I

(Resolutions, recommendations and opinions)

RECOMMENDATIONS

EUROPEAN SYSTEMIC RISK BOARD

RECOMMENDATION OF THE EUROPEAN SYSTEMIC RISK BOARD

of 21 March 2019

amending Recommendation ESRB/2016/14 on closing real estate data gaps

(ESRB/2019/3)

(2019/C 271/01)

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 implementation of a framework for monitoring developments in the real estate sector for financial stability purposes requires the regular collection and distribution at Union level of comparable country data so that real estate-related risks across Member States can be more accurately assessed and the use of macroprudential policy instruments can be compared, with the aim of addressing real estate-related vulnerabilities.

(2) Recommendation ESRB/2016/14 of the European Systemic Risk Board ([3]) aimed to harmonise the definitions and indicators used for monitoring residential real estate (RRE) and commercial real estate (CRE) markets and address existing gaps in the availability and comparability of data on RRE and CRE markets in the Union.

(3) Regulation (EC) No 223/2009 of the European Parliament and of the Council ([4]) and Commission Decision 2012/504/EU ([5]) set out the legal framework for European statistics. In view of the experience of the Community statistical authority, which is the Commission (Eurostat), in providing high quality data for Europe with the aim of enabling and facilitating comparisons between countries, the Commission's (Eurostat) contribution to the framework set out in Recommendation ESRB/2016/14 is deemed by the European Systemic Risk Board (ESRB) to be of particular importance in order to facilitate the collection by national macroprudential authorities of data on the indicators on the physical CRE market. The availability of such data would in turn expedite the implementation of a risk monitoring framework by national macroprudential authorities in order to effectively monitor the CRE market, and thereby facilitate the identification of risks to financial stability arising

([1]) OJ L 331, 15.12.2010, p. 1.

([2]) OJ C 58, 24.2.2011, p. 4.

([3]) Recommendation ESRB/2016/14 of the European Systemic Risk Board of 31 October 2016 on closing real estate data gaps (OJ C 31, 31.1.2017, p. 1).

([4]) Regulation (EC) No 223/2009 of the European Parliament and of the Council of 11 March 2009 on European Statistics and repealing Regulation (EC, Euratom) No 1101/2008 of the European Parliament and of the Council on the transmission of data subject to statistical confidentiality to the Statistical Office of the European Communities, Council Regulation (EC) No 322/97 on Community Statistics, and Council Decision 89/382/EEC, Euratom establishing a Committee on the Statistical Programmes of the European Communities (OJ L 87, 31.3.2009, p. 164).

([5]) Commission Decision 2012/504/EU of 17 September 2012 on Eurostat (OJ L 251, 18.9.2012, p. 49).

from the physical CRE market. For this reason, it is therefore considered crucial to establish a common minimum framework for the collection of the database which is required by national macroprudential authorities in order to effectively monitor the physical CRE market. The need for such a harmonised framework becomes even more apparent when the significant volume of cross-border CRE financing is taken into account. In this respect, a new recommendation, designed to promote a common minimum framework for the development, production and dissemination of the relevant harmonised indicators, should be added to Recommendation ESRB/2016/14. In order to ensure the consistency and the quality of the relevant statistical data and to minimise the reporting burden, the Commission (Eurostat) should also develop and promote statistical standards, methods and procedures for the collection of the required statistical data.

(4) Under Article 2 of Council Regulation (EU) No 1096/2010 ([6]), the ECB is required to ensure the secretariat of the ESRB and thereby to provide analytical, statistical, logistical and administrative support to the ESRB. In addition, under Article 5.3 of the Statute of the European System of Central Banks and of the European Central Bank, the ECB is required to contribute to the harmonisation, where necessary, of the rules and practices governing the collection, compilation and distribution of statistics in the areas within its fields of competence. In this respect, it is important to ensure close cooperation and appropriate coordination between the European Statistical System ([7]) and the European System of Central Banks (ESCB). To that end, and in accordance with Article 6(3) of Regulation (EC) No 223/2009, the ongoing consultation activities and the cooperation between the Commission (Eurostat) and the ECB are deemed to be of particular importance for the purpose of developing the required statistical standards, methods and procedures.

(5) The statistical work most recently carried out by the ESCB Statistics Committee – assisted by its Real Estate Task Force – on the sources of data on indicators related to the financing of CRE and RRE has highlighted the need for amendments to certain definitions in order to facilitate the monitoring activities of the national macroprudential authorities. While it is acknowledged that Regulation (EU) 2016/867 of the European Central Bank ([8]), which introduced the AnaCredit project, cannot be relied on alone to fulfil the data needs of national macroprudential authorities, the definitions of commercial real estate and of residential real estate in Recommendation ESRB/2016/14 should nevertheless be amended in order to align them more closely with the broader definitions used in Regulation (EU) 2016/867 in order to facilitate the required financial stability analyses and allow for a full comparability across countries.

(6) However, amendments to definitions set out in Recommendation ESRB/2016/14 should not prevent national macroprudential authorities from making use of additional real estate indicators and breakdowns which, based on the definitions and metrics of those national macroprudential authorities, take into consideration the specificities of their national CRE and RRE markets and are relevant from the financial stability perspective. This would also ensure adherence by national macroprudential authorities to the principle of proportionality as provided for in Recommendation ESRB/2016/14.

(7) Recommendation ESRB/2016/14 requests addressees to report to the ESRB and the Council on the actions undertaken in response to that Recommendation, or to adequately justify any inaction, in compliance with the timelines set out in the Recommendation. In this respect, the addressees have made progress towards implementing Recommendation ESRB/2016/14 within the recommended timelines. However, the work of some national macroprudential authorities has been delayed by practical issues, such as the need to establish reporting structures, to identify data sources and to address issues related to the confidentiality of data.

(8) In order to ensure the implementation of Recommendation ESRB/2016/14, it is therefore necessary to extend certain deadlines set forth therein. Extending these deadlines will provide national macroprudential authorities with more time to sort out the abovementioned practical issues. The lack of commonly agreed working definitions is of particular concern as regards the relevant indicators on the physical CRE market, and, together with operational constraints on data availability, makes it difficult to accurately assess and compare risks across national markets. Therefore the deadlines for implementation of Recommendation ESRB/2016/14 in relation to those indicators for which national macroprudential authorities do not have the relevant information should be extended further, in order to allow sufficient time for the development of the necessary definitions and for data collection.

([6]) Council Regulation (EU) No 1096/2010 of 17 November 2010 conferring specific tasks upon the European Central Bank concerning the functioning of the European Systemic Risk Board (OJ L 331, 15.12.2010, p. 162).

([7]) The European Statistical System (ESS) is the partnership between the Community statistical authority, which is the Commission (Eurostat), and the national statistical institutes (NSIs) and other national authorities responsible in each Member State for the development, production and dissemination of European statistics.

([8]) 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).

(9) The General Board does not consider that the extension of certain deadlines established in Recommendation ESRB/2016/14 will jeopardise the orderly functioning of the financial markets. Additionally, the General Board does not consider that such an extension would consequently lead to the possibility that addressees might not implement Recommendation ESRB/2016/14.

(10) The ESRB also acknowledges that further technical guidance and work on the target definitions and indicators may be required in order to accommodate the specificities of markets or market segments, as well as to ensure the statistical quality of the data. Further amendments to Recommendation ESRB/2016/14 may therefore also be necessary to address future developments regarding those target definitions and indicators.

(11) Therefore, Recommendation ESRB/2016/14 should be amended accordingly,

HAS ADOPTED THIS RECOMMENDATION:

AMENDMENTS

Recommendation ESRB/2016/14 is amended as follows:

1. in Section 1, paragraph 1 of Recommendation C is replaced by the following:

‘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 CRE property under development or construction);

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

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

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

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

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

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

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

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

(o) stocks of loan loss provisions on lending for CRE property under development or construction (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. in Section 1, paragraph 2 of Recommendation D is replaced by the following:

'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 for each of the breakdowns of lending to CRE (including CRE property under development or construction) – i.e. lending for property held by owners for the purpose of conducting their business, purpose or activity, either existing or under construction; lending for rental housing; lending for income-producing real estate (other than rental housing); lending for CRE property under development; and lending for social housing – national macroprudential authorities should consider a further breakdown by:

— property type;

— property location;

— lender type;

— lender nationality.

(d) For flows and stocks of non-performing CRE loans and for each of the breakdowns of non-performing CRE loans (including CRE property under development or construction) – i.e. lending for property held by owners for the purpose of conducting their business, purpose or activity, either existing or under construction; lending for rental housing; lending for income-producing real estate (other than rental housing); lending for CRE property under development; and lending for social housing – national macroprudential authorities should consider a further breakdown by:

— property type;

— property location;

— lender type;

— lender nationality.

(e) For flows and stocks of loan loss provisions on CRE lending and for each of the breakdowns of loan loss provisions on CRE lending (including CRE property under development or construction) – i.e. lending for property held by owners for the purpose of conducting their business, purpose or activity, either existing or under construction; lending for rental housing; lending for income-producing real estate (other than rental housing); lending for CRE property under development; and lending for social housing – national macroprudential authorities should consider a further breakdown by:

— property type;

— property location;

— lender type;

— lender nationality.

The breakdowns as referred to in points (a) to (e) above are to be considered as the recommended minimum. National macroprudential authorities may add additional breakdowns as they may deem necessary for financial stability purposes.';

3. in Section 1, the following Recommendation is added:

'**Recommendation F – Establishment of a common minimum framework for the physical commercial real estate market**

1. The Commission (Eurostat) is recommended to propose Union legislation establishing a common minimum framework for the development, production and dissemination of a database on indicators on the physical CRE market referred to in paragraphs (a) to (e) of sub-recommendation C(1).

2. The Commission (Eurostat) is also recommended to develop and promote statistical standards, sources, methods and procedures for developing the database on the indicators on the physical CRE market referred to in paragraphs (a) to (e) of sub-recommendation C(1), in particular to ensure the quality of this set of indicators and minimise the reporting burden.';

4. Section 2(1)(1) is amended as follows:

(a) point (3) is replaced by the following:

'"buy-to-let housing or property" means any RRE directly owned by a natural person primarily for letting to tenants;';

(b) point (4) is replaced by the following:

'"commercial real estate" (CRE) means any income-producing real estate, either existing or under development, including rental housing; or real estate used by the owners of the property for conducting their business, purpose or activity, either existing or under construction; that is not classified as RRE; and includes social 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;';

(c) point (5) is replaced by the following:

'"commercial real estate (CRE) loan" means a loan extended to a legal entity aimed at acquiring income-producing real estate (or set of properties defined as income-producing real estate), either existing or under development, or real estate used by the owners of the property for conducting their business, purpose or activity (or set of such properties), either existing or under construction, or secured by a commercial real estate property (or set of commercial real estate properties);';

(d) the following point (16a) is inserted:

'"income-producing property under development" means all property under construction and intended to provide, upon completion, an income to its owner in the form of rents or profits from its sale, but does not include buildings being demolished or sites being cleared for possible development in the future;';

(e) point (32) is replaced by the following:

'"owner occupied housing or property" means any residential real estate owned by a natural person for the purpose of providing shelter to its owner;';

(f) point (34) is deleted;

(g) the following point (36a) is inserted:

'"rental housing" means any real estate which is owned by legal entities primarily for letting to tenants;'

(h) point (38) is replaced by the following:

'"residential real estate" (RRE) means any immovable property available for dwelling purposes, either existing or under construction, acquired, built or renovated by a natural person, including buy-to-let housing. 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;';

(i) point (39) is replaced by the following:

'"residential real estate (RRE) loan" means a loan to a natural person secured by a residential real estate property, independent of the purpose of the loan;';

5. Section 2(3) is replaced by the following:

'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 2019, 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 2019, 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 2019, 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 2021, national macroprudential authorities are requested to deliver to the ESRB and the Council a final report on the implementation of Recommendation C.

   (c) Where national macroprudential authorities do not have the relevant information in relation to those indicators referred to in points (a) to (e) of Recommendation C(1), those authorities are requested to deliver to the ESRB and the Council a final report on the implementation of Recommendation C in relation to those indicators at the latest by 31 December 2025.

4. *Recommendation D*

   (a) By 31 December 2019, 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 2021, national macroprudential authorities are requested to deliver to the ESRB and the Council a final report on the implementation of Recommendation D.

(c) Where national macroprudential authorities do not have the relevant information in relation to those indicators referred to in point (a) of Recommendation D(2) as specified in Template A of Annex III to this Recommendation, those authorities are requested to deliver to the ESRB and the Council a final report on the implementation of Recommendation D in relation to those indicators at the latest by 31 December 2025.

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.

6. *Recommendation F*

(a) By 31 December 2021, the Commission (Eurostat) is requested to deliver to the ESRB and the Council an interim report containing a first assessment of the implementation of Recommendation F.

(b) By 31 December 2023, the Commission (Eurostat) is requested to deliver to the ESRB and the Council a final report on the implementation of Recommendation F.';

6. Annex I is replaced by Annex I to this Recommendation;

7. Annex II is replaced by Annex II to this Recommendation;

8. Annex III is replaced by Annex III to this Recommendation;

9. Annex IV is replaced by Annex IV to this Recommendation;

10. Annex V is replaced by Annex V to this Recommendation.

Done at Frankfurt am Main, 21 March 2019.

The Head of the ESRB Secretariat,

on behalf of the General Board of the ESRB

Francesco MAZZAFERRO

ANNEX I

Annex I to Recommendation ESRB/2016/14 is replaced by the following:

'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 CRE market, the indicators on financial system credit exposures and the indicators on lending standards;

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 indicators on the physical CRE market, 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.

6. **Recommendation F**

The Commission (Eurostat) will be deemed to comply with Recommendation F where:

a) based on the suitability of the definitions and breakdowns for the relevant indicators on the physical CRE market which are currently used within Member States, it proposes Union legislation establishing a common minimum framework for the development, production and dissemination of a database on the relevant indicators with the aim of harmonising such indicators;

b) it ensures the alignment of the proposed legislation with the indicators and their definitions, as used for supervisory or financial stability purposes, so as to avoid an unjustified increase in the burden on reporting entities;

c) it ensures the quality of the relevant indicators on the physical CRE market by developing statistical standards, sources, methods and procedures for developing the database on the relevant indicators;

d) it ensures that the implementation of the developed statistical standards, sources, methods and procedures relating to the database on the relevant indicators on the physical CRE market does not lead to an unjustified increase in the burden on reporting entities;

e) it promotes the implementation of the statistical standards, sources, methods and procedures developed for the production of the database on relevant indicators on the physical CRE market.'.

ANNEX II

Annex II to Recommendation ESRB/2016/14 is replaced by the following:

'ANNEX II

INDICATIVE TEMPLATES FOR INDICATORS ON THE RESIDENTIAL REAL ESTATE SECTOR

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

Templates for residential real estate

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 property in individual territories (**)	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, #
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 %)
o/w partially amortising	Avg (in %)

Loan-service-to-income at origination (LSTI-O)	FLOWS
o/w property in individual territories (**)	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, #
]40 % ; 50 %]	ncu, #
]50 % ; 60 %]	ncu, #
> 60 %	ncu, #
Not available	ncu, #

Loan-to-value at origination (LTV-O)	FLOWS
o/w non-amortising (*)	Avg (in %)
o/w property in individual territories (**)	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.

(**) RRE loans provided within the domestic financial system of any Member State may be collateralised by RRE property located in foreign territories. A row should be added for every such foreign territory which is deemed important for financial stability purposes.

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

Additional templates for countries with a significant buy-to-let risk or market

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 property in individual territories (**)	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 property in individual territories (**)	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 property in individual territories (**)	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, #

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 %)
o/w property in individual territories (**)	ncu, #
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
]30 % ; 40 %]	ncu, #
]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.

(**) RRE loans provided within the domestic financial system of any Member State may be collateralised by RRE property located in foreign territories. A row should be added for every such foreign territory which is deemed important for financial stability purposes.'.

ANNEX III

Annex III to Recommendation ESRB/2016/14 is replaced by the following:

'ANNEX III

INDICATIVE TEMPLATES FOR INDICATORS ON THE COMMERCIAL REAL ESTATE SECTOR

1. Template A: indicators on the physical market

Physical market indicators

	Indicator	Frequency	**Breakdown**	
			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

Exposures indicators

	Indicator	Frequency	**Breakdown**					**Total**
			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**

Indicator		Breakdown					Total
	Frequency	Property type (1)	Property location (2)	Investor type (3) (8)	Lender type (4)	Investor (8) / lender nationality (5)	
— of which indirect CRE holdings	Quarterly			nc		nc	**nc**
Valuation adjustments on CRE investments	Quarterly	nc	nc	nc		nc	**nc**
Lending to CRE (incl. CRE property under development or construction)	Quarterly	nc	nc		nc	nc	**nc**
— of which loans for acquiring property held by owners for the purpose of conducting their business, purpose or activity, either existing or under construction	Quarterly	nc	nc		nc	nc	**nc**
— of which loans for acquiring rental housing	Quarterly	nc	nc		nc	nc	**nc**
— of which loans for acquiring income-producing real estate (other than rental housing)	Quarterly	nc	nc		nc	nc	**nc**
— of which loans for acquiring CRE property under development	Quarterly	nc	nc		nc	nc	**nc**
— of which loans for acquiring property held for social housing	Quarterly	nc	nc		nc	nc	**nc**
Non-performing CRE loans (incl. CRE property under development or construction)	Quarterly	nc	nc		nc	nc	**nc**
— of which loans for acquiring property held by owners for the purpose of conducting their business, purpose or activity, either existing or under construction	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)	
	— of which loans for acquiring rental housing	Quarterly	nc	nc		nc	nc	**nc**
	— of which loans for acquiring income-producing real estate (other than rental housing)	Quarterly	nc	nc		nc	nc	**nc**
	— of which loans for acquiring CRE property under development	Quarterly	nc	nc		nc	nc	**nc**
	— of which loans for acquiring property held for social housing	Quarterly	nc	nc		nc	nc	**nc**
	Loan loss provisions on CRE lending (incl. CRE property under development or construction)	Quarterly	nc	nc		nc	nc	**nc**
	— of which loans for acquiring property held by owners for the purpose of conducting their business, purpose or activity, either existing or under construction	Quarterly	nc	nc		nc	nc	**nc**
	— of which loans for acquiring rental housing	Quarterly	nc	nc		nc	nc	**nc**
	— of which loans for acquiring income-producing real estate (other than rental housing)	Quarterly	nc	nc		nc	nc	**nc**
	— of which loans for acquiring CRE property under development	Quarterly	nc	nc		nc	nc	**nc**
	— of which loans for acquiring property held for social housing	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**
	Lending to CRE (incl. CRE property under development or construction)	Annually	nc	nc		nc	nc	**nc**
	— of which non-performing CRE loans	Annually	nc	nc		nc	nc	**nc**
	— of which loans for acquiring property held by owners for the purpose of conducting their business, purpose or activity, either existing or under construction	Annually	nc	nc		nc	nc	**nc**
	— of which loans for acquiring rental housing	Annually	nc	nc		nc	nc	**nc**
	— of which loans for acquiring income-producing real estate (other than rental housing)	Annually	nc	nc		nc	nc	**nc**
	— of which loans for acquiring property held for social housing	Annually	nc	nc		nc	nc	**nc**

Indicator	Breakdown						Total
	Frequency	Property type (1)	Property location (2)	Investor type (3) (8)	Lender type (4)	Investor (8) / lender nationality (5)	
Loan loss provisions on CRE lending	Annually	nc	nc		nc	nc	**nc**
— of which non-performing CRE loans	Annually	nc	nc		nc	nc	**nc**
— of which loans for acquiring property held by owners for the purpose of conducting their business, purpose or activity, either existing or under construction	Annually	nc	nc		nc	nc	**nc**
— of which loans for acquiring rental housing	Annually	nc	nc		nc	nc	**nc**
— of which loans for acquiring income-producing real estate (other than rental housing)	Annually	nc	nc		nc	nc	**nc**
— of which loans for acquiring property held for social housing	Annually	nc	nc		nc	nc	**nc**
Lending to CRE 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**

	Indicator	Frequency	Breakdown					Total
			Property type [1]	Property location [2]	Investor type [3] [8]	Lender type [4]	Investor [8] / lender nationality [5]	
	Loan loss provisions on lending to CRE property under development	Annually	nc	nc		nc	nc	**nc**

([1]) Property type is broken down into office, retail, industrial, residential and other, where relevant for the indicator.
([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**

Lending standards indicators ([1])

	Indicator	Frequency	Weighted average of ratios
Flows ([2])	Loan-to-value at origination (LTV-O)	Quarterly	R
	— loans for acquiring property held by owners for the purpose of conducting their business, purpose or activity, either existing or under construction	Quarterly	R
	— loans for acquiring rental housing	Quarterly	R
	— loans for acquiring income-producing real estate (other than rental housing)	Quarterly	R
	— loans for acquiring CRE property under development	Quarterly	R
	— loans for acquiring property held for social housing	Quarterly	R

	Indicator	Frequency	Weighted average of ratios
	Interest coverage ratio at origination (ICR-O)	Quarterly	R
	— loans for acquiring property held by owners for the purpose of conducting their business, purpose or activity, either existing or under construction	Quarterly	R
	— loans for acquiring rental housing	Quarterly	R
	— loans for acquiring income-producing real estate (other than rental housing)	Quarterly	R
	— loans for acquiring CRE property under development	Quarterly	R
	— loans for acquiring property held for social housing	Quarterly	R
	Debt service coverage ratio at origination (DSCR-O)	Quarterly	R
	— loans for acquiring property held by owners for the purpose of conducting their business, purpose or activity, either existing or under construction	Quarterly	R
	— loans for acquiring rental housing	Quarterly	R
	— loans for acquiring income-producing real estate (other than rental housing)	Quarterly	R
	— loans for acquiring CRE property under development	Quarterly	R
	— loans for acquiring property held for social housing	Quarterly	R

	Indicator	Frequency	Weighted average of ratios
Stocks [3]	Current loan-to-value (LTV-C)	Annual	R
	— loans for acquiring property held by owners for the purpose of conducting their business, purpose or activity, either existing or under construction	Annual	R
	— loans for acquiring rental housing	Annual	R
	— loans for acquiring income-producing real estate (other than rental housing)	Annual	R
	— loans for acquiring CRE property under development	Annual	R
	— loans for acquiring property held for social housing	Annual	R
	Current interest coverage ratio (ICR-C)	Annual	R
	— loans for acquiring property held by owners for the purpose of conducting their business, purpose or activity, either existing or under construction	Annual	R
	— loans for acquiring rental housing	Annual	R
	— loans for acquiring income-producing real estate (other than rental housing)	Annual	R
	— loans for acquiring CRE property under development	Annual	R
	— loans for acquiring property held for social housing	Annual	R

	Indicator	Frequency	Weighted average of ratios
	Current debt service coverage ratio (DSCR-C)	Annual	R
	— loans for acquiring property held by owners for the purpose of conducting their business, purpose or activity, either existing or under construction	Annual	R
	— loans for acquiring rental housing	Annual	R
	— loans for acquiring income-producing real estate (other than rental housing)	Annual	R
	— loans for acquiring CRE property under development	Annual	R
	— loans for acquiring property held for social housing	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

Annex IV to Recommendation ESRB/2016/14 is replaced by the following:

'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.

[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.

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

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

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

(f) 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. In addition to calculating the LTV-O in accordance with the method described in paragraphs 2 and 3 above, national macroprudential authorities may also, if they consider it necessary in order to accommodate the specificities of their markets, also calculate the LTV-O by deducting from the definition of 'V' in paragraph 3, the total amount of all outstanding RRE loans, disbursed or not, that are secured by 'senior liens' on the property, instead of including these loans in the calculation of 'L' as described in paragraph 2.

5. 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.

6. 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:

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

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

Annex V to Recommendation ESRB/2016/14 is replaced by the following:

'ANNEX V

GUIDANCE ON DEFINITIONS AND INDICATORS

This Annex provides guidance on specific issues related to the definition of 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 definition of CRE. While the premise on which this Recommendation was originally issued justified the adoption of more detailed definitions for financial stability purposes, recent developments in statistics have highlighted the need to align more closely the definition of CRE with that in Regulation (EU) 2016/867, in order to facilitate the monitoring activities and financial analyses of national macroprudential authorities and to allow for complete comparability between countries.

(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. Recommendations II.17 and II.18 of the Second Phase of the G20 Data Gaps Initiative (DGI-2) ([4]) highlight the requirement to improve the availability of both residential and commercial real estate statistics. Following up on this initiative, in 2017, the Commission (Eurostat) published a report on '*Commercial property price indicators: sources, methods and issues*' ([5]), which provides input on the source data and methodologies in relation to commercial property price indices, with the aim of better informing compilers and users of alternative data sources, measurement methods, and the issues at stake.

(e) The Basel Committee on Banking Supervision's consultation document on revisions to the standardised approach for credit risk ([6]) 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.

([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]) Financial Stability Board and International Monetary Fund, *Sixth Progress Report on the Implementation of the G-20 Data Gaps Initiative,* September 2015.

([5]) 'Commercial property price indicators: sources, methods and issues', *Statistical Reports* 2017 edition, Eurostat, Publications office of the European Union, 2017.

([6]) Basel Committee on Banking Supervision, *Revisions to the Standardised Approach to credit risk – second consultative document,* December 2015.

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 real estate, either existing or under development, including rental housing; or real estate used by the owners of the property for conducting their business, purpose or activity, either existing or under construction; that is not classified as RRE; and includes social 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.

Income-producing real estate is defined as all immovable properties with income generated by their rents or profits from their sale. Therefore, buy-to-let housing and rental housing are both sub-categories of income-producing real estate.

Buy-to-let housing refers to any real estate directly owned by natural persons, with the primary aim of being let to tenants. Buy-to-let housing is 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. For this reason buy-to-let housing is classified as RRE and is therefore automatically excluded from the definition of CRE, even though it is still considered to be income-producing real estate. Nevertheless, because of its distinct risk characteristics, national macroprudential authorities are recommended to monitor developments in this sub-market under a separate breakdown, should this activity represent a significant source of risks or a significant share of the stock or flows of total RRE lending. For this reason, a breakdown of RRE loans has also been included to distinguish between buy-to-let loans and owner occupied loans. Buy-to-let housing which is under construction is also deemed to be RRE. Similarly, dwellings which are being constructed with the aim of being used for dwelling purposes by the owners are also deemed to be RRE property.

Rental housing refers to real estate which is owned by legal entities (such as professional investors) with the aim of being let to tenants. Such properties are also deemed to be income-producing real estate and as such are classified as CRE. In addition, rental housing which is under construction is also classified as CRE, and in particular as income-producing real estate under development. Separate monitoring of the financing of rental housing may also be relevant for financial stability purposes. For this reason, separate breakdowns have been included for these types of loans.

Income-producing real estate other than buy-to-let housing and rental housing is also included in the definition of CRE, whether existing or under construction. Examples of such other types of income-producing real estate include rented office buildings and rented business premises. When under construction, such types of income-producing real estate are considered to be income-producing real estate under development, which is classified as CRE.

Real estate used by the owners of the property for conducting their business, purpose or activity includes business premises, as well as real estate of a more sui generis nature, such as churches, universities, museums, etc. Whether real estate used by the owners of the property for conducting their business, purpose or activity should be classified as CRE or as another type of real estate can be debated. In this respect, national practices vary, since the risks associated with such real estate may, in some Member States, be considered to be different from the risks associated with CRE. Nevertheless, while acknowledging that the risks may vary across Member States, it is also important to monitor such risks for financial stability purposes. For this reason, real estate used by the owners of the property for conducting their business, purpose or activity has been included in the definition of CRE. In addition, to cater for the specificities of the financing of the different real estate markets across Member States, separate breakdowns are also included in order to monitor risks connected to these types of financing separately. Real estate used by the owners of the property for conducting their business, purpose or activity should also be considered as CRE both during the construction phase and upon completion.

Social housing is a complex segment of the real estate market, as it may take different forms across and within Member States. Given that social housing is not usually built, acquired or renovated by natural persons, it is not classified as RRE, but as CRE. However, in some countries, in view of financial stability considerations, it is important to monitor the risks stemming from this type of property under a separate breakdown. For this reason, separate breakdowns have been added for these types of loans. In addition, social housing which is owned directly by the State is deemed to be owned for the purpose of conducting the government's purpose and is therefore also classified as CRE. Social housing which is still under construction is also classified as CRE, as it is considered as income-producing real estate under development.

Any other properties under construction should be considered as either RRE or CRE in accordance with the general definitions in points (4) and (38), respectively, of section 2(1)(1).

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 [7].

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 [8] and for investment funds under Directive 2011/61/EU of the European Parliament and of the Council [9] 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.

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.

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[7] ESRB, *Report on Commercial Real Estate and Financial Stability in the EU*, December 2015, in particular Annex II, Section 2.2.

[8] 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).

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

3. **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 sub-markets, 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.

'Property territory' refers to the territory where the property that serves as collateral for a loan provided within the domestic financial system of any Member State is located. This breakdown should include the following sub-categories:

(a) domestic territory;

(b) foreign territory broken down into individual countries which the national macroprudential authorities of the Member State deem important for financial stability purposes.

'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 nationality of the ultimate investor or lender 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.

The breakdowns set out in Recommendation D(2) are to be considered as the recommended minimum. However, national macroprudential authorities are not prevented from making use of any additional breakdowns which, based on their own definitions and metrics, and taking into consideration the specificities of their national CRE markets, they may deem necessary for financial stability purposes. With respect to these additional breakdowns, national macroprudential authorities may choose to monitor and categorise these market segments as they deem appropriate for their national CRE markets. Moreover, where certain sub-categories of CRE or RRE are not deemed to be of relevance for financial stability purposes, national macroprudential authorities may choose not to monitor the risks stemming from such types of property and/or from their financing. In such cases, inaction by national macroprudential authorities will be deemed to be justified provided that sufficient explanations are provided.

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 ([10]). 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.

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.

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

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 an income-producing property or set of properties, or to cashflow generated by the conduct of the business, purpose or activity of the owners of a property or set of properties, net of taxes and operating expenses that the borrower must incur in order to maintain the property's value and – in the case of cashflow – adjusted for other costs and benefits directly connected with the use of the property.

ICR is defined as:

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

For the purposes of calculating ICR:

(a) 'net annual income' includes the annual rental income accruing from renting property to tenants or the annual cashflow generated by the conduct of the business, purpose or activity of the owners of the property, net of taxes and any operational expenses to maintain the property's value and – in the case of cashflow – adjusted for other costs and benefits directly connected with the use of the property.

(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:

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

For the purpose of calculating DSCR:

(a) 'net annual income' is the annual rental income accruing from renting property to tenants or the annual cashflow generated by the conduct of the business, purpose or activity of the owners of the property, net of any taxes and operational expenses to maintain the property's value and – in the case of cashflow – adjusted for other costs and benefits directly connected with the use of the property.

(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 income-producing property under development**

For income-producing 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 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 ([11]), 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.

([11]) 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).'.