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Closing real estate data gaps for financial stability monitoring and macroprudential policy in the EU[1]

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Closing real estate data gaps for financial stability monitoring and macroprudential policy in the EU

Recommendation 2016/14 of the European Systemic Risk Board on closing real estate data gaps

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Abstract

On 31 October 2016, the European Systemic Risk Board (ESRB) adopted the Recommendation on closing data gaps in the residential and commercial real estate sectors addressed to the national macroprudential authorities in the EU. The aim of this Recommendation is to identify a common set of indicators that national macroprudential authorities are recommended to monitor along with some key definitions. This article describes the origins of the Recommendation and discusses its objectives, nature and scope. The article then presents the main indicators of the recommended monitoring framework for the residential and commercial real estate sectors and important conceptual issues related to their definition. It concludes by reviewing the next steps to be taken for the effective implementation of the Recommendation.

Keywords: Commercial real estate, Residential real estate, Data gaps, Financial stability, Macroprudential policy.

JEL classification: G18, G21, G31, G38

1. Introduction

The most recent and past financial crises underscored the importance of developments in the real estate sector for the financial system and the real economy. Adverse market developments in some countries of the European Union (EU), both in the residential real estate (RRE) sector and the commercial real estate (CRE) sector, resulted in large losses for some credit providers, with severe consequences for the real economy. This important economic impact stems from the tight interplay between the real estate sector, funding providers and other economic sectors, as well as the strong feedback loops that exist between the financial system and the real economy, reinforcing negative developments.

Against this background, analysing and addressing vulnerabilities in the real estate sector is a key responsibility of macroprudential authorities which therefore need to have the necessary analytical frameworks in place. Any risk assessment and policy implementation crucially depends on the availability of reliable, granular, timely and harmonised data on real estate markets. In particular, the effective monitoring of real estate markets requires information on a set of indicators that can signal the build-up of vulnerabilities well in advance and that encompass several dimensions.

The lack of commonly agreed working definitions across EU countries on the RRE and CRE sectors, along with limited data availability for a number of relevant indicators, hampers the reliability of financial stability analyses, making it difficult to accurately assess and compare risks across national markets. Earlier work undertaken under the aegis of the European Systemic Risk Board (ESRB) revealed the existence of important gaps in the availability and comparability of real estate indicators across EU countries.

On the RRE side, the ESRB[1] highlighted the lack of availability of comparable, high-quality data for RRE credit standards indicators, such as the Loan-to-Value (LTV) ratio, the Loan-to-Income (LTI) ratio, the Loan Service to Income (LSTI), the Debt-to-Income (DTI) ratio and the Debt Service to Income (DSTI) ratio. The absence of sufficient and harmonised data on these metrics affects both the financial stability surveillance of the RRE sector and the implementation of borrower-based macroprudential instruments targeting RRE vulnerabilities.

The assessment of the ability of these indicators to provide early warnings against the build-up of systemic risks has been hampered by the absence of reliable and harmonised time series. Furthermore, the data gaps impede the cross-country comparison of the prudential policy stance regarding borrower-based measures targeting RRE vulnerabilities.

On the CRE side, similar ESRB work[2] concluded that the absence of a harmonised working definition of commercial property and the lack of a granular and consistent data framework to capture broader market developments made the analyses of systemic risks problematic. Data gaps for CRE are more severe than for RRE and encompass several dimensions, such as the physical market, the exposures of funding providers and lending standards (i.e. indicators such as the Interest Coverage Ratio or ICR and the Debt Service Coverage Ratio or DSCR).

Against this background, ESRB Recommendation 2016/14 aims at providing the basis for closing existing gaps in the availability and comparability of data on RRE and CRE markets in the EU relevant for macroprudential purposes. It provides target working definitions of RRE and CRE, a common set of indicators that national macroprudential authorities are recommended to monitor, along with target definitions of these indicators.

This article provides an overview of the Recommendation, starting from the context that motivated its adoption (Section 2), describing its objectives and scope (Section 3), as well as the indicators and related definitions it introduces for the monitoring of the RRE and CRE sectors in the EU (Sections 4, 5 and 6). The article concludes with reviewing the different steps still required for the effective implementation of the Recommendation (Section 7).

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

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

2. Background

2.1 The importance of the real estate sector for financial stability

The relevance of the RRE sector for financial stability lies in the dominance of RRE assets in households' wealth, the large contribution of the RRE sector to GDP and the key role of the financial sector (mainly credit institutions) in providing funding for RRE investments. According to the ECB's Statistical Data Warehouse (SDW) figures at end September 2016, mortgage loans account for 40% to 90% of total lending of monetary financial institutions (MFIs) to households in the different EU countries. The tight interplay between the housing market and the economy leads to strong transmission channels in a downturn (or upturn) phase: a steep fall in house prices negatively affects households' wealth and financial institutions' balance sheets through collateral and property values (asset valuation channel); it further increases the riskiness of households and of construction firms, resulting in the adoption of more stringent lending standards by banks (credit risk channel).

Developments in the CRE sector are also relevant for financial stability because of the highly cyclical nature of the sector, its concentration in a few EU countries and the size of banks' and other institutions' exposures to it. While less important in volume than RRE lending, CRE lending still represents a substantial share of EU banks' loan portfolio. According to the ECB's SDW figures at end September 2016, in most EU countries, lending to the construction sector and real estate related activities (a proxy for commercial real estate lending) makes up between around 20% to 50% of total lending by monetary and financial institutions (MFIs) to corporates.

In the past, adverse developments in CRE markets also played an important role in financial crises, most notably in the Nordic countries and in the United States in the early 1990s, in some Asian economies in the late 1990s, as well as in some EU countries during the recent global financial crisis.[3] Moreover, losses on banks' CRE lending exposures have often been higher than those on RRE lending even though RRE lending exposures are typically larger. The higher losses on CRE lending are due to the predominantly non-recourse basis of CRE loans and to the fact that CRE property is much less liquid than RRE property.

Due to the importance of the real estate sector for financial stability and for the economy, establishing a more harmonised framework for monitoring developments in the RRE and CRE markets is crucial to ensure the early identification of vulnerabilities that could lead to future financial crises.

[3] See Englund, P., "The Swedish Banking Crisis: Roots and Consequences", Oxford Review of Economic Policy, Vol.15, No 3, 2004; Richard J. Herring and Susan M. Wachter (1999), "Real Estate Booms and Banking Busts: An International Perspective", The Wharton School Research Paper and Liow Kim (2004), "Time-Varying Macroeconomic Risk and Commercial Real Estate: An Asset Pricing Perspective", Journal of Real Estate Portfolio Management.

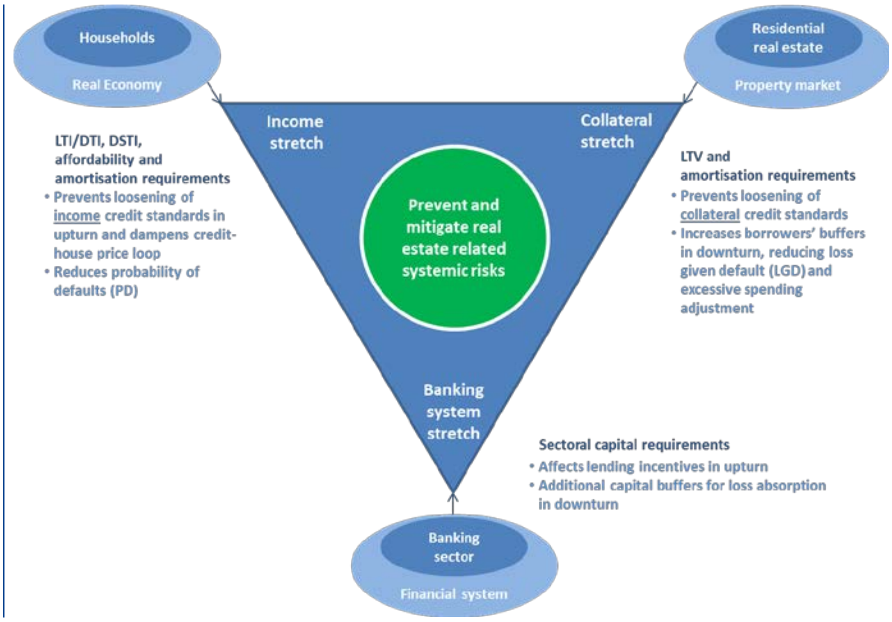
2.2 Real estate instruments and indicators on lending standards

Macroprudential policy aims at addressing the emergence of systemic risks in all or parts of the financial system, with the aim of increasing its resilience and preserving financial stability. Several macroprudential instruments have been designed to address vulnerabilities stemming from the real estate sector. A useful categorisation of real estate instruments is the so-called "three stretches model" (see Figure 1), which applies to both RRE and CRE. Many of these instruments take the form of limits to the values of certain indicators for lending standards, which are in turn particularly relevant for an effective monitoring framework as envisaged by the Recommendation. The three stretches are:

- **Household (or debtor / income) stretch instruments** refer to macroprudential measures aimed at addressing vulnerabilities rooted in borrowers' indebtedness. Instruments such as LTI, LSTI, DTI and DSTI limits can increase borrowers' resilience by restricting the loan amount relative to their income (households, in the case of RRE). By influencing borrowers' probability of default, these measures also improve the quality of banks' mortgage loan portfolios.
- **Collateral stretch instruments.** These include instruments such as LTV and amortisation requirements, which limit borrowers' leverage (LTV) or affect the modalities of loan repayment over time (amortisation requirements). They can be helpful in addressing vulnerabilities rooted in real estate markets, in particular in relation to property prices and valuation changes. Key aspects in the design of such instruments (and indicators) are the valuation approaches for the collateral and the coverage of the instrument.
- **Banking (or lender) stretch instruments** aim to increase the resilience of lenders by improving their loss-absorbing capacity (capital buffers) and thereby limit the impact of crystallising credit risk. The prudential rules for the EU's banking sector are laid down in the Fourth Capital Requirements Directive and the Capital Requirements Regulation (CRD4/CRR)[4]. These consist mainly of capital-based instruments targeting the capital structure of credit institutions and that can also be used to mitigate risks emerging in specific sectors, including real estate.

[4] Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC (OJ L 176, 27.6.2013, p. 338) ("CRD4"); Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 (OJ L 176, 27.6.2013, p. 1) ("CRR").

Figure 1: Instruments by stretches related to real estate lending



Source: ESRB (2015), Report on residential real estate and financial stability in the EU, December, p. 89

Therefore, indicators such as the LTV, LTI, LSTI, DTI and DSTI ratios can be used to guide national authorities in the use of national macroprudential instruments targeting borrowers which are outside the scope of the CRD4/CRR (such as caps on LTV, LTI, LSTI, DTI and DSTI ratios). Furthermore, the indicators can also play an important role in determining whether and when to tighten or release the harmonised macroprudential instruments targeting lenders that are available under EU law. Some of these instruments have already been activated by EU countries[5], although the definitions of the instruments and indicators vary across jurisdictions. This hampers the comparability of macro-prudential policies targeting the real estate sector in different EU countries.

2.3 ESRB initiatives related to the real estate sector

In the aftermath of the 2007 financial crisis, national and supranational authorities have devoted increased attention to the identification of risks stemming from the real estate sector, and have designed macroprudential policy instruments to address the identified vulnerabilities. The ESRB, mandated to conduct macroprudential oversight of the financial system within the EU with the aim of contributing to the prevention or mitigation of systemic risks, has therefore from its very beginning devoted considerable attention to this sector[6].

The ESRB Recommendation on closing real estate data gaps is part of a broader effort to better understand and address risks related to real estate in the EU. Under

[5] For some examples, see ESRB (2016), Review of macroprudential policy in the EU, April.

[6] The ESRB's legal framework is governed by Regulation (EU) No 1092/2010 of the European Parliament and of the Council of 24 November 2010 on European Union macro-prudential oversight of the financial system and establishing a European Systemic Risk Board (EU) No 1092/2010 ("ESRB Regulation").

the aegis of the ESRB, several initiatives were taken to help guiding the macroprudential policy of national authorities, providing useful inputs to both the analysis of emerging risks at the EU level and to the implementation of macroprudential policy instruments. Four ESRB initiatives in particular need to be highlighted.

First, in 2014 the ESRB published its Flagship Report and the Handbook on Macroprudential Policy in the Banking sector[7]. The aim of these documents was to assist macroprudential authorities in the implementation of the new policy instruments that became available with the coming into force of the new EU prudential rules for banks on 1 January 2014. In particular, Chapter 3 of the Handbook is dedicated to the use of real estate instruments for macroprudential purposes, grouped into instruments that target banks (capital requirements) and instruments that target borrowers (LTV, LTI, DSTI limits).

Second, in 2015 the ESRB published two reports on the real estate sector and financial stability in the EU, focussing respectively on the RRE and CRE sector[8]. These reports investigate how structural features of, and cyclical developments in, these sectors may affect financial stability and how related risks can be addressed. The reports highlight that comparable high-quality data on some key metrics for financial stability monitoring and policymaking in this area are still not available. It was therefore recommended to develop harmonised definitions of key indicators for monitoring and cross-border comparison.

As follow-up to these two reports, the ESRB adopted, on 31 October 2016, Recommendation 2016/14 on closing real estate data gaps[9]. The aim of the Recommendation is to encourage national macroprudential authorities to implement a framework for monitoring developments in the RRE and CRE sectors relevant for financial stability, based on a set of recommended, commonly agreed target indicators and related definitions.

Finally, the ESRB has conducted an in depth analysis of RRE vulnerabilities across EU countries. This culminated, on 22 September 2016, with the issuance of warnings to eight EU countries on medium-term vulnerabilities in the RRE sector. The full documentation, including the warnings, the responses received from the "warned" countries and additional documents, was then published by the ESRB on 28 November 2016.[10]

[7] ESRB (2014), Flagship report on Macroprudential Policy in the Banking Sector, March; ESRB (2014), Handbook on operationalising Macroprudential Policy in the Banking Sector, March.

[8] See footnotes 1 and 2.

[9] ESRB Recommendation on Closing Real Estate Data Gaps (ESRB/2016/14): https://www.esrb.europa.eu/pub/pdf/recommendations/2016/ESRB_2016_14.en.pdf?641b03e63b2595 3a1ba16ed8973530ca

[10] The reader is referred to the ESRB report on "Vulnerabilities in the EU residential real estate sector" (November 2016) for the detailed country-specific vulnerability assessments

3. General features of the Recommendation

3.1 Objectives of the Recommendation

The Recommendation aims to address existing gaps in the availability and comparability of data on RRE and CRE markets in the EU relevant for financial stability and macroprudential policy. For these purposes, it provides target working definitions of RRE and CRE. In addition, it identifies a common set of indicators that national macroprudential authorities are recommended to monitor in order to assess risks resulting from the RRE and CRE sectors, along with target definitions of these indicators.

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

The purpose of the Recommendation is to provide the basis for a harmonised framework for monitoring real estate markets in the EU: hence, it does not imply the EU-wide collection of data on the indicators identified. However, the ESRB expressed the view that in a next stage it would be beneficial for financial stability and macroprudential policymaking to regularly collect and distribute at EU level comparable country data on these indicators (see Section 7.2), to effectively close the data gaps in the real estate domain.

3.2 Nature and scope of the Recommendation

ESRB recommendations, like Recommendation 2016/14 discussed here, advise the addressees on policy actions to be taken to mitigate systemic risks identified by the ESRB. Recommendations are a soft law instrument subject to an "act or explain" mechanism, meaning that addressees either follow suit by implementing the recommendation or explain their non-action. In the case of Recommendation 2016/14, the addressees are the national macroprudential authorities of EU countries (and the European Supervisory Authorities - ESAs - for one sub-recommendation), in line with the earlier mentioned objectives of the Recommendation. Recommendations are adopted by the ESRB's decision making body, the General Board. The General Board membership includes high-level representatives of all central banks and financial supervisors of the EU as well as of the relevant European bodies (the ESAs, the European Commission and the Economic and Financial Committee - EFC).

While Recommendation 2016/14 introduces harmonised definitions and indicators for the macroprudential monitoring of RRE and CRE markets, it does not prevent national macroprudential authorities from relying, for their internal risk and policy assessment, on real estate indicators based on their own definitions and metrics, which may be better suited to accommodate national requirements. In that respect, there is a certain similarity between the Recommendation and the Basel Committee on Banking Supervision's guidance for the countercyclical capital buffer. In the latter case, the credit-to-GDP gap calculated according to a common methodology is seen as a useful common indicator; at the same time, it is recognised that this indicator does not need to play a dominant role in the information used by authorities to take and explain national buffer decisions.

The Recommendation is formally structured around five (sub)recommendations, two dealing with the RRE sector and three with the CRE sector. Especially for the CRE sector, data are in general scarce, incomplete or inconsistent, making it difficult to accurately describe and compare risks within and across national markets. Since the starting base for the RRE and CRE sectors is very different, the Recommendation is more detailed as regards data and indicators for the RRE sector compared to the CRE sector.

In order to provide a quick overview of the recommended indicators and breakdowns, the Recommendation includes in its annexes a number of templates for indicators on both sectors. These templates are only indicative, and they should not be considered as reporting templates. In a similar vein, the accompanying guidance on the methods for calculating the indicators used in the templates should not be seen as detailed technical instructions for completing the templates covering all possible cases, but rather as high-level direction.

3.3 Relationship with the AnaCredit project

The Recommendation takes into account other ongoing international and European initiatives in the area of data harmonisation and collection. The most relevant at the European level in the context of closing real estate data gaps is the AnaCredit project. "AnaCredit" stands for "*Analytical credit data standards*" and refers to a project aimed at establishing a dataset containing detailed information on individual bank loans in the euro area, harmonised across all the participating countries. This new dataset will support the European Central Bank (ECB) in performing its central banking and banking supervision functions, including in the area of financial stability. The ECB adopted a Regulation on the collection of granular credit and credit risk data, setting out the reporting requirements and reporting population for the AnaCredit project[11].

While AnaCredit will be a very important source of information for meeting the needs identified in the Recommendation, it cannot be relied on exclusively for closing real estate data gaps, due to some of its features.

First, the definitions of RRE and CRE provided in the Recommendation are more detailed and better suited for financial stability purposes than those outlined in the Anacredit Regulation, which refers to the (microprudential) definitions of the CRR (see Section 4). Second, information on some key indicators and market segments identified as important for financial stability in the Recommendation is not provided for in the Anacredit Regulation. Third, only euro area countries are within the scope of AnaCredit[12]. Fourth, AnaCredit is currently restricted to information on credit extended to legal persons and other institutional units, including non-financial

[11] 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 ("AnaCredit Regulation").

[12] EU countries outside the euro area have the option to participate on a voluntary basis, but at this stage it is still unclear which countries will decide to do so.

corporations. Information on credit to natural persons is not yet within its scope and the timing of such extension is not yet defined. Fifth, AnaCredit collects loans held (or serviced) only by credit institutions. The importance of other market participants in real estate financing, in particular CRE property, requires a large collection of loans granted by these institutions. Sixth, in application of the proportionality principle, small banks may be excluded from the scope of AnaCredit[13] although a macroprudential authority might consider that also their activity in the real estate sector needs to be monitored for reasons of financial stability.

4. Definitions of residential and commercial real estate

The RRE and CRE definitions are key elements for delineating the scope of the Recommendation. These definitions should be seen in the context of the Recommendation's aim of addressing data gaps specifically for the purposes of financial stability monitoring and macroprudential policymaking. The latter also explains why the definitions do not always coincide with the ones used in the CRR or the AnaCredit Regulation.

The Recommendation defines RRE as any immovable property located in the domestic territory, available for dwelling purposes, acquired, built or renovated by a private household and that is not qualified as a CRE property. This definition is very similar to the one in the CRR (also used by AnaCredit)[14].

The Recommendation also classifies buy-to-let property under the RRE heading, depending on some conditions regarding its ownership and purpose. Specifically, buy-to-let housing or property is defined as any RRE directly owned by a private household primarily for letting to tenants (the CRR and the AnaCredit Regulation do not provide for such a sub-category). This type of activity is only significant in certain EU countries, such as the United Kingdom and Ireland, and is generally considered to be a riskier segment of the RRE sector warranting separate monitoring and stricter measures[15]. Since the buy-to-let activity is typically undertaken by part-time, non-professional landlords with a small property portfolio, it belongs more to RRE than CRE.

CRE is defined as any income-producing real estate, either existing or under development, with the exclusion of social housing, property owned by end-users, and buy-to-let housing. In contrast, the CRR and the AnaCredit Regulation do not provide a positive CRE definition, but rather define CRE in a negative way as real estate that does not meet the RRE definition. For financial stability monitoring and macroprudential policy making, this broadens the scope of the definition too much,

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

[14] See Article 4(1) (75) of the CRR. Residential property is defined as a residence which is occupied by the owner or the lessee of the residence, including the right to inhabit an apartment in housing cooperatives located in Sweden.

[15] See for example, Central Bank of Ireland (2015), Restrictions on residential mortgage lending, Information Note; Prudential Regulation Authority (2016), Underwriting standards for buy-to-let mortgage contracts, Supervisory Statement, SS13/16, September.

motivating the more specific CRE definition in the Recommendation. Under the CRR and AnaCredit definition, CRE would also include corporate headquarters, buildings owned by firms and used for their corporate activity, certain public building infrastructure such as non-toll paying bridges and roads, religious buildings, etc. These type of buildings typically do not raise concerns of unsustainable credit or asset price developments relevant for financial stability or macroprudential policymaking, nor do they raise the issue whether their cash-flow generating capacity is sufficient to repay the contracted loans (with leverage being a key element for financial stability). It should be noted, though, that the ESRB definition allows the inclusion of buildings not financed by debt since equity investments may also contribute to a real estate bubble.

CRE is generally quite distinct from RRE, as it is shown in Table 1. However, there are a number of border cases for which the distinction is not always clear-cut, such as property under development, social housing and buy-to-let housing (the latter was discussed above).

Table 1: Comparison of the RRE and CRE sectors along some key dimensions

	Residential real estate	Commercial real estate
Definitional and data issues	Comparatively fewer definitional and data problems	No commonly agreed definition and delineation concerns. Serious problems of data scarcity and data comparability
Purpose	Held for own use or for income-generating purposes ("buy to let")	Only held for income-generating purposes
Political sensitivity	Politically sensitive (households, access to housing)	Much less politically sensitive (professional participants)
Complexity and transparency	Simpler, more transparent and homogenous, and large scope for standardisation	Complex, opaque and heterogeneous market, which poses specific risk management issues
Size of exposures	Exposures are generally more significant in bank portfolio	Exposures are generally less important in bank portfolio
Concentration risk	Lower due to higher granularity	Higher due to low granularity
Cyclicality	Comparatively less cyclical	Comparatively more cyclical
Default risk	Lower (own use, more liquid and less volatile market, recourse financing)	Higher (commercial use, less liquid and more volatile market, non-recourse financing)
Role of other economic channels	Developments may impact consumption channel	Developments may impact investment channel
Market actors	Often domestic banks dominate the market	More important role of non-banks and foreign participants
Experience with use of instruments	More experience with use of macroprudential instruments	Scarce experience with use of macroprudential instruments

Source: ESRB (2016), "A Review of Macroprudential Policy in the EU in 2015", May, p. 20

Whether property under development should be considered as CRE can be debated and national practices vary. However, the experience during the recent financial crisis has demonstrated the importance of including the financing of this activity in financial stability monitoring. Moreover, new property under development is expected to increase the future stock of CRE once completed. For the purposes of the Recommendation, property under development is therefore considered to be a sub-category of CRE. National macroprudential authorities are also recommended to focus the monitoring on the riskiest developments of the activity, such as those

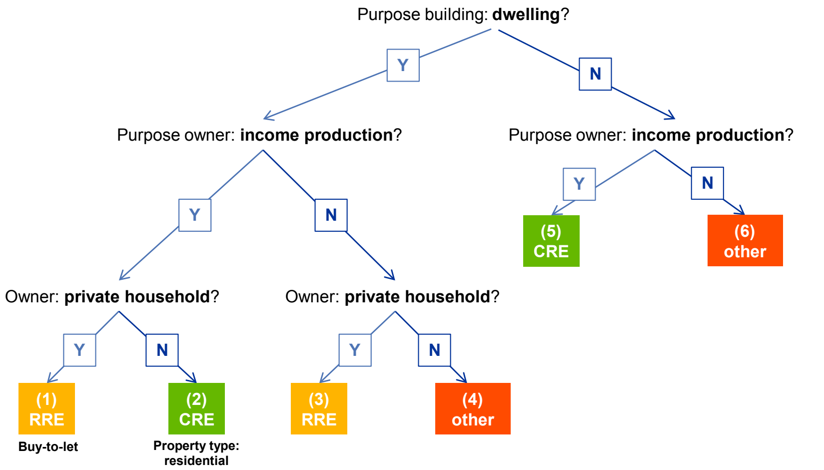
CRE projects with very low pre-let or pre-sale ratios, given the relevance for financial stability.

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

Given the large scale nature of multi-household dwellings that are not owned by a single private household, such dwellings belong more to CRE (albeit as a separate sub-segment) than to RRE, though it can be argued that this is a border case. The experience of countries such as Spain during the recent financial crisis, however, illustrate that developments in this segment of the real estate sector should be within the scope of financial stability monitoring.

Figure 2 provides an overview of the categorisation of real estate according to the Recommendation. The latter further specifies that if a property has a mixed CRE and RRE use (e.g. a building with shops at the ground floor and apartments on the upper floors), 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.

Figure 2: Real estate classification according to the Recommendation



(4) and (6) are outside the scope of the Recommendation because they are less relevant for financial stability and macroprudential policy
(4) includes, for example, certain forms of social housing
(6) includes, for example, certain public infrastructure (bridges and roads without toll), religious buildings, corporate headquarters

Data challenges are much greater for CRE than RRE: data are scarcer, patchier and less comparable. Authorities therefore often rely on private sector data to supplement official statistics. In that case, they are expected to identify the differences in scope and definitions compared to those mentioned in the Recommendation and be able to provide details on the underlying methodology used by the provider and the data coverage.

5. Guidance for the monitoring of the RRE sector

5.1 Indicators for the RRE sector

The Recommendation provides the main elements of a monitoring framework for RRE loans, which are defined as loans to private households secured by RRE property independent of the loans' purposes. The majority of such loans are mortgage loans.

The Recommendation identifies two broad categories of RRE indicators necessary to close the RRE data gaps: indicators on the financial system's exposures to the RRE sector and indicators on RRE lending standards. The first describe the main features of credit providers' RRE loan portfolio and include the total RRE loans disbursed within a given period as well as their decomposition in sub-categories such as loans to first time buyers and for buy-to-let housing, foreign currency loans, amortising loans, loan maturities and the different interest fixation periods used for RRE loans. The second category includes indicators on lending standards which, according to the three stretches model discussed above, include collateral stretch indicators (LTV) and income stretch (LTI, LSTI, DTI, DSTI) indicators. In case a country has a significant buy-to-let market, it is expected to monitor a number of additional indicators for the buy-to-let loans (Interest Coverage Ratio or ICR, Loan-to-Rent ratio or LTR).

The indicators on RRE lending standards can refer to their value at the time of the origination of the loan (for loan flows) or their current value (for loan stocks). Flows provide the most recent information on how conditions in the RRE market are developing over a certain period. Stocks, or the accumulated net flows over time, by contrast evolve much more slowly but are also relevant as they provide a picture of the loan portfolio at a given point in time.

Furthermore, it is not sufficient for the macroprudential authority to have only information on the average value of the indicators. More granular information on the distribution of the indicators (i.e. the relative importance of the different intervals or "buckets" for the value of a certain indicator) is very helpful for identifying the riskiest segments of the market that are particularly relevant for financial stability. In addition to univariate distributions (i.e. each distribution of values corresponds to a single indicator), joint distributions (i.e. a distribution that combines the variation in values over two indicators together) are also particularly helpful as they allow authorities to monitor vulnerabilities combining different stretches (e.g. the segments that are vulnerable along both the collateral and the income stretch dimensions).

5.2 Guidance on the RRE indicators

The Recommendation provides high-level guidance on the methods for calculating the indicators. These methods may need to be adjusted to accommodate for the specificities of national markets or market segments. In addition, once authorities start actually compiling data on these indicators, more detailed technical instructions may still be needed. Key elements for the calculation of the indicators are the value of the property (for LTV), the value of the loan (LTV, LTI, LSTI), the income of the borrower (LTI, LSTI, DTI, DSTI), the debt of the borrower (DTI, DSTI) and the loan service/debt service cost (LSTI, DSTI). Although indicators like LTV and LTI are well-established and available in many EU countries, the way they are calculated can be very different, hence the need for harmonised guidelines.

The value of the property can refer to the value at the moment the loan was originated (used for credit flows) or its current value (used for credit stocks). The value at origination is measured conservatively by taking the lower of the transaction value and the value assessed by an independent external or internal appraiser. In case the property is still being constructed, the total value of the property up to the reporting data is considered, thus accounting for the value increases due to the progress of the construction works. In case of prior liens on the property, these are deducted from the property value.

In case the current value of the property is used, the value needs to be assessed by an independent external or internal appraiser. If such assessment is not available, the current value can be estimated using a granular real estate value index; in case this one is also not available, a granular real estate price index can be used provided one also takes into account the depreciation of the property (hierarchy of approaches). Any real estate value of price index should be sufficiently differentiated according to the geographical location of the property and the property type.

The value of the loan includes all loans or loan tranches secured by the borrower on the property. The value is measured on the basis of disbursed amounts and therefore does not include any undrawn amounts on credit lines. In case the property is still under construction, the loan value is the sum of all loan tranches disbursed up to the reporting date. Alternatively, if this calculation method is not available or does not correspond to the prevailing market practice, the LTV can also be calculated on the basis of the total loan amount granted and the expected value of the property upon completion. The loan servicing cost is the combined interest and principal repayment on the RRE loan as just defined.

The income of the borrower refers to the borrower’s annual disposable income as registered by the lender. The disposable income can have various sources (e.g. employee income, unemployment benefits, pensions, etc.) and is net of any income taxes and health care/social security contributions. Only the income of the borrower should be taken into account, i.e. the signatory or cosignatory of the loan agreement and receiving financing from the lender, not that of any other family members that may reside in the same property.

The debt of the borrower covers 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 any other lenders). The debt servicing cost is then the combined interest and principal repayment on the borrower’s debt as just defined.

6. Guidance for the monitoring of the CRE sector

6.1 Indicators for the CRE sector

The Recommendation provides for three broad categories of CRE indicators: (i) indicators related to the physical CRE market, (ii) indicators on the financial system's exposures to the CRE sector, and (iii) indicators on CRE lending standards. Some basic indicators describing the CRE market, such as price and rental indices, are still missing in many EU countries, hence the need for this additional category of indicators on the physical market compared to RRE. The strong cyclical nature of developments in CRE markets requires that some aspects of the monitoring (e.g. price indicators, credit and investment flows) should take place at a higher frequency than for the RRE sector (quarterly rather than annually).

The Recommendation also foresees breakdowns of the physical market and exposures indicators according to the type of the property and the location of the property. "Property type" refers to the primary use of a commercial property, such as residential (e.g. multi-household premises), retail (e.g. hotels, restaurants, shopping malls), offices (e.g. a property primarily used as professional or business offices), industrial (e.g. property used for the purposes of production, distribution and logistics), and other types of CRE. Which of these property types are actually relevant may vary from country to country. "Property location" refers to the geographical breakdown (e.g. by regions) or to real estate submarkets, which shall also include prime and non-prime locations. A prime location is generally considered the best location in a particular market, which is also reflected in the rental yield (typically the lowest in the market).

Equity investors are very important in the CRE sector: end 2014, debt financing represented 53% of total CRE financing in Europe, having declined since 2009[16]. Another distinct feature is that cross-border investments, including those from outside the EU, can be very substantial for certain CRE markets (e.g. in the United Kingdom). These market characteristics imply that macroprudential authorities need information on both lenders and investors for an adequate financial stability monitoring, in particular on the type of the lender/investor (e.g. banks, insurance companies, investment funds) and the nationality of the lender/investor (domestic, rest of the European Economic Area, rest of the world). Just like for RRE, another relevant breakdown is between stocks and flows of CRE lending but also for CRE investments.

The three stretches model discussed earlier can also be applied to the CRE sector. The Recommendation provides for collateral stretch and income stretch indicators, which are similar to their RRE counterparts: LTV ratio, ICR and DSCR. For credit flows, the indicators are calculated at the time of origination; for credit stocks, they refer to current values. In principle, authorities should also monitor the distributions of the indicators, but due to the lack of information on the levels of such indicators, the Recommendation does not provide any further guidance as regards the buckets to be used for the indicators. *Mutatis mutandis*, the methods for calculating these indicators is similar as for RRE. Finally, the Recommendation specifies that for CRE

[16] ESRB (2015), Report on commercial real estate and financial stability in the EU, 2015, p. 20.

property under development, authorities may monitor the Loan-to-Cost ratio (LTC) instead of the LTV at origination; the LTC represents the initial amount of all loans granted in relation to the costs associated with the construction of the CRE property until completion.

6.2 Publication requirement of the ESAs

The Recommendation includes a specific publication requirement on CRE exposures for the three ESAs, i.e. the European Banking Authority (EBA), the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA). Such public disclosure is expected to enhance the knowledge of national macroprudential authorities on the activity of entities from EU countries on their domestic CRE market. The Recommendation does not prescribe the format of this publication, but requires the ESAs to define the publication templates. In case there are any concerns about the scope or quality of the published data, the publication should be accompanied with the appropriate disclaimers.

More specifically, the ESAs are recommended to disclose at least annually aggregated information on the exposures to the different national CRE markets in the EU for the entities within the scope of their supervision. The Recommendation does not require any new data collection by the ESAs but rather specifies that they should draw on information already available from regulatory reporting templates, in particular regarding the geographical breakdown of credit exposures and/or (direct and indirect) investments.

When reporting templates provide a breakdown by NACE[17] codes, CRE could be referred to as both Section ‘F’ (construction, excluding civil engineering) and Section ‘L’ (real estate activities, excluding real estate agencies), although strictly speaking some sub-categories would need to be excluded following the Recommendation’s definition of CRE. The main drawback of using NACE classifications is that they focus on the economic sector of the borrower and not the purpose of the loan. 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.

7. Next steps

7.1 Implementing the Recommendation

The Recommendation specifies the timeline for the follow-up by the addressees to the Recommendation. The national macroprudential authorities have until end 2018 to deliver to the ESRB and the Council of the EU[18] an interim report on the information already available, or expected to be available, for the implementation

[17] NACE is the classification of economic sectors in the EU and is derived from the French *Nomenclature statistique des activités économiques dans la Communauté européenne*.

[18] The involvement of the Council of the EU in the Recommendation and its follow-up are in line with the procedures provided for in the ESRB Regulation.

of the Recommendation. By end 2020, the ESRB and Council should receive the final implementation report.

The sub-recommendation which is only addressed to the ESAs provides for three deadlines: end 2017 for the definition of a template for the regular publication of exposure data of the entities under the scope of their supervision; end June 2018 for the first publication of data (reflecting the situation as of end 2017); and end March 2019, for the start of the regular (at least annual) publication of aforementioned exposure data.

The ESRB has well-established rules and procedures in place for assessing the implementation of Recommendations by addressees, which also apply to Recommendation 2016/14[19]. A few points need to be highlighted.

First, the principle of proportionality applies. This means that when proceeding with the implementation of the relevant indicators and methods for their calculation, the size and development of the national RRE and CRE markets should be taken into account. For example, only in countries where buy-to-let housing represents a significant source of risks needs the risk monitoring framework for the RRE sector to include additional indicators for this market segment. Similarly, CRE markets vary significantly across countries and the challenge of the Recommendation was to provide guidance relevant for both well developed and less developed CRE markets. Hence, also for the breakdowns of the CRE indicators according to CRE market segments, the proportionality principle applies (e.g. some break-downs may not be relevant for some countries).

Second, any assessment as regards the implementation of the Recommendation should consider the progress and constraints faced in the data collection at EU level mentioned in the next section. In particular, the final reports due by end 2020 may not necessarily include all key indicators if justified by such constraints.

7.2 Data collection at the EU level

The aim of the Recommendation is not to organise an EU-wide data collection on the indicators identified. Nevertheless, the ESRB indicated that in a next stage there would be merit in regularly collecting and distributing at EU level comparable country data on these indicators. Indeed, as indicated earlier, at present comparable data on key indicators are not available in the EU which complicates the cross-country comparison of risks and the use of instruments to address these risks. This is something the ESRB was confronted with when preparing the earlier-mentioned warnings to eight EU countries regarding medium-term vulnerabilities in the RRE sector.

The ECB is required to perform certain tasks regarding the functioning of the ESRB[20], in particular, it needs to provide analytical, statistical, logistical and administrative support to the ESRB. The ECB is therefore well-placed to coordinate such a data collection and distribution at EU level. Preparatory work on this was

[19] ESRB Secretariat (2016), Handbook on the assessment of compliance with ESRB recommendations, April.

[20] 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.

initiated under the aegis of the ECB's Statistics Committee after the adoption of the Recommendation.

As macroprudential authorities start implementing the Recommendation and the actual data collection at EU level proceeds, further technical guidance and work on the target definitions and indicators will be needed to accommodate for the specificities of national markets or market segments and to ensure the statistical quality of the data. The Recommendation specifies that any such more detailed implementation guidance should not change the basic features and purpose of the target definitions and indicators as laid down in the Recommendation.

Irving Fisher Committee on
Central Bank Statistics

BANK FOR INTERNATIONAL SETTLEMENTS

IFC-National Bank of Belgium Workshop on "*Data needs and Statistics compilation for macroprudential analysis*"

Brussels, Belgium, 18-19 May 2017

Closing real estate data gaps for financial stability monitoring and macroprudential policy in the EU[1]

Frank Dierick, European Systemic Risk Board Secretariat, and
Emmanuel Point, French Prudential Supervision and Resolution Authority

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[1] This presentation was prepared for the meeting. The views expressed are those of the authors and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

ESRB
European Systemic Risk Board
European System of Financial Supervision

Closing Real Estate Data Gaps for Financial Stability Monitoring and Macroprudential Policy in the EU

Frank Dierick (ESRB Secretariat) and Emmanuel Point (ACPR)

IFC – NBB Workshop
Data needs and Statistics compilation for Macroprudential Analysis

Brussels, 18 May 2017

PRESENTATION OUTLINE

1. Background

2. Residential real estate

3. Commercial real estate

1. BACKGROUND

BACKGROUND

- Importance of the real estate sector for financial stability
- ESRB work related to real estate and financial stability
- Warnings and recommendations as “soft law” tools of the ESRB
- Recommendation ESRB/2016/14 on closing real estate data gaps
- Objectives of the Recommendation:
  - Common set of indicators for monitoring framework
  - Harmonised indicators and definitions
  - Not (yet) actual data collection

2. RESIDENTIAL REAL ESTATE

DEFINITIONS OF RRE AND CRE

- **Definition of RRE**: any immovable property located in the domestic territory, available for dwelling purposes, acquired, built or renovated by a private household and that is not qualified as a CRE property

- **Definition of buy-to-let housing**: any RRE directly owned by a private household primarily for letting to tenants

  - This type of activity is only significant in certain EU countries (e.g. UK, Ireland) and is generally considered to be a riskier segment of the RRE sector warranting separate monitoring and stricter measures.

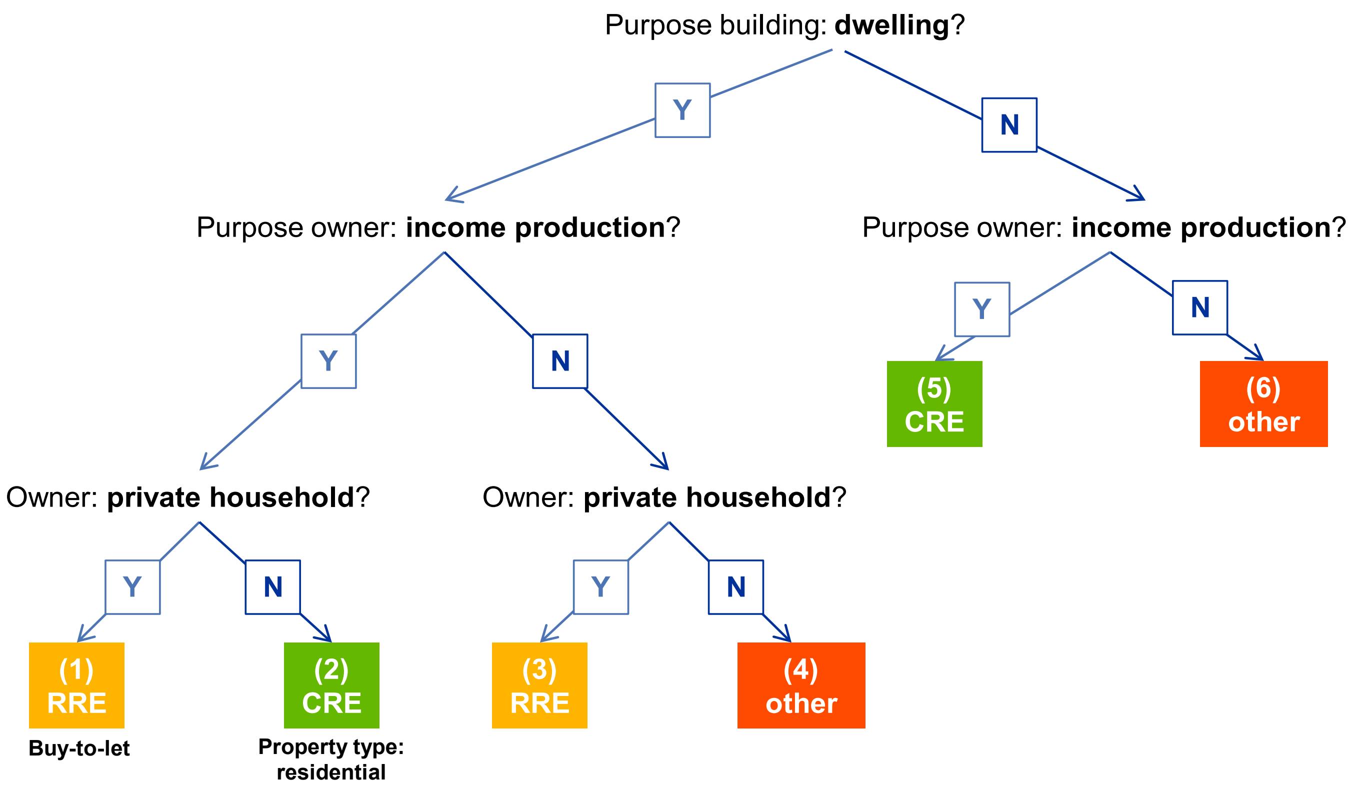
- **Definition of CRE**: any income-producing real estate, either existing or under development, with the exclusion of social housing, property owned by end-users, and buy-to-let housing

COMPARISON OF THE RRE AND CRE SECTORS

	Residential real estate	Commercial real estate
Definitional and data issues	Comparatively fewer definitional and data problems	No commonly agreed definition and delineation concerns. Serious problems of data scarcity and data comparability
Purpose	Held for own use or for income-generating purposes ("buy to let")	Only held for income-generating purposes
Political sensitivity	Politically sensitive (households, access to housing)	Much less politically sensitive (professional participants)
Complexity and transparency	Simpler, more transparent and homogenous, and large scope for standardisation	Complex, opaque and heterogeneous market, which poses specific risk management issues
Size of exposures	Exposures are generally more significant in bank portfolio	Exposures are generally less important in bank portfolio
Concentration risk	Lower due to higher granularity	Higher due to low granularity
Cyclicality	Comparatively less cyclical	Comparatively more cyclical
Default risk	Lower (own use, more liquid and less volatile market, recourse financing)	Higher (commercial use, less liquid and more volatile market, non-recourse financing)
Role of other economic channels	Developments may impact consumption channel	Developments may impact investment channel
Market actors	Often domestic banks dominate the market	More important role of non-banks and foreign participants
Experience with use of instruments	More experience with use of macroprudential instruments	Scarce experience with use of macroprudential instruments

Source: ESRB, A Review of Macroprudential Policy in the EU in 2015, May 2016, p. 20

REAL ESTATE CLASSIFICATION



(4) and (6) are outside the scope of the Recommendation because they are less relevant for financial stability and macroprudential policy
(4) includes, for example, certain forms of social housing
(6) includes, for example, certain public infrastructure (bridges and roads without toll), religious buildings, corporate headquarters

INDICATORS FOR THE RRE SECTOR

- **Two broad categories** of RRE indicators (template)
  - **Indicators on the financial system's exposures to the RRE sector:** total RRE loans disbursed within a given period and their decomposition in loans to first time buyers, buy-to-let housing, foreign currency loans, amortising loans…
  - **Indicators on RRE lending standards:** LTV, LTI, LSTI, DTI, DSTI

- In case a country has a significant **buy-to-let market**: Interest Coverage Ratio (ICR), Loan-to-Rent ratio (LTR)

- The indicators on RRE lending standards can refer:
  - to their value at the time of the origination of the loan (for loan flows);
  - their current value (for loan stocks)

- Information on the **average value** of the indicators BUT ALSO on the **distribution** of the indicators (i.e. "buckets")

- **Univariate** distributions BUT ALSO **joint** distributions (i.e. a distribution that combines the variation in values over two indicators jointly)

GUIDANCE ON THE RRE INDICATORS

- The Recommendation provides **high-level guidance** on the methods for calculating the indicators

- Key elements for the calculation of the indicators are (Annex IV):

  - **the value of the property** (for LTV)

    value at origination
    the lower of: 1. the transaction value (in notarial deed)
    2. the value assessed by independent appraiser

    current value
    value assessed by independent appraiser OR value estimated using a granular real estate value index

  - **the value of the loan** (LTV, LTI, LSTI): all loans or loan tranches secured by the borrower on the property; it is measured on the basis of disbursed amounts and does not include any undrawn amounts on credit lines

  - **the income of the borrower** (LTI, LSTI, DTI, DSTI): borrower's annual disposable income, net of taxes and health care/social security contributions

  - **the debt of the borrower** (DTI, DSTI): total debt of the borrower, whether or not it is secured by real estate, including all outstanding financial loans

  - **the loan service/debt service cost** (LSTI, DSTI): annual debt servicing cost of the RRE loan/total debt of the borrower

3. COMMERCIAL REAL ESTATE

INDICATORS FOR THE CRE SECTOR

- **Three broad categories** of CRE indicators
  - **Indicators on the physical CRE market:** prices, rents, yields, vacancy, construction starts
  - **Indicators on financial system's exposure to CRE:** both flows and stocks of credits (including NPLs and coverage) + focus on property under development (credit stocks)
  - **Indicators on lending standards:** LTV, ICR, DSCR

- Where **investments** represent a significant share of CRE financing:
  - Investment flows and stocks (both direct and indirect)
  - Valuation adjustments on CRE investment (both for flows and stocks)

- **Additional breakdowns:** property type, property location, funding providers' nationality

- Information on the **average value** of lending standards BUT ALSO on the **distribution** of the indicators (i.e. "buckets") – however no guidance on these buckets and no bivariate distributions

- template

GUIDANCE ON CRE

- Since monitoring of risks related to CRE is much less developed, the Recommendation provides guidance on various topics (Annex V):
  - Need for a **working definition** of CRE for macroprudential purposes
  - Lists of possible **data sources** for both physical market and financial system's exposures (proxies)
  - **Breakdowns:** property type, property location", investor type, lender type and nationality
  - Assessment of **CRE prices**
  - Assessment of the **financial system's exposures** (lending vs investment, double counting, foreign exposures…)
  - Key elements for the calculation of **lending standards** identical to RRE whenever possible:
    - LTV: syndicated loans, valuation of each individual property, distribution
    - ICR: income = net annual rental income on the property
    - LTC as a substitute to LTV for property under development
  - Annual **publication of data by ESAs**

NEXT STEPS

- Implementation of the Recommendation
- Actual data collection

Thank you for your attention !

www.esrb.europa.eu

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, #
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 %)
o/w non-amortising*	Avg (in %)
DISTRIBUTION	
≤ 50%	ncu, #
]50% ; 60%]	ncu, #
]60% ; 70%]	ncu, #
]70% ; 80%]	ncu, #
]80% ; 90%]	ncu, #
]90% ; 100%]	ncu, #
]100% ; 110%]	ncu, #
> 110%	ncu, #
Not available	ncu, #

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	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, #

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 amortizing	Avg (in %)
o/w partly amortizing	Avg (in %)
o/w non-amortizing*	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, #

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, #

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, #

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, #
LTV-O >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, #

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

back

1. **Template A: indicators on the physical market**

	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**

	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**
	— of which indirect CRE holdings	Quarterly			nc		nc	**nc**
	Valuation adjustments on CRE investments	Quarterly	nc	nc	nc		nc	**nc**
	Lending to CRE (incl. property under development)	Quarterly	nc	nc		nc	nc	**nc**
	— of which to property under development	Quarterly	nc	nc		nc	nc	**nc**
	Non-performing CRE loans (incl. property under development)	Quarterly	nc	nc		nc	nc	**nc**
	— of which to property under development	Quarterly	nc	nc		nc	nc	**nc**
	Loan loss provisions on CRE lending (incl. property under development)	Quarterly	nc	nc		nc	nc	**nc**
	— of which to property under development	Quarterly	nc	nc		nc	nc	**nc**

	Indicator	Frequency	Breakdown					Total
			Property type (1)	Property location (2)	Investor type (3), (8)	Lender type (4)	Investor (8) / lender nationality (5)	
Stocks (7)	Investments in CRE (8)	Annually	nc	nc	nc		nc	**nc**
	— of which direct CRE holdings	Annually	nc	nc	nc		nc	**nc**
	— of which indirect CRE holdings	Annually			nc		nc	**nc**
	Valuation adjustments on CRE investments	Annually	nc	nc	nc		nc	**nc**
	Lending to CRE (incl. property under development)	Annually	nc	nc		nc	nc	**nc**
	— of which non-performing CRE loans	Annually	nc	nc		nc	nc	**nc**
	Loan loss provisions on CRE lending	Annually	nc	nc		nc	nc	**nc**
	Lending to property under development (as part of CRE lending)	Annually	nc	nc		nc	nc	**nc**
	— of which non-performing loans	Annually	nc	nc		nc	nc	**nc**
	Loan loss provisions on lending to property under development	Annually	nc	nc		nc	nc	**nc**

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

3. **Template C: indicators on lending standards** (1)

	Indicator	Frequency	Weighted average of ratios
Flows (2)	Loan-to-value at origination (LTV-O)	Quarterly	R
	Interest coverage ratio at origination (ICR-O)	Quarterly	R
	Debt service coverage ratio at origination (DSCR-O)	Quarterly	R
Stocks (3)	Current loan-to-value (LTV-C)	Annual	R
	Current interest coverage ratio (ICR-C)	Annual	R
	Current debt service coverage ratio (DSCR-C)	Annual	R

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