of the data; however, any such more detailed implementation guidance should not change the basic features and purpose of the target definitions and indicators as laid down in this Recommendation.

(16) In the implementation of this Recommendation and the further technical work mentioned in Recital (15), due regard should be paid to the principle of proportionality. When proceeding with the implementation of the relevant indicators and methods for their calculation, the size and development of the national RRE and CRE markets should be taken into account. Any assessment as regards the implementation of the Recommendation should consider the progress and constraints faced in the data collection at Union level mentioned in Recital (15). In particular, the final reports due by end 2020 for Recommendations A to D may not necessarily include all key indicators if justified by such constraints.

(17) This Recommendation is without prejudice to the monetary policy mandates of the central banks in the Union.

(18) The observations of the relevant private sector stakeholders have been taken into account in preparing this Recommendation.

(19) ESRB recommendations are published after the General Board has informed the Council of its intention to do so and provided the Council with an opportunity to react,

HAS ADOPTED THIS RECOMMENDATION:

SECTION 1

RECOMMENDATIONS

Recommendation A – Monitoring risks arising from the residential real estate sector

1. National macroprudential authorities are recommended to implement a risk monitoring framework for their domestic RRE sector, including information on current lending standards for domestic RRE loans. For this purpose, the following set of lending standards indicators is recommended for effective monitoring of risks arising from the RRE market:

   (a) loan-to-value ratio at origination (LTV-O);

   (b) current loan-to-value ratio (LTV-C);

   (c) loan-to-income ratio at origination (LTI-O);

   (d) debt-to-income ratio at origination (DTI-O);

   (e) loan-service-to-income ratio at origination (LSTI-O);

   (f) debt-service-to-income ratio at origination (DSTI-O) as optional indicator;

   (g) number and amount of RRE loans disbursed;

   (h) maturity of the RRE loans at origination.

   The information on these indicators should relate to domestic credit providers on a solo basis and should be sufficiently representative of the domestic RRE loan market.

2. Where buy-to-let housing represents a significant source of risks stemming from the domestic real estate sector, possibly but not only because it constitutes a significant share of the stock or flows of total RRE lending, national macroprudential authorities are recommended to implement a risk monitoring framework based on a number of additional indicators for this market segment. Where no or limited quantitative information is available to assess the significance of buy-to-let housing, this assessment may initially have to be made on the basis of more qualitative information. The additional indicators for this market segment should include:

   (a) interest coverage ratio at origination (ICR-O);

   (b) loan-to-rent ratio at origination (LTR-O).

3. For the calculation of the indicators listed in paragraphs 1 and 2, national macroprudential authorities are recommended to follow the guidance specified in Annex IV to this Recommendation.

4. On the basis of the indicators laid down in paragraphs 1 and 2, national macroprudential authorities are recommended to monitor developments in the domestic RRE sector at least annually.

Recommendation B – Relevant information in relation to the residential real estate sector

1. National macroprudential authorities are recommended to monitor the univariate distribution and the selected joint distributions of the relevant indicators as specified in Template A of Annex II to this Recommendation. This template provides guidance on the granularity of the information relevant for the monitoring of risks arising from the domestic RRE sector.

2. National macroprudential authorities are recommended to monitor risks in relation to the different indicators on the basis of the following information as specified in Template A of Annex II to this Recommendation.

   (a) For the flows of RRE loans granted in the reporting period, national macroprudential authorities should consider:

   — the total number of contracts and the associated amount in national currency;

   — the number of contracts and the associated amount in national currency broken down by the categories specified in Template A of Annex II to this Recommendation.

   (b) For the LTV-O and LSTI-O related to the flows of RRE loans, national macroprudential authorities should consider:

   — the weighted average of the relevant ratio expressed as a percentage;

   — the weighted average of the relevant ratio expressed as a percentage broken down by the categories as specified in Template A of Annex II to this Recommendation;

   — the number of contracts and the associated amount in national currency broken down by the distribution buckets as specified in Template A of Annex II to this Recommendation.

   (c) For the DSTI-O (optional indicator) related to the flows of RRE loans, national macroprudential authorities should consider:

   — the weighted average of the relevant ratio expressed as a percentage;

   — the number of contracts and the associated amount in national currency broken down by the distribution buckets as specified in Template A of Annex II to this Recommendation.

   (d) For the LTV-C related to the stock of RRE loans, national macroprudential authorities should consider:

   — the weighted average of the relevant ratio expressed as a percentage;

   — the number of contracts and the associated amount in national currency broken down by the distribution buckets specified in Template A of Annex II to this Recommendation.

(e) For the maturity at origination related to the flows of RRE loans, national macroprudential authorities should consider:

— the weighted average maturity in years;

— the number of contracts and the associated amount in national currency broken down by the distribution buckets specified in Template A of Annex II to this Recommendation.

(f) For LTI-O and DTI-O related to the flows of RRE loans, national macroprudential authorities should consider:

— the weighted average of the relevant ratio;

— the number of contracts and the associated amount in national currency broken down by the distribution buckets specified in Template A of Annex II to this Recommendation.

(g) For the joint distribution of LSTI-O, LTV-O and RRE loan maturity at origination of the flows of RRE loans, national macroprudential authorities should consider the number of contracts and the associated amount in national currency broken down by the categories specified in Template A of Annex II to this Recommendation.

(h) For the joint distribution of LSTI-O and the initial interest rate fixation period of the flows of RRE loans, national macroprudential authorities should consider the number of contracts and the associated amount in national currency broken down by the categories specified in Template A of Annex II to this Recommendation.

(i) For the joint distribution of DTI-O and LTV-O of the flows of RRE loans, national macroprudential authorities should consider the number of contracts and the associated amount in national currency broken down by the categories specified in Template A of Annex II to this Recommendation.

3. Where buy-to-let housing represents a significant source of risks stemming from the domestic RRE sector, possibly but not only because it constitutes a significant share of the stock or flows of total RRE lending, national macroprudential authorities are recommended to monitor risks in relation to the relevant indicators separately for buy-to-let housing and owner-occupied properties. In this case, national macroprudential authorities should consider also the breakdowns specified in Template B of Annex II to this Recommendation.

Recommendation C – Monitoring risks arising from the commercial real estate sector

1. National macroprudential authorities are recommended to implement a risk monitoring framework for their domestic CRE sector. For this purpose, the following set of indicators is recommended for effective monitoring of risks arising from the CRE market:

Indicators on the physical CRE market:

(a) price index;

(b) rental index;

(c) rental yield index;

(d) vacancy rates;

(e) construction starts;

Indicators on the financial system's CRE credit exposures:

(f) CRE lending flows (including property under development);

(g) flows of non-performing CRE loans (including property under development);

(h) flows of loan loss provisions on CRE lending (including property under development);

(i) flows of loan loss provisions on lending for property under development (as part of CRE lending);

(j) CRE lending stocks (including property under development);

(k) stocks of non-performing CRE loans (including property under development);

(l) stocks of loan loss provisions on CRE lending (including property under development);

(m) stocks of lending for property under development (as part of CRE lending);

(n) stocks of non-performing loans for property under development (as part of CRE lending);

(o) stocks of loan loss provisions on lending for property under development (as part of CRE lending).

Indicators on CRE lending standards:

(p) weighted average of the LTV-O for the flows of CRE loans;

(q) weighted average of the current loan-to-value ratio (LTV-C) for the stocks of CRE loans;

(r) weighted average of the interest coverage ratio at origination (ICR-O) for the flows of CRE loans and weighted average of the current interest coverage ratio (ICR-C) for the stocks of CRE loans;

(s) weighted average of the debt service coverage ratio at origination (DSCR-O) for the flows of CRE loans and weighted average of the current debt service coverage ratio (DSCR-C) for the stocks of CRE loans.

The information on these indicators should relate to credit providers on a solo basis and should be sufficiently representative of the domestic CRE market.

2. Where investments are deemed to represent a significant share of CRE financing, national macroprudential authorities are recommended to include in the risks monitoring framework for their domestic CRE sector also the following set of additional indicators on CRE investment exposures:

(a) direct and indirect CRE investment flows;

(b) valuation adjustments flows on CRE investments;

(c) direct and indirect CRE investment stocks;

(d) valuation adjustments stocks on CRE investments.

The information on these indicators should relate to investors on a solo basis and should be sufficiently representative of the domestic CRE market.

3. For the calculation of the indicators listed in paragraphs 1 and 2, national macroprudential authorities are recommended to follow the guidance specified in Annex V and, where appropriate for CRE, in Annex IV to this Recommendation.

4. On the basis of the indicators laid down in paragraphs 1 and 2, national macroprudential authorities are recommended to monitor developments in the domestic CRE sector at least quarterly for the physical market, lending and investment flows (including flows of non-performing loans, loan loss provisions and valuation adjustments on investments) and the corresponding lending standards. Such monitoring should take place at least annually for the stock of loans and investments (including stocks of non-performing loans, loan loss provisions and valuation adjustments on investments) and the corresponding lending standards.

Recommendation D – Relevant information in relation to the commercial real estate sector

1. National macroprudential authorities are recommended to monitor the relevant indicators as specified in Templates A, B and C of Annex III to this Recommendation. These templates provide guidance on the granularity of the information necessary to monitor risks arising from the domestic CRE sector.

2. National macroprudential authorities are recommended to monitor risks in relation to the different indicators on the basis of the following information as specified in Templates A, B and C of Annex III to this Recommendation:

   (a) For the price index, rental index, rental yield index, vacancy rates and construction starts, national macroprudential authorities should consider a breakdown by:

   — property type;

   — property location.

   (b) For flows and stocks of valuation adjustments on CRE investments, national macroprudential authorities should consider a breakdown by:

   — property type;

   — property location;

   — investor type;

   — investor nationality.

   (c) For CRE lending flows and stocks and the sub-category of lending for property under development, national macroprudential authorities should consider a breakdown by:

   — property type;

   — property location;

   — lender type;

   — lender nationality.

   (d) For flows and stocks of non-performing CRE loans and the sub-category of non-performing loans for property under development, national macroprudential authorities should consider a breakdown by:

   — property type;

   — property location;

   — lender type;

   — lender nationality.

   (e) For flows and stocks of loan loss provisions on CRE lending and the sub-category of loan loss provisions on lending for property under development, national macroprudential authorities should consider a breakdown by:

   — property type;

   — property location;

   — lender type;

   — lender nationality.

3. Where investments are deemed to represent a significant share of CRE financing, national macroprudential authorities are recommended to include in the risks monitoring framework for their domestic CRE sector also the following set of additional information on CRE investment exposures as specified in Template B of Annex III to this Recommendation:

(a) For CRE investment flows and stocks, national macroprudential authorities should consider a breakdown by:

— direct CRE holdings;

— indirect CRE holdings.

(b) For direct CRE investment flows and stocks, national macroprudential authorities should consider a breakdown by:

— property type;

— property location;

— investor type;

— investor nationality.

(c) For indirect CRE investment flows and stocks, national macroprudential authorities should consider a breakdown by:

— investor type;

— investor nationality.

Recommendation E – Publication by the European Supervisory Authorities of exposure data to national commercial real estate markets

1. The European Banking Authority (EBA), the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA) are recommended to publish, at least annually, aggregated data on the exposures of the entities subject to their respective supervision to each national CRE market in the Union in accordance with the guidance provided in Annex V.9 to this Recommendation. These aggregated data should be based on information available to the ESAs under existing reporting requirements.

SECTION 2

IMPLEMENTATION

1. **Definitions**

1. For the purposes of this Recommendation, and taking into account the further technical specifications in Annex IV and Annex V to this Recommendation, the following definitions apply:

(1) 'borrower' means the signatory, or cosignatory, of the RRE loan contract or CRE loan contract and receiving financing from the lender;

(2) 'buy-to-let loan' means the sum of all loans or loan tranches secured by the borrower on the buy-to-let property at the moment of loan origination;

(3) 'buy-to-let housing or property' means any RRE directly owned by a private household primarily for letting to tenants;

(4) 'commercial real estate' (CRE) means any income-producing real estate, either existing or under development, and excludes:

(a) social housing;

(b) property owned by end-users;

(c) buy-to-let housing.

If a property has a mixed CRE and RRE use, it should be considered as different properties (based for example on the surface areas dedicated to each use) whenever it is feasible to make such breakdown; otherwise, the property can be classified according to its dominant use;

(5) 'commercial real estate (CRE) loan' means a loan aimed at acquiring a CRE property (or set of CRE properties) or secured by a CRE property (or set of CRE properties);

(6) 'construction starts' means the surface area, in square metres, of new commercial construction projects begun during the reporting period; if such information is not available, construction starts may refer to the number of new commercial construction projects begun during the reporting period;

(7) 'current loan-to-value ratio' (LTV-C) means the sum of all loans or loan tranches secured by the borrower on a property at the reporting date relative to the current value of the property;

(8) 'current value of the property' means the value of the property as assessed by an independent external or internal appraiser; if such assessment is not available, the current value of the property can be estimated using a real estate value index sufficiently granular with respect to geographical location and type of property; if such real estate value index is also not available, a real estate price index sufficiently granular with respect to geographical location and type of property can be used after application of a suitably chosen mark-down to account for the depreciation of the property;

(9) 'debt service' means the combined interest and principal repayment on a borrower's total debt over a given period (generally one year);

(10) 'debt service coverage ratio' (DSCR) means the annual rental income generated by a CRE property that is at least partially financed by debt, net of taxes and any operational expenses to maintain the property's value, relative to the annual debt service on the loan secured by the property; the ratio can refer to its value at loan origination (DSCR-O) or its current value (DSCR-C);

(11) 'debt-service-to-income ratio at origination' (DSTI-O) means the annual total debt service relative to the borrower's total annual disposable income at the moment of loan origination;

(12) 'debt-to-income ratio at origination' (DTI-O) means the total debt of the borrower at the moment of loan origination relative to the borrower's total annual disposable income at the moment of loan origination;

(13) 'disposable income' means the borrower's total yearly disposable income as registered by the credit provider at the moment of the RRE loan origination, covering all sources of income minus taxes (net of tax rebates) and premiums (such as for health care, social security or medical insurance), and before deduction of expenses;

(14) 'first time buyer' means a borrower to whom no RRE loan has been advanced before; in case there is more than one borrower (the case of RRE loan cosignatories) and one or more of these borrowers has previously been advanced an RRE loan, none of these borrowers is considered to be a first-time buyer;

(15) 'flows of loans' means any new production of loans over the reporting period; renegotiated loans should be included in the new production if the lender considers them as new loan contracts;

(16) 'fully amortising loan' means a RRE loan characterised by periodic principal repayments, according to an amortization schedule, over the life of the loan so that the principal is fully paid back at the maturity of the loan;

(17) 'income-producing real estate' means all immovable properties with income generated by their rents or profits from their sale;

(18) 'interest coverage ratio' (ICR) means the gross annual rental income (i.e. before operational expenses and taxes) accruing from a buy-to-let property or the net annual rental income accruing from a CRE property or set of properties relative to the annual interest cost of the loan secured by the property or set of properties; the ratio can refer to its value at loan origination (ICR-O) or its current value (ICR-C);

(19) 'loan loss provisions' means the total amount of provisions made on loan portfolios to account for potential future credit losses;

(20) 'loans disbursed' means the total RRE loans (in number of loans or loan amount) granted in the reporting period;

(21) 'loan service' means the combined interest and principal repayment on a borrower's RRE loan over a given period (generally one year);

(22) 'loan service-to-income ratio at origination' (LSTI-O) means the annual RRE loan service relative to the borrower's total annual disposable income at the moment of loan origination;

(23) 'loan-to-cost ratio' (LTC) means the initial amount of all loans granted relative to the amount of costs associated with the development of a property until completion;

(24) 'loan-to-income ratio at origination' (LTI-O) means the sum of all loans or loan tranches secured by the borrower on the immovable property at the moment of loan origination relative to the borrower's total annual disposable income at the moment of loan origination;

(25) 'loan-to-rent ratio at origination' (LTR-O) means the buy-to-let loan of the borrower at the moment of loan origination relative to the gross annual rental income (i.e. before operational expenses and taxes) accruing from the buy-to-let property;

(26) 'loan-to-value ratio at origination' (LTV-O) means the sum of all loans or loan tranches secured by the borrower on the immovable property at the moment of loan origination relative to the value of the property at the moment of loan origination;

(27) 'maturity at origination' means the duration of the RRE loan contract expressed in years at the moment of loan origination;

(28) 'national macroprudential authority' means the authority entrusted by national legislation with the conduct of macroprudential policy as recommended in Recommendation B of Recommendation ESRB/2011/3 of the European Systemic Risk Board ([1]);

(29) 'non-amortising loan' means a RRE loan characterized by periodic payments of, at most, only the interest on the loan; where relevant, non-amortising loans for which redemption vehicles exist should be identified separately;

(30) 'non-performing loans' mean any credit exposures that satisfy either or both of the following criteria:

(a) material exposures that are more than 90 days past-due;

(b) the debtor is assessed as unlikely to pay its credit obligations in full without realisation of collateral, regardless of the existence of any past-due amount or of the number of days past due;

(31) 'owner occupied loan' means the sum of all RRE loans or loan tranches secured by the borrower on an owner occupied RRE property at the moment of loan origination;

(32) 'owner occupied housing or property' means any RRE owned by a private household with the purpose of providing shelter to its owner;

(33) 'partially amortising loans' means a combination of multiple RRE loans of different amortisation types;

(34) 'property under development' means all property still being constructed and intended to provide, upon completion, an income to its owner in the form of rents or profits from its sale; it does not include demolition of buildings or sites being cleared for possible development in the future;

(35) 'real estate value index' means an index that reflects both the change in price and quality of the property over time, such as an index constructed on the basis of transaction data;

(36) 'rent' means the amount of money actually paid by the tenant to the owner of the property, net of any incentives (e.g. rent free periods, contributions to refurbishment) and charges;

(37) 'rental yield' means the ratio of annual rents to the market value of the immovable property;

([1]) Recommendation ESRB/2011/3 of the European Systemic Risk Board of 22 December 2011 on the macro-prudential mandate of national authorities (OJ C 41, 14.2.2012, p. 1).

(38) 'residential real estate' (RRE) means any immovable property located in the domestic territory, available for dwelling purposes, acquired, built or renovated by a private household and that is not qualified as a CRE property. If a property has a mixed use, it should be considered as different properties (based for example on the surface areas dedicated to each use) whenever it is feasible to make such breakdown; otherwise, the property can be classified according to its dominant use;

(39) 'residential real estate' (RRE) loan means a loan to a private household secured by a RRE property independent of the purpose of the loan;

(40) 'risk monitoring framework' means a regular process of monitoring and assessing of the systemic risks stemming from the domestic real estate market, based on sound analytical methods and sufficiently representative data;

(41) 'sufficiently representative data' means data obtained by sampling techniques which refer to relevant characteristics known to be present in the statistical population; no specific sampling techniques are prescribed and national practices are considered adequate as long as, according to expert judgement, they can be considered to produce non-biased results;

(42) 'vacancy rate' means the surface area available for rent relative to the total surface area of the property;

(43) 'valuation adjustments on investments' means costs incurred by an investor to account for the potential future loss on investments due to prevailing market conditions;

(44) 'value at origination' means the lower of the transaction value of an immovable property (for example as registered in a notarial deed) and the value as assessed by an independent external or internal appraiser at loan origination; if only one value is available, this value should be used.

2. **Criteria for implementation**

1. The following criteria apply to the implementation of the Recommendation:

(a) the Recommendation covers only indicators necessary for financial stability purposes and for which data gaps were identified;

(b) due regard should be paid to the principle of proportionality, taking into account:

(i) the size and development of the CRE and RRE markets in Member States;

(ii) the powers of each national macroprudential authority;

(iii) the objective and content of each Recommendation;

(c) while assessing the implementation of Recommendations A to D, due regard should also be paid to the progress made on the data collection at Union level as referred to in Recital (15);

(d) specific criteria for compliance with Recommendations A to E are set out in Annex I to this Recommendation.

2. Addressees are requested to report to the ESRB and the Council on the actions undertaken in response to this Recommendation, or adequately justify any inaction. The reports should at minimum contain:

(a) information on the substance and timeline of the actions undertaken;

(b) an assessment of the functioning of the actions undertaken, having regard to the objectives of this Recommendation;

(c) detailed justification of any inaction or departure from this Recommendation, including any delays.

3. **Timeline for the follow-up**

Addressees are requested to report to the ESRB and the Council on the actions taken in response to this Recommendation, or adequately justify any inaction, in compliance with the following timelines:

1. *Recommendation A*

(a) By 31 December 2018, national macroprudential authorities are requested to deliver to the ESRB and the Council an interim report on the information already available, or expected to be available, for the implementation of Recommendation A.

(b) By 31 December 2020, national macroprudential authorities are requested to deliver to the ESRB and the Council a final report on the implementation of Recommendation A.

2. *Recommendation B*

(a) By 31 December 2018, national macroprudential authorities are requested to deliver to the ESRB and the Council an interim report on the information already available, or expected to be available, for the implementation of Recommendation B.

(b) By 31 December 2020, national macroprudential authorities are requested to deliver to the ESRB and the Council a final report on the implementation of Recommendation B.

3. *Recommendation C*

(a) By 31 December 2018, national macroprudential authorities are requested to deliver to the ESRB and the Council an interim report on the information already available, or expected to be available, for the implementation of Recommendation C.

(b) By 31 December 2020, national macroprudential authorities are requested to deliver to the ESRB and the Council a final report on the implementation of Recommendation C.

4. *Recommendation D*

(a) By 31 December 2018, national macroprudential authorities are requested to deliver to the ESRB and the Council an interim report on the information already available, or expected to be available, for the implementation of Recommendation D.

(b) By 31 December 2020, national macroprudential authorities are requested to deliver to the ESRB and the Council a final report on the implementation of Recommendation D.

5. *Recommendation E*

(a) By 31 December 2017, the ESAs are requested to define a template for the publication of data on the exposures of the entities under the scope of their supervision to each of the national CRE markets in the Union;

(b) By 30 June 2018, the ESAs are requested to publish the data referred to in point (a) as at 31 December 2017.

(c) Starting on 31 March 2019, the ESAs are requested to publish on an annual frequency, the data referred to in point (a) as at 31 December of the preceding year.

4. **Monitoring and assessment**

1. The ESRB Secretariat will:

(a) assist the addressees, ensuring the coordination of reporting, the provision of relevant templates and detailing where necessary the procedure and the timeline for the follow-up;

(b) verify the follow-up by the addressees, provide assistance at their request, and submit follow-up reports to the General Board via the Steering Committee.

2. The General Board will assess the actions and justifications reported by the addressees and, where appropriate, may decide that this Recommendation has not been followed and that an addressee has failed to provide adequate justification for its inaction.

Done at Frankfurt am Main, 31 October 2016.

Francesco MAZZAFERRO

Head of the ESRB Secretariat,

on behalf of the General Board of the ESRB

ANNEX I

COMPLIANCE CRITERIA FOR THE RECOMMENDATIONS

1. Recommendation A

National macroprudential authorities will be deemed to comply with Recommendations A(1) and A(2), where they:

a) assess whether the relevant indicators on lending standards for RRE loans are considered or implemented in the risk monitoring framework of the RRE sector in their jurisdiction;

b) assess progress on the use of the indicators specified in Recommendation A(1) for such monitoring;

c) assess the extent to which the information, already available or expected to be available in the future, on the relevant indicators is sufficiently representative of current lending standards in their RRE loan market;

d) assess whether buy-to-let housing represents a significant source of risks stemming from the domestic real estate sector or constitutes a significant share of the stock or flows of total RRE lending;

e) in cases where buy-to let housing is considered a significant source of risks stemming from the domestic real estate sector or constitutes a significant share of the stock or flows of total RRE lending, assess progress on the use of the indicators for risk monitoring specified in Recommendation A(2).

National macroprudential authorities will be deemed to comply with Recommendations A(3) and A(4) where they:

a) ensure the adoption of the methods specified in Annex IV for the calculation of the indicators listed in Recommendations A(1) and A(2);

b) in cases where another method is used in addition to that specified in Annex IV for the calculation of the relevant indicators, report on the method's technical features and its effectiveness in monitoring risks arising from the RRE sector;

c) ensure that the relevant indicators listed in Recommendations A(1) and A(2) are used to monitor risks in the RRE sector at least annually.

2. Recommendation B

National macroprudential authorities will be deemed to comply with Recommendations B(1) and B(2), where they:

a) assess progress on the monitoring of the univariate distribution and the selected joint distributions of the relevant indicators as specified in Template A of Annex II;

b) assess progress on the use of the information specified in Recommendation B(2) and in Template A of Annex II as a guidance to monitor the relevant risks.

In cases where buy-to-let housing is considered a significant source of risks stemming from the domestic real estate sector or constitutes a significant share of the stock or flows of total RRE lending, national macroprudential authorities will be deemed to comply with Recommendation B(3) where they:

a) assess progress on the separate monitoring of the relevant indicators for buy-to-let housing and owner occupied properties;

b) assess progress on the monitoring of the relevant data broken down by the dimensions as specified in Templates A and B of Annex II.

3. **Recommendation C**

National macroprudential authorities will be deemed to comply with Recommendations C(1) and C(2) where they:

a) assess whether the relevant indicators for domestic CRE exposures are considered or implemented in the risk monitoring framework for the CRE sector in their jurisdiction;

b) ensure inclusion in the risk monitoring framework of the indicators on the physical market, the indicators on financial system credit exposures and the indicators on lending standards; when collecting these types of indicators on the physical market is not within the powers of a macroprudential authority, such impossibility will be considered sufficient to explain the inaction of the relevant authority in the phase of the assessment;

c) assess whether investments represent a significant source of financing for the domestic CRE sector;

d) in cases where investments are considered a significant source of financing for the domestic CRE sector, assess progress on the use of the additional indicators for risk monitoring specified in Recommendation C(2);

e) assess progress on the use of the indicators specified, at a minimum, in Recommendation C(1) and, where applicable, in Recommendation C(2);

f) assess whether the information on these indicators (already available or expected to be available) is sufficiently representative of the domestic CRE market.

National macroprudential authorities will be deemed to comply with Recommendations C(3) and C(4) where they:

a) ensure the adoption of the methods for the calculation of the indicators listed in Recommendation C(1) and Recommendation C(2) as specified in Annex V and, where appropriate for CRE, in Annex IV;

b) in cases where another method is used in addition to that specified in Annex IV and Annex V for the calculation of the relevant indicators, report on the method's technical features and its effectiveness in monitoring risks arising from the CRE sector;

c) ensure that the indicators listed in Recommendation C(1) are used to monitor developments in the CRE sector at least quarterly for physical market indicators, lending flows (including flows of non-performing loans and loan loss provisions) and the corresponding lending standards, and at least annually for stocks of loans (including stocks of non-performing loans and loan loss provisions) and the corresponding lending standards;

d) in cases where investments are considered a significant source of financing for the domestic CRE sector, ensure that the indicators listed in Recommendation C(2) are used to monitor developments in the CRE sector at least quarterly for investment flows (including valuation adjustments on investments) and at least annually for stocks of investments (including valuation adjustments on investments).

4. **Recommendation D**

National macroprudential authorities will be deemed to comply with Recommendation D where they:

a) assess progress in monitoring the relevant indicators as specified in Templates A, B and C of Annex III;

b) assess progress on the use of the relevant information as specified in Recommendation D(2) and indicated in Templates A, B and C of Annex III as a guidance to monitor the relevant risks;

c) in cases where investments are considered a significant source of financing for the domestic CRE sector, assess progress on the use of the relevant information as specified in Recommendation D(3) and indicated in Template B of Annex III as a guidance to monitor relevant risks;

d) in cases where additional indicators are used to monitor developments in the CRE sector, report on the additional information used for monitoring risks.

5. **Recommendation E**

The ESAs will be deemed to comply with Recommendation E where they:

a) define a template for the publication of data on the exposures of the entities under the scope of their supervision to each national CRE market in the Union;

b) publish at least annually aggregated data collected under existing reporting requirements on the exposures of the entities under the scope of their supervision to each national CRE market in the Union.

ANNEX II

INDICATIVE TEMPLATES FOR INDICATORS ON THE RESIDENTIAL REAL ESTATE SECTOR

1. Template A: indicators and related breakdowns for RRE loans

FLOWS = new production of RRE loans within the reporting period, as considered by the lender. National macro-prudential authorities which are able to distinguish between truly new RRE loans and renegotiated loans are provided the option to identify renegotiated loans as a separate breakdown.
STOCKS = Data for the stocks of RRE loans at reporting date (e.g. end of year)
ncu = amount in national currency
# = number of contracts
y = year(s)
Avg = average of the relevant ratio
o/w = of which

UNIVARIATE DISTRIBUTION

Overview of RRE loan portfolio	FLOWS
Loans disbursed	ncu, #
o/w buy-to-let	ncu, #
o/w owner-occupied	ncu, #
o/w first-time buyers	ncu, #
o/w loans in foreign currency	ncu, #
o/w fully amortising	ncu, #
o/w partially amortising	ncu, #
o/w non-amortising (*)	ncu, #

Loan-service-to-income at origination (LSTI-O)	FLOWS
WEIGHTED AVERAGE	Avg (in %)
o/w buy-to-let	Avg (in %)
o/w owner-occupied	Avg (in %)
o/w first-time buyers	Avg (in %)
o/w loans in foreign currency	Avg (in %)
o/w fully amortising	Avg (in %)
o/w partly amortising	Avg (in %)
o/w non-amortising (*)	Avg (in %)

Overview of RRE loan portfolio	FLOWS
o/w ≤ 1y initial interest rate fixation period	ncu, #
o/w] 1y; 5y] initial interest rate fixation period	ncu, #
o/w] 5y; 10y] initial interest rate fixation period	ncu, #
o/w > 10y initial interest rate fixation period	ncu, #
o/w renegotiated (optional)	ncu, #

Loan-to-value at origination (LTV-O)	FLOWS
WEIGHTED AVERAGE	Avg (in %)
o/w buy-to-let	Avg (in %)
o/w owner-occupied	Avg (in %)
o/w first-time buyers	Avg (in %)
o/w loans in foreign currency	Avg (in %)
o/w fully amortising	Avg (in %)

Loan-service-to-income at origination (LSTI-O)	FLOWS
o/w ≤ 1y initial interest rate fixation period	Avg (in %)
o/w] 1y; 5y] initial interest rate fixation period	Avg (in %)
o/w] 5y; 10y] initial interest rate fixation period	Avg (in %)
o/w > 10y initial interest rate fixation period	Avg (in %)
DISTRIBUTION	
≤10 %	ncu, #
]10 % ; 20 %]	ncu, #
]20 % ; 30 %]	ncu, #
]30 % ; 40 %]	ncu, #
]40 % ; 50 %]	ncu, #
]50 % ; 60 %]	ncu, #
> 60 %	ncu, #
Not available	ncu, #

Loan-to-value at origination (LTV-O)	FLOWS
o/w partially amortising	Avg (in %)
o/w non-amortising (*)	Avg (in %)
DISTRIBUTION	
≤ 50 %	ncu, #
]50 % ; 60 %]	ncu, #
]60 % ; 70 %]	ncu, #
]70 % ; 80 %]	ncu, #
]80 % ; 90 %]	ncu, #
]90 % ; 100 %]	ncu, #
]100 % ; 110 %]	ncu, #
> 110 %	ncu, #
Not available	ncu, #

Debt-service-to-income at origination (DSTI-O) (OPTIONAL)	FLOWS
WEIGHTED AVERAGE	Avg (in %)
DISTRIBUTION	
≤10 %	ncu, #
]10 % ; 20 %]	ncu, #
]20 % ; 30 %]	ncu, #
]30 % ; 40 %]	ncu, #
]40 % ; 50 %]	ncu, #
]50 % ; 60 %]	ncu, #
> 60 %	ncu, #
Not available	ncu, #

Current loan-to-value (LTV-C)	STOCKS
WEIGHTED AVERAGE	Avg (in %)
DISTRIBUTION	
≤ 50 %	ncu, #
]50 % ; 60 %]	ncu, #

Loan-to-income at origination (LTI-O)	FLOWS
WEIGHTED AVERAGE	Avg
DISTRIBUTION	
≤3	ncu, #
]3 ; 3,5]	ncu, #

Current loan-to-value (LTV-C)	STOCKS
]60 % ; 70 %]	ncu, #
]70 % ; 80 %]	ncu, #
]80 % ; 90 %]	ncu, #
]90 % ; 100 %]	ncu, #
]100 % ; 110 %]	ncu, #
> 110 %	ncu, #
Not available	ncu, #

Loan-to-income at origination (LTI-O)	FLOWS
]3,5 ; 4]	ncu, #
]4 ; 4,5]	ncu, #
]4,5 ; 5]	ncu, #
]5 ; 5,5]	ncu, #
]5,5 ; 6]	ncu, #
> 6	ncu, #
Not available	ncu, #

Maturities at origination	FLOWS
WEIGHTED AVERAGE	Avg (years)
DISTRIBUTION	
≤ 5y	ncu, #
]5y ; 10y]	ncu, #
]10y ; 15y]	ncu, #
]15y ; 20y]	ncu, #
]20y ; 25y]	ncu, #
]25y ; 30y]	ncu, #
]30y ; 35y]	ncu, #
> 35y	ncu, #
Not available	ncu, #

Debt-to-income at origination (DTI-O)	FLOWS
WEIGHTED AVERAGE	Avg
DISTRIBUTION	
≤ 3	ncu, #
]3 ; 3,5]	ncu, #
]3,5 ; 4]	ncu, #
]4 ; 4,5]	ncu, #
]4,5 ; 5]	ncu, #
]5 ; 5,5]	ncu, #
]5,5 ; 6]	ncu, #
]6,5 ; 7]	ncu, #
> 7	ncu, #
Not available	ncu, #

JOINT DISTRIBUTION

FLOWS	Loan-service-to-income at origination (LSTI-O)		
	≤30 %	]30 % ; 50 %]	>50 %
LTV-O ≤ 80 %			
Maturity at origination			
≤ 20y	ncu, #	ncu, #	ncu, #
]20y ; 25y]	ncu, #	ncu, #	ncu, #
> 25y	ncu, #	ncu, #	ncu, #
LTV-O]80 %-90 %]			
Maturity at origination			
≤ 20y	ncu, #	ncu, #	ncu, #
]20y ; 25y]	ncu, #	ncu, #	ncu, #
> 25y	ncu, #	ncu, #	ncu, #
LTV-O]90 %-110 %]			
Maturity at origination			
≤ 20y	ncu, #	ncu, #	ncu, #
]20y ; 25y]	ncu, #	ncu, #	ncu, #
> 25y	ncu, #	ncu, #	ncu, #

FLOWS	Loan-service-to-income at origination (LSTI-O)		
Initial interest rate fixation period	≤30 %	]30 % ; 50 %]	>50 %
o/w ≤ 1y	ncu, #	ncu, #	ncu, #
o/w] 1y; 5y]	ncu, #	ncu, #	ncu, #
o/w] 5y; 10y]	ncu, #	ncu, #	ncu, #
o/w > 10y	ncu, #	ncu, #	ncu, #

FLOWS	Debt-to-income at origination (DTI-O)		
Loan-to-value at origination (LTV-O)	≤ 4	]4 ; 6]	> 6
LTV-O ≤ 80 %	ncu, #	ncu, #	ncu, #
LTV-O]80 % ; 90 %]	ncu, #	ncu, #	ncu, #
LTV-O]90 % ; 110 %]	ncu, #	ncu, #	ncu, #
LTV-O >110 %	ncu, #	ncu, #	ncu, #

FLOWS	Loan-service-to-income at origination (LSTI-O)		
LTV-O >110 %			
Maturity at origination			
≤ 20y	ncu, #	ncu, #	ncu, #
]20y ; 25y]	ncu, #	ncu, #	ncu, #
> 25y	ncu, #	ncu, #	ncu, #

(*) Where relevant, non-amortising loans for which redemption vehicles exist should be identified separately.

2. Template B: indicators and related breakdowns for buy-to-let and owner occupied RRE loans

FLOWS = new production of RRE loans within the reporting period, as considered by the lender. National macro-prudential authorities which are able to distinguish between truly new RRE loans and renegotiated loans are provided with the option to identify renegotiated loans as a separate breakdown.
STOCKS = Data for the stocks of RRE loans at reporting date (e.g. end of year)
ncu = amount in national currency
# = number of contracts
y = year(s)
Avg = average of the relevant ratio
o/w = of which

BUY-TO-LET LOANS

Overview of buy-to-let loans	FLOWS
Loans disbursed	ncu, #
o/w first-time buyers	ncu, #
o/w loans in foreign currency	ncu, #
o/w fully amortising	ncu, #

Interest coverage ratio at origination (ICR-O)	FLOWS
WEIGHTED AVERAGE	Avg
DISTRIBUTION	
≤ 100 %	ncu, #
] 100 % ; 125 %]	ncu, #

Overview of buy-to-let loans	FLOWS
o/w partially amortising	ncu, #
o/w non-amortising (*)	ncu, #
o/w ≤ 1y initial interest rate fixation period	ncu, #
o/w] 1y; 5y] initial interest rate fixation period	ncu, #
o/w] 5y; 10y] initial interest rate fixation period	ncu, #
o/w > 10y initial interest rate fixation period	ncu, #

Loan-to-value at origination (LTV-O)	FLOWS
WEIGHTED AVERAGE	Avg (in %)
DISTRIBUTION	
≤ 50 %	ncu, #
]50 % ; 60 %]	ncu, #
]60 % ; 70 %]	ncu, #
]70 % ; 80 %]	ncu, #
]80 % ; 90 %]	ncu, #
]90 % ; 100 %]	ncu, #
]100 % ; 110 %]	ncu, #
> 110 %	ncu, #
Not available	ncu, #

Interest coverage ratio at origination (ICR-O)	FLOWS
] 125 % ; 150 %]	ncu, #
] 150 % ; 175 %]	ncu, #
] 175 % ; 200 %]	ncu, #
> 200 %	ncu, #

Loan-to-rent ratio at origination (LTR-O)	FLOWS
WEIGHTED AVERAGE	Avg
DISTRIBUTION	
≤ 5	ncu, #
] 5 ; 10]	ncu, #
] 10 ; 15]	ncu, #
] 15 ; 20]	ncu, #
> 20	ncu, #

OWNER OCCUPIED LOANS

Overview of owner occupied loans	FLOWS
Loans disbursed	ncu, #
o/w first-time buyers	ncu, #
o/w loans in foreign currency	ncu, #
o/w fully amortising	ncu, #
o/w partially amortising	ncu, #
o/w non-amortising (*)	ncu, #
o/w ≤ 1y initial interest rate fixation period	ncu, #
o/w] 1y; 5y] initial interest rate fixation period	ncu, #
o/w] 5y; 10y] initial interest rate fixation period	ncu, #
o/w > 10y initial interest rate fixation period	ncu, #

Current loan-to-value (LTV-C)	FLOWS
WEIGHTED AVERAGE	Avg (in %)
o/w first-time buyers	Avg (in %)

Loan-service-to-income at origination (LSTI-O)	FLOWS
WEIGHTED AVERAGE	Avg (in %)
o/w first-time buyers	Avg (in %)
o/w loans in foreign currency	Avg (in %)
o/w fully amortising	Avg (in %)
o/w partly amortising	Avg (in %)
o/w non-amortising (*)	Avg (in %)
o/w ≤ 1y initial interest rate fixation period	Avg (in %)
o/w] 1y; 5y] initial interest rate fixation period	Avg (in %)
o/w] 5y; 10y] initial interest rate fixation period	Avg (in %)
o/w > 10y initial interest rate fixation period	Avg (in %)
DISTRIBUTION	
≤10 %	ncu, #
]10 % ; 20 %]	ncu, #
]20 % ; 30 %]	ncu, #
]30 % ; 40 %]	ncu, #

Current loan-to-value (LTV-C)	FLOWS
o/w loans in foreign currency	Avg (in %)
o/w fully amortising	Avg (in %)
o/w partially amortising	Avg (in %)
o/w non-amortising (*)	Avg (in %)
DISTRIBUTION	
≤ 50 %	ncu, #
]50 % ; 60 %]	ncu, #
]60 % ; 70 %]	ncu, #
]70 % ; 80 %]	ncu, #
]80 % ; 90 %]	ncu, #
]90 % ; 100 %]	ncu, #
]100 % ; 110 %]	ncu, #
> 110 %	ncu, #
Not available	ncu, #

Loan-service-to-income at origination (LSTI-O)	FLOWS
]40 % ; 50 %]	ncu, #
]50 % ; 60 %]	ncu, #
> 60 %	ncu, #
Not available	ncu, #

Loan-to-income at origination (LTI-O)	FLOWS
WEIGHTED AVERAGE	Avg
DISTRIBUTION	
≤ 3	ncu, #
]3 ; 3,5]	ncu, #
]3,5 ; 4]	ncu, #
]4 ; 4,5]	ncu, #
]4,5 ; 5]	ncu, #
]5 ; 5,5]	ncu, #
]5,5 ; 6]	ncu, #
> 6	ncu, #
Not available	ncu, #

Current loan-to-value (LTV-C)	STOCKS
WEIGHTED AVERAGE	Avg (in %)
DISTRIBUTION	
≤ 50 %	ncu, #
]50 % ; 60 %]	ncu, #
]60 % ; 70 %]	ncu, #
]70 % ; 80 %]	ncu, #
]80 % ; 90 %]	ncu, #
]90 % ; 100 %]	ncu, #
]100 % ; 110 %]	ncu, #
> 110 %	ncu, #
Not available	ncu, #

Maturities at origination in years	FLOWS
WEIGHTED AVERAGE	Avg (in years)
DISTRIBUTION	
≤ 5y	ncu, #
]5y ; 10y]	ncu, #
]10y ; 15y]	ncu, #
]15y ; 20y]	ncu, #
]20y ; 25y]	ncu, #
]25y ; 30y]	ncu, #
]30y ; 35y]	ncu, #
> 35y	ncu, #
Not available	ncu, #

(*) Where relevant, non-amortising loans for which redemption vehicles exist should be identified separately.

ANNEX III

INDICATIVE TEMPLATES FOR INDICATORS ON THE COMMERCIAL REAL ESTATE SECTOR

1. Template A: indicators on the physical market

	Indicator		**Breakdown**	
		Frequency	Property type (1)	Property location (2)
Physical market	CRE price index	Quarterly	I	I
	Rental index	Quarterly	I	I
	Rental yield index	Quarterly	I	I
	Vacancy rates	Quarterly	R	R
	Construction starts	Quarterly	#	#

(1) Property type is broken down into office, retail, industrial, residential and other (all domestic market).
(2) Property location is broken down into domestic prime and domestic non-prime.
I = Index
R = Ratio
# = Square metres

2. Template B: indicators on the financial system's exposures

	Indicator		**Breakdown**					**Total**
		Frequency	Property type (1)	Property location (2)	Investor type (3), (8)	Lender type (4)	Investor (8) / lender nationality (5)	
Flows (6)	Investments in CRE (8)	Quarterly	nc	nc	nc		nc	**nc**
	— of which direct CRE holdings	Quarterly	nc	nc	nc		nc	**nc**
	— of which indirect CRE holdings	Quarterly			nc		nc	**nc**
	Valuation adjustments on CRE investments	Quarterly	nc	nc	nc		nc	**nc**

	Indicator	Frequency	Breakdown					Total
			Property type [1]	Property location [2]	Investor type [3], [8]	Lender type [4]	Investor [8] / lender nationality [5]	
	Lending to CRE (incl. property under development)	Quarterly	nc	nc		nc	nc	**nc**
	— of which to property under development	Quarterly	nc	nc		nc	nc	**nc**
	Non-performing CRE loans (incl. property under development)	Quarterly	nc	nc		nc	nc	**nc**
	— of which to property under development	Quarterly	nc	nc		nc	nc	**nc**
	Loan loss provisions on CRE lending (incl. property under development)	Quarterly	nc	nc		nc	nc	**nc**
	— of which to property under development	Quarterly	nc	nc		nc	nc	**nc**

	Indicator	Frequency	Breakdown					Total
			Property type [1]	Property location [2]	Investor type [3], [8]	Lender type [4]	Investor [8] / lender nationality [5]	
Stocks [7]	Investments in CRE [8]	Annually	nc	nc	nc		nc	**nc**
	— of which direct CRE holdings	Annually	nc	nc	nc		nc	**nc**
	— of which indirect CRE holdings	Annually			nc		nc	**nc**
	Valuation adjustments on CRE investments	Annually	nc	nc	nc		nc	**nc**

	Indicator	Frequency	Breakdown					Total
			Property type [1]	Property location [2]	Investor type [3], [8]	Lender type [4]	Investor [8] / lender nationality [5]	
	Lending to CRE (incl. property under development)	Annually	nc	nc		nc	nc	**nc**
	— of which non-performing CRE loans	Annually	nc	nc		nc	nc	**nc**
	Loan loss provisions on CRE lending	Annually	nc	nc		nc	nc	**nc**
	Lending to property under development (as part of CRE lending)	Annually	nc	nc		nc	nc	**nc**
	— of which non-performing loans	Annually	nc	nc		nc	nc	**nc**
	Loan loss provisions on lending to property under development	Annually	nc	nc		nc	nc	**nc**

(1) Property type is broken down into office, retail, industrial, residential and other.
(2) Property location is broken down into domestic prime, domestic non-prime, and foreign.
(3) Investor type is broken down into banks, insurance companies, pension funds, investment funds, property companies and others.
(4) Lender type is broken down into banks, insurance companies, pension funds, investment funds, property companies and others.
(5) Nationality is broken down into domestic, European Economic Area and rest of the world.
(6) Flows are on a gross basis for investments, lending and non-performing loans (only new loans/investments are covered without taking into account repayments or reductions on existing amounts). Flows are on a net basis for valuation adjustments on investments and loan loss provisions.
(7) Stocks data for the stock of CRE investments, valuation adjustments on CRE investments, CRE (non-performing) loans and loan loss provisions on CRE lending at reporting date.
(8) Only in case investments represent a significant share of CRE financing.
nc = Amount in national currency

3. **Template C: indicators on lending standards** [1]

	Indicator	Frequency	Weighted average of ratios
Flows [2]	Loan-to-value at origination (LTV-O)	Quarterly	R
	Interest coverage ratio at origination (ICR-O)	Quarterly	R
	Debt service coverage ratio at origination (DSCR-O)	Quarterly	R

	Indicator	Frequency	Weighted average of ratios
Stocks (3)	Current loan-to-value (LTV-C)	Annual	R
	Current interest coverage ratio (ICR-C)	Annual	R
	Current debt service coverage ratio (DSCR-C)	Annual	R

(1) Excludes property under development, which can be monitored using the loan-to-cost (LTC) ratio.
(2) Flows data for the new production of CRE loans over the reporting period.
(3) Stocks data for the stock of CRE loans at reporting date.
R = Ratio

ANNEX IV

GUIDANCE ON THE METHODS FOR MEASURING AND CALCULATING THE INDICATORS

This Annex provides high-level guidance on the methods for calculating the indicators used in the Templates of Annex II and, where applicable, also Annex III. Its purpose is not to provide detailed technical instructions for completing the Templates covering all possible cases. Moreover, the guidance should be interpreted as covering target definitions and target methods, and in some cases divergences might be justified to accommodate for the specificities of markets or market segments.

1. **The loan-to-value ratio at origination (LTV-O)**

1. LTV-O is defined as:

$$LTVO = \frac{L}{V}$$

2. For the purpose of the calculation, 'L':

(a) Includes all loans or loan tranches secured by the borrower on the immovable property at the moment of origination (irrespective of the purpose of the loan), following an aggregation of loans 'by borrower' and 'by collateral'.

(b) Is measured based on disbursed amounts and therefore does not include any undrawn amounts on credit lines. In the case of property still being constructed, 'L' is the sum of all loan tranches disbursed up to the reporting date, and LTV-O is computed on the date of disbursement of any new loan tranche [1]. Alternatively, if the aforementioned calculation method is not available or does not correspond to the prevailing market practice, LTV-O can also be calculated on the basis of the total loan amount granted and the expected value upon completion of the RRE that is being constructed.

(c) Does not include loans that are not secured by the property, unless the reporting credit provider considers unsecured loans part of the housing loan financing transaction, combining both secured and unsecured loans. In that case, unsecured loans should also be included in 'L'.

(d) Is not adjusted for the presence of other credit risk mitigants.

(e) Does not include costs and fees related to the RRE loan,

(f) Does not include loan subsidies.

3. For the purpose of the calculation, 'V':

(a) Is computed on the basis of the property's value at origination, measured as the lower of:

1. the transaction value, e.g. as registered in a notarial deed, and

2. the value as assessed by an independent external or internal appraiser.

If only one value is available, this value should be used.

(b) Does not take into account the value of planned renovation or construction works.

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[1] In the case of property still being constructed, the LTV-O at a given point n can be calculated as:

$$LTVO_n = \frac{\sum_{i=1}^{n} L_i}{V_0 + \sum_{i=1}^{n} \Delta V_{i,i-1}}$$

Where $i = 1, \ldots, n$ refers to the loan tranches disbursed up to time n, V_0 is the initial value of the real estate collateral (e.g. land) and $\Delta V_{i,i-1}$ represents the change in the property's value that occurred during the periods up to the disbursement of the n-th loan tranche.

(c) In the case of property still being constructed, 'V' accounts for the total value of the property up to the reporting date (accounting for the increase in value due to the progress of the construction works). 'V' is assessed upon disbursement of any new loan tranche, allowing for the computation of an updated LTV-O.

(d) Is adjusted by the total amount of the outstanding RRE loan, disbursed or not, that is secured through 'prior' liens on the property. In the case of more senior liens on the property, the full amount of the debt secured by these more senior liens needs to be deducted. In the case of 'equal ranking liens', an appropriate proportional adjustment should be made.

(e) Is not adjusted for the presence of other credit risk mitigants.

(f) Does not include costs and fees related to the RRE loan.

(g) Is not computed as the 'long-term value'. Whereas the use of the long-term value could be justified by the pro-cyclicality of 'V', LTV-O aims at capturing credit standards at origination. Therefore, if, at the moment a RRE loan is granted and the LTV-O is registered, the 'V' did not represent the value of the asset at origination as reported in the lender's records, it would not adequately capture the lender's actual credit policy concerning LTV-O.

4. Where the loan markets for buy-to-let and owner occupied properties are monitored separately, the definition of LTV-O applies, subject to the following exceptions:

(a) for buy-to let loans:

— 'L' includes only loans or loan tranches, secured by the borrower on the immovable property at the moment of origination, related to the buy-to-let loan.

— 'V' includes only the value at origination of the buy-to-let property.

(b) for owner occupied loans:

— 'L' includes only loans or loan tranches, secured by the borrower on the immovable property at the moment of origination, related to the owner occupied loan.

— 'V' includes only the value at origination of the owner occupied property.

5. National macroprudential authorities should be attentive to the fact that LTV ratios are procyclical in nature and should therefore consider such ratios with care in any risk monitoring framework. They could also investigate the use of additional metrics such as the loan-to-long-term-value, where the value is adjusted according to the long-term development of a market price index.

2. **The current loan-to-value ratio (LTV-C)**

1. LTV-C is defined as:

$$LTVC = \frac{LC}{VC}$$

2. For the purpose of the calculation, 'LC':

(a) Is measured as the outstanding balance of the loan(s) — defined as 'L' in Section 1(2) — at the reporting date, taking into account capital reimbursements, loan restructurings, new capital disbursements, incurred interest, and, in the case of loans in foreign currencies, changes in the exchange rate.

(b) Is adjusted to take account of the savings accumulated in an investment vehicle intended to reimburse the loan principal. The accumulated savings may be deducted from 'LC' only where the following conditions are satisfied:

1) the accumulated savings are unconditionally pledged to the creditor with the express purpose of reimbursing the loan principal at the contractually anticipated dates; and

2) an appropriate haircut, determined by the national macroprudential authority, is applied to reflect market and/or third-party risks associated with the underlying investments.

3. For the purpose of the calculation, 'VC':

(a) Reflects the changes in the value of 'V', as defined in Section 1(3), since the most recent valuation of the property. The current value of the property should be assessed by an independent external or internal appraiser. If such assessment is not available, the current value of the property can be estimated using a granular real estate value index (e.g. based on transaction data). If such a real estate value index is also not available, a granular real estate price index can be used after application of a suitably chosen mark-down to account for the depreciation of the property. Any real estate value or price index should be sufficiently differentiated according to the geographical location of the property and the property type.

(b) Is adjusted for changes in the prior liens on the property.

(c) Is computed annually.

4. Where the RRE loan markets for buy-to-let and owner occupied properties are monitored separately, the definition of LTV-C applies, subject to the following exceptions:

(a) for buy-to let loans:

— 'LC' includes only loans or loan tranches, secured by the borrower on the immovable property at the moment of origination, related to the buy-to-let loan.

— 'VC' refers to the current value of the buy-to-let property.

(b) for owner occupied loans:

— 'LC' includes only loans or loan tranches, secured by the borrower on the immovable property at the moment of origination, related to the owner occupied loan.

— 'VC' includes only the current value of the owner occupied property.

3. **The loan-to-income ratio at origination (LTI-O)**

1. LTI-O is defined as:

$$LTIO = \frac{L}{I}$$

2. For the purpose of the calculation, 'L' has the same meaning as in Section 1(2).

3. For the purpose of the calculation, 'I' is the borrower's total annual disposable income as registered by the credit provider at the moment of the RRE loan origination.

4. In determining a borrower's 'disposable income', addressees are encouraged to comply with definition (1) to the greatest extent possible and with definition (2) as a minimum:

Definition (1): 'disposable income' = employee income + self-employment income (e.g. profits) + income from public pensions + income from private and occupational pensions + income from unemployment benefits + income from social transfers other than unemployment benefits + regular private transfers (such as alimonies) + gross rental income from real estate property + income from financial investments + income from private business or partnership + regular income from other sources + loan subsidies – taxes – health care/social security/medical insurance premiums + tax rebates.

For the purpose of this definition:

(a) 'gross rental income from real estate property' includes both rental income from owned property on which no RRE loan is currently outstanding and buy-to-let property. The rental income should be determined from the information that is available to banks or otherwise imputed. If precise information is not available, a best estimate of rental income should be provided by the reporting institution, and the methodology used to obtain it should be described;

(b) 'taxes' should include, in order of importance, payroll taxes, tax credits, pension or insurance premiums, if charged on gross income, specific taxes, e.g. property taxes, and other non-consumption taxes;

(c) 'health care/social security/medical insurance premiums' should include the fixed and compulsory expenditures that in some countries are made after taxes;

(d) 'tax rebates' should include restitutions from the tax authority that are linked to the RRE loan interest deduction;

(e) 'loan subsidies' should include all public sector interventions aimed at easing the borrower's debt servicing burden (e.g. subsidised interest rates, repayment subsidies).

Definition (2): 'disposable income' = employee income + self-employment income (e.g. profits) − taxes.

5. Where the RRE loan markets for buy-to-let and owner occupied properties are monitored separately, the definition of LTI-O applies, subject to the following exceptions:

(a) for buy-to let loans:

— 'L' includes only loans or loan tranches, secured by the borrower on the immovable property at the moment of origination, related to the buy-to-let loan.

(b) for owner occupied loans:

— 'L' includes only loans or loan tranches, secured by the borrower on the immovable property at the moment of origination, related to the owner occupied property.

— Where a borrower has both owner occupied loans and buy-to-let loans, only buy-to-let rental income net of the debt servicing costs on the buy-to-let loans can be used to support the payment of owner occupied loans. In this case, the first-best definition of 'disposable income' is:

'disposable income' = employee income + self-employment income, e.g. profits + income from public pensions + income from private and occupational pensions + income from unemployment benefits + income from social transfers other than unemployment benefits + regular private transfers, e.g. alimony) + (gross rental income from real estate property − debt servicing costs on rental property) + income from financial investments + income from private business or partnership + regular income from other sources + loan subsidies − taxes − health care/social security/medical insurance premiums + tax rebates.

4. **The debt-to-income ratio at origination (DTI-O)**

1. DTI-O is defined as:

$$DTIO = \frac{D}{I}$$

2. For the purpose of the calculation, 'D' includes the total debt of the borrower, whether or not it is secured by real estate, including all outstanding financial loans, i.e. granted by the RRE loan provider and by other lenders, at the moment of the RRE loan origination.

3. For the purpose of the calculation, 'I' has the same meaning as in Section 3(4).

5. **The loan service-to-income ratio at origination (LSTI-O)**

1. LSTI-O is defined as:

$$LSTIO = \frac{LS}{I}$$

2. For the purpose of the calculation, 'LS' is the annual debt servicing costs of the RRE loan, defined as 'L' in Section 1(2) at the moment of loan origination.

3. For the purposes of the calculation, 'I' has the same meaning as in Section 3(4).

4. Where the RRE loan markets for buy-to-let and owner occupied properties are monitored separately, the definition of LSTI-O applies subject to the following exceptions:

   (a) for buy-to-let loans:
   — 'LS' is the annual debt servicing costs related to the buy-to-let loan, at the moment of loan origination.

   (b) for owner occupied loans:
   — 'LS' is the annual debt servicing costs related to the owner occupied loan, at the moment of loan origination.

   — The relevant first-best definition of 'disposable income' is:

   'disposable income' = employee income + self-employment income, e.g. profits + income from public pensions + income from private and occupational pensions + income from unemployment benefits + income from social transfers other than unemployment benefits + regular private transfers, e.g. alimonies + (gross rental income from real estate property – debt servicing costs on rental property + income from financial investments) + income from private business or partnership + regular income from other sources + loan subsidies – taxes – health care/social security/medical insurance premiums + tax rebates.

6. **The debt service-to-income ratio at origination (DSTI-O)**

1. DSTI-O is defined as:

$$DSTIO = \frac{DS}{I}$$

2. For the purpose of the calculation, 'DS' is the annual debt servicing costs of the total debt of the borrower, defined as 'D' in Section 4(2) at the moment of loan origination.

3. For the purposes of the calculation, 'I' has the same meaning as in Section 3(4).

4. DSTI-O should be considered as an optional indicator as not in all jurisdictions lenders may have access to the necessary information to calculate its numerator. However, in jurisdictions where lenders do have access to such information (e.g. through credit registers or tax records), macroprudential authorities are strongly encouraged to include also this indicator in their risk monitoring framework.

7. **The interest coverage ratio (ICR)**

1. ICR is defined as:

$$ICR = \frac{Gross\ annual\ rental\ income}{Annual\ interest\ costs}$$

2. For the purposes of the calculation:

   (a) 'gross annual rental income' is the annual rental income accruing from buy-to-let housing, gross of any operational expenses to maintain the property's value and of taxes;

   (b) 'annual interest costs' are the annual interest costs associated with the buy-to-let housing.

3. The ratio can refer to its value at loan origination (ICR-O) or its current value (ICR-C).

8. **The loan-to-rent ratio at origination (LTR-O)**

1. LTR-O is defined as:

$$LTRO = \frac{Buy\text{−}to\text{−}let\ loan}{Net\ annual\ rental\ income\ or\ Gross\ annual\ rental\ income}$$

2. For the purpose of the calculation:

(a) 'buy-to-let loan' has the same meaning of 'L' in Section 1(2), but it is limited to RRE loans financing the buy-to-let property;

(b) 'net annual rental income' is the annual rental income accruing from the buy-to-let property net of any operational expenses to maintain the property's value but gross of any taxes;

(c) 'gross annual rental income' is the annual income accruing from renting out the buy-to-let property to tenants, gross of any operational expenses to maintain the property's value and of taxes.

The net annual rental income should be used for the calculation of the LTR-O. If this information is not available, gross annual rental income may be used as an alternative.

ANNEX V

GUIDANCE ON DEFINITIONS AND INDICATORS RELATED TO COMMERCIAL REAL ESTATE

This Annex provides guidance on specific issues related to the definition of CRE, CRE indicators and in particular on Annex III. Its purpose is not to provide detailed technical instructions for completing the Templates of Annex III covering all possible cases. Moreover, the guidance should be interpreted as covering target definitions and target methods, and in some cases divergences might be justified to accommodate for the specificities of markets or market segments.

1. **Definitions of commercial real estate**

There is currently no Union-wide definition of CRE that is sufficiently precise for macroprudential purposes.

(a) Regulation (EU) No 575/2013 defines RRE in Article 4(1)(75) but does not provide a precise definition of CRE, other than describing it as 'offices or other commercial premises' in Article 126. This Regulation also requires that the property value should not depend on the credit quality of the borrower or the performance of the underlying project as regards CRE.

(b) EBA provided a useful additional criterion: the dominant purposes of the property 'should be linked to an economic activity' ([1]). While useful, this criterion is still not precise enough for macroprudential purposes.

(c) Regulation (EU) 2016/867 of the European Central Bank (ECB/2016/13) ([2]) is another possible source for the CRE definition. However, at this stage, the Regulation defines CRE as all property that is not RRE (as defined in the Regulation mentioned under (a) above). Such definition is too broad for financial stability purposes as the main interest here is the extent to which cash-flows expected from CRE, such as rents, will be sufficient to repay the loans the property has been financed with.

(d) The G20 Data Gaps initiative ([3]) is a set of 20 recommendations on the enhancement of economics and financial statistics that was launched in order to improve the availability and comparability of economic and financial data following the financial crisis of 2007-08. Recommendation 19 highlights the requirement to improve the availability of both residential and commercial real estate statistics. The follow-up on this initiative, including agreeing a definition of CRE, is still underway and may provide some input to the data required for the purposes of the ESRB.

(e) The Basel Committee on Banking Supervision's consultation document on revisions to the standardised approach for credit risk ([4]) also defines CRE as the opposite of RRE. An RRE exposure is defined as an exposure secured by an immovable property that has the nature of a dwelling and satisfies all applicable laws and regulations enabling the property to be occupied for housing purposes, i.e. residential property. A CRE exposure is then defined as an exposure secured by any immovable property that is not a residential property.

In view of the limitations of the definitions set out above, this Recommendation provides a working definition of CRE specifically for macroprudential purposes. It defines CRE as any income-producing immovable property, excluding social housing, property held by end-users and buy-to-let housing.

Whether property under development should be considered as CRE can be debated. In this respect national practices vary. However, the experience of a number of Member States during the recent financial crisis has demonstrated how important it is for financial stability purposes to monitor investments in, and the financing of, this economic activity. Moreover, new property under development is expected to increase the future stock of CRE once completed. For the purposes of this Recommendation, property under development is therefore considered to be a sub-category of CRE.

([1]) See: EBA question ID 2014_1214 of 21 November 2014.
([2]) Regulation (EU) 2016/867 of the European Central Bank of 18 May 2016 on the collection of granular credit and credit risk data (ECB/2016/13) (OJ L 144, 1.6.2016, p. 44).
([3]) Financial Stability Board and International Monetary Fund, *The financial crisis and information gaps — report to the G-20 finance ministers and central bank governors*, 29 October 2009.
([4]) Basel Committee on Banking Supervision, *Revisions to the Standardised Approach to credit risk — second consultative document*, December 2015.

Social housing is a complex segment of the property market, as it may take different forms across and within countries. It should be excluded from the definition of CRE when the transaction value of properties or the rent applied to tenants in such properties are directly influenced by a public body, which results in rents being lower than those observed in the current market. National authorities should determine the boundary between social housing and private rental sector in their country according to this criterion.

Buy-to-let housing refers to any residential real estate directly owned by private households ([1]), with the primary aim of being let to tenants. At present, this activity is significant in only a few Member States. Buy-to-let housing is also a border area between RRE and CRE. However, since this activity is typically undertaken by part-time, non-professional landlords with a small property portfolio this can be interpreted for financial stability purposes as belonging more to the RRE sector rather than to the CRE sector. Nevertheless, because of its distinct risk characteristics, national macroprudential authorities are recommended to monitor developments in this sub-market, using a number of additional and specific indicators, should this activity represent a significant source of risks or a significant share of the stock or flows of total RRE lending.

2. **Data sources on commercial real estate**

2.1. *Indicators on the physical CRE market*

CRE indicators on the physical market can be obtained through:

(a) public sources, e.g. national statistical agencies or land registers; or

(b) private sector data providers that cover a substantial part of the CRE market.

The ESRB Report on commercial real estate and financial stability in the EU provides an overview of available price indices and possible data sources ([2]).

2.2. *Indicators on the financial system's CRE exposure*

The exposures of market participants, at least those of the financial sector, can be collected from supervisory reporting. Some data are already collected by the ECB and EIOPA at national level. However, these are not very detailed. New supervisory reporting templates for banks, i.e. Financial Reporting (FINREP) and Common Reporting (COREP), for insurers under Directive 2009/138/EC of the European Parliament and of the Council ([3]) and for investment funds under Directive 2011/61/EU of the European Parliament and of the Council ([4]) can provide more granular insight into financial institutions' exposures to CRE.

The classifications provided in the statistical classification of economic activities in the European Community (NACE rev 2.0) can be useful to proxy financial institutions' exposures to CRE, as they are widely agreed upon by the Union institutions and used in regulatory reporting templates for banks and insurance undertakings. Two sections appear to be relevant in that respect:

(a) Section F: construction, excluding civil engineering; and

(b) Section L: real estate activities, excluding real estate agencies.

([1]) According to point 2.118 of Chapter 2 of Annex A to Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts in the European Union (OJ L 174, 26.6.2013, p. 1), 'the households sector […] consists of individuals or groups of individuals as consumers and as entrepreneurs producing market goods and non-financial and financial services (market producers) provided that the production of goods and services is not by separate entities treated as quasi-corporations. It also includes individuals or groups of individuals as producers of goods and non-financial services for exclusively own final use.'

([2]) ESRB, 'Report on Commercial Real Estate and Financial Stability in the EU', December 2015, in particular Annex II, Section 2.2.

([3]) 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).

([4]) 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).

The main drawback of using NACE classifications is that they target economic sectors and not loans. For instance, a loan extended to a property company to buy a car fleet will be reported under Section L, even if it is not a CRE loan.

2.3. *Use of private sector data*

Where national macroprudential authorities use data from a private sector data provider in order to compile the CRE indicators, they are expected to identify the differences in scope and definitions compared to those requested in this Recommendation. They should also be able to provide details on the underlying methodology used by the provider and the sample coverage. Data from a private sector provider should be representative of the overall market and the relevant breakdowns set out in Recommendation D:

(a) property type;

(b) property location;

(c) investor type and nationality;

(d) lender type and nationality.

3. **Relevant breakdowns of the indicators**

With respect to the relevant breakdowns set out in Recommendation D, national macroprudential authorities should be able to provide an assessment of the relevance of such breakdowns for their CRE market when they use them for monitoring purposes, taking also into account the principle of proportionality.

'Property type' refers to the primary use of a commercial property. For CRE indicators, this breakdown should include the following categories:

(a) residential, e.g. multi-household premises;

(b) retail, e.g. hotels, restaurants, shopping malls;

(c) offices, e.g. a property primarily used as professional or business offices;

(d) industrial, e.g. property used for the purposes of production, distribution and logistics;

(e) other types of commercial property.

If a property has a mixed use, it should be considered as different properties (based for example on the surface areas dedicated to each use) whenever it is feasible to make such breakdown; otherwise, the property can be classified according to its dominant use.

'Property location' refers to the geographical breakdown (e.g. by regions) or to real estate submarkets, which shall also include prime and non-prime locations. A prime location is generally considered the best location in a particular market, which is also reflected in the rental yield (typically the lowest in the market). For office buildings this could be a central location in a major city. For retail buildings this may refer to a city centre with many pedestrians or a centrally-placed shopping centre. For logistics buildings this may refer to a location where the necessary infrastructure and services are in place, which has excellent access to transport networks.

'Investor type' refers to broad investor categories, such as:

(a) banks;

(b) insurance companies;

(c) pension funds;

(d) investment funds;

(e) property companies;

(f) others.

It is probable that only data on the recorded borrower or investor will be available. However, national macroprudential authorities should be aware that the recorded borrower or investor can be different from the ultimate borrower or investor, which is where the final risk lies. Hence, authorities are encouraged to monitor also information on the ultimate borrower or investor whenever possible, e.g. through information gathered from market participants, in order to have a better understanding of the behaviour of market participants and risks.

'Lender type' refers to broad lender categories, such as:

(a) banks, including 'bad banks';

(b) insurance companies;

(c) pension funds.

National macroprudential authorities may need to adjust the list of investor and lender types in order to reflect the characteristics of the local CRE sector.

'Nationality' refers to the country of incorporation of the market participant. The nationality of investors and lenders should be broken down into at least the three following geographical categories:

(a) domestic;

(b) rest of the European Economic Area;

(c) rest of the world.

National macroprudential authorities should be aware that the recorded investor's or lender's nationality can be different from the ultimate investor's or lender's nationality where the final risk lies. Hence, authorities are encouraged to also monitor information on the ultimate lender's or investor's nationality, e.g. through information gathered from market participants.

4. **Methods for calculating the physical market indicators**

CRE price refers to a constant quality *numéraire*, i.e. the market value of property stripped of quality changes such as depreciation (and obsolescence) or appreciation (e.g. renovation) by means of quality adjustment.

Guidance from work initiated by Eurostat advises that pricing data should be collected from actual transactions. Where these are not available and/or fully representative they may be approximated by appraisal or valuation data as long as these data reflect the current market price, and not any sustainable price measurement approach.

5. **Assessment of financial system exposures to commercial real estate**

The financial system's exposure to CRE consists of both lending, often by banks and sometimes also insurance companies, and investments, often made by insurance companies, pension funds and investment funds. Investments can refer to both direct CRE holdings, e.g. possessing legal title to a CRE property, and indirect CRE holdings, e.g. through securities and investment funds. In case a lender or investor uses a special purpose vehicle (SPV) as a dedicated CRE financing technique, such lending or investments should be considered as direct CRE lending or holdings ('look-through' approach).

When assessing these exposures for the system, as a whole, national macroprudential authorities should be aware of the risk of double-counting. Investors can invest both directly and indirectly in CRE. For example, pension funds and insurance companies often invest indirectly in CRE.

It may also be more difficult to capture exposures of foreign market participants, which may make up a significant part of the market [1]. Since these market participants are important to the functioning of the CRE market, monitoring of their activities is advisable.

Since losses from CRE activities are often concentrated in CRE lending by banks, national macroprudential authorities are encouraged to pay particular attention to this activity in their monitoring.

(1) ESRB, *Report on Commercial Real Estate and Financial Stability in the EU*, December 2015, in particular Section 2.3 and Box 1.

6. **Methods for calculating LTV**

Annex IV sets out the methods for calculating LTV-O and LTV-C. However, there are a number of specificities to take into account when these ratios are calculated for CRE.

In the case of a syndicated loan, the LTV-O should be calculated as the initial amount of all loans granted to the borrower relative to the value of the property at origination. Where several properties are concerned, the LTV-O should be calculated as the ratio of the initial loan(s) amount to the total value of the properties concerned.

As the number of properties is much smaller and properties are more heterogeneous in the CRE sector than in the RRE sector, it is more appropriate to calculate the LTV-C on the basis of a value assessment of the individual properties rather than using a value or price index.

Finally, national macroprudential authorities need to monitor the distribution of LTV with a particular focus on the riskiest loans, i.e. those with the highest LTV, as losses often result from such tail risk.

7. **Methods for calculating the interest coverage ratio (ICR) and debt service coverage ratio (DSCR)**

The interest coverage ratio (ICR) and the debt service coverage ratio (DSCR) refer to rental income generated by a CRE property or set of properties, net of taxes and operating expenses that the borrower must incur in order to maintain the property's value.

ICR is defined as:

$$ICR = \frac{Net\ annual\ rental\ income}{Annual\ interest\ costs}$$

For the purposes of calculating ICR:

(a) 'net annual rental income' includes the annual rental income accruing from renting CRE to tenants net of taxes and any operational expenses to maintain the property's value.

(b) 'annual interest costs' are annual interest costs associated with the loan secured by the CRE property or set of properties.

The ICR's purpose is to measure the extent to which the income generated by a property is sufficient to pay for the interest expenses incurred by a borrower to purchase that property. ICR should therefore be analysed at property level.

DSCR is defined as:

$$DSCR = \frac{Net\ annual\ rental\ income}{Annual\ debt\ service}$$

For the purpose of calculating DSCR:

(a) 'net annual rental income' is the annual rental income accruing from renting CRE to tenants net of any taxes and operational expenses to maintain the property's value.

(b) 'annual debt service' is the annual debt service associated with the loan secured by the CRE property or set of properties.

The DSCR's purpose is to assess the weight of the overall debt burden that a property generates for a borrower. Hence, the denominator includes not only interest expenses, but also loan amortisation, i.e. principal repayments. The main issue for such an indicator is whether it should be calculated at property level or at borrower level. CRE financing is typically provided on a non-recourse basis, i.e. the lender is only entitled to repayment from the income of the property and not from the borrower's other income or assets. Therefore it is more realistic and appropriate to calculate the DSCR at property level. Furthermore, focusing on a borrower's overall income would raise important consolidation issues which would make it more difficult to define a metric that is comparable across Member States.

8. **Additional indicators relevant for property under development**

For CRE property under development, instead of the LTV at origination, national macroprudential authorities may instead monitor the loan-to-cost ratio (LTC). The LTC represents the initial amount of all loans granted in relation to the costs associated with the construction of the CRE property until completion.

In addition, national macroprudential authorities should focus their monitoring on the riskiest developments, e.g. those that experience very low pre-let or pre-sale ratios. For any building still being constructed, the pre-let ratio equals the surface area that has already been let by the property developer at the time the loan is issued relative to the total surface area that will be available once the property has been completed; similarly, the pre-sale ratio equals the surface area that has already been sold by the property developer at the time the loan is issued relative to the total surface area that will be available once the property has been completed.

9. **Annual publication of commercial real estate exposures by the ESAs**

Drawing on information available from regulatory reporting templates, the ESAs are recommended to disclose at least annually aggregated information on the exposures to the different national CRE markets in the Union for the entities within the scope of their supervision and on solo basis. Such public disclosure is expected to enhance the knowledge of national macroprudential authorities on the activity of entities from other Member States on their domestic CRE market. In case there are any concerns about the scope or quality of the published data, such publication should be accompanied with the appropriate comments.

As a general rule, the ESAs should make it possible for any national macroprudential authority in the Union to assess the exposures of all Union financial institutions to its national market. This implies that data collected for all financial institutions in the Union should be aggregated at country level.

In disclosing such aggregated information, the ESAs should make use of information in regulatory reporting templates that provide a geographical breakdown of credit exposures and/or (direct and indirect) investments. When reporting templates provide a breakdown by NACE codes ([1]), CRE could be referred to as both the 'F' and 'L' Sections, although strictly speaking some sub-categories would need to be excluded following the CRE definition adopted in this Recommendation.

([1]) Regulation (EC) No 1893/2006 of the European Parliament and of the Council of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2 and amending Council Regulation (EEC) No 3037/90 as well as certain EC Regulations on specific statistical domains (OJ L 393, 30.12.2006, p. 1).