

Residential and commercial real estate data markets and financial stability in the EU



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Real estate is a key economic sector for financial and macroeconomic stability. The sector is prone to boom/bust cycles and has been a common cause of banking crises in the past. Macroprudential authorities should therefore closely monitor developments in this crucial sector and stand ready to take policy action in case adverse developments pose a threat to financial stability. Over recent years, many EU countries have actively used macroprudential instruments to address vulnerabilities in the real estate sector. This article reviews the work of the European Systemic Risk Board (ESRB) concerning the residential and commercial real estate sectors and financial stability in the EU, covering both the ESRB's analytical work and policy work.

1. Introduction

The ESRB was established end 2010 in the wake of the most recent financial crisis and was charged with the macroprudential oversight of the financial system within the European Union (EU)¹. It contributes to the prevention and mitigation of systemic risks to financial stability in the Union that arise from developments within the financial system and taking into account macroeconomic developments, so as to avoid periods of widespread financial distress. The ESRB further contributes to the smooth functioning of the internal market and thereby ensures a sustainable contribution of the financial sector to economic growth. Finally, the ESRB has also a coordination role and plays the role of an information hub, acting as a forum to exchange information on macroprudential matters, coordinate actions and develop joint positions.

¹ 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.



The ESRB brings together representatives of the central banks and financial supervisory authorities of all the EU countries, as well as representatives of a number of relevant European institutions such as the European Central Bank (ECB), the three European Supervisory Authorities (ESAa), the European Commission and the Economic and Financial Committee (EFC). The Secretariat of the ESRB is hosted by the ECB, which also provides analytical, statistical, administrative and organisational support to the ESRB².

The ESRB can issue warnings and recommendations to certain addressees on issues pertaining to its mandate. These warnings and recommendations are soft law tools, i.e. they are not legally binding. However various factors, such as the composition of the ESRB, the possibility of publishing the warnings and recommendations, and an “act or explain” mechanism for the recommendations, make that in practice a very high compliance rate is observed.

Since its beginning, the ESRB has devoted considerable attention to real estate markets in the EU given the importance for financial stability (see Section 2). The ESRB output in this area covers both policy work and analytical work. Four main ESRB initiatives in particular need to be highlighted.

First, in 2014 the ESRB published its Flagship Report and Handbook on Macroprudential Policy in the Banking sector³. Chapter 3 of the Handbook is dedicated to the use of real estate instruments for macroprudential purposes, which can be broadly grouped into instruments that target banks and instruments that target borrowers.

Second, in 2015 the ESRB published two reports on the real estate sector and financial stability in the EU, one focussing on the residential real estate (RRE) sector and the other on the commercial real estate (CRE) sector⁴. 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.

Third, as follow-up to these two reports the ESRB adopted on 31 October 2016 Recommendation 2016/14 on closing real estate data gaps. The Recommendation’s aim 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.

Fourth, the ESRB 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

² 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.

³ ESRB, Flagship report on macroprudential policy in the banking sector, March 2014; ESRB, Handbook on operationalising macroprudential policy in the banking sector, March 2014.

⁴ ESRB, Report on residential real estate and financial stability in the EU, December 2015; ESRB, Report on commercial real estate and financial stability in the EU, December 2015.

received from the “warned” countries and additional documents, was published by the ESRB on 28 November 2016⁵. Finally, also in its regular monitoring of the conditions of the EU financial system, the ESRB pays particular attention to the conditions of the real estate market in EU countries. For example, the ESRB risk dashboard, which is published on a quarterly basis, includes relevant indicators, such as loans for house purchases, borrowing costs for house purchases, changes in property prices and indicators on the over/undervaluation of residential property prices.

The remainder of this article reviews the main outputs of the ESRB related to the real estate sector, after first discussing the importance of the real estate sector for financial stability.

2. Importance of the real estate sector for financial stability

Most recent and past financial crises underscore the importance of developments in the real estate sector for the financial system and the real economy⁶. Adverse market developments in some EU countries, both in the RRE sector and the CRE sector, resulted in large losses for some lenders and with severe consequences for the real economy. Since the 1970s, 12 out of 28 EU Member States experienced a financial crisis related to developments in the real estate sector, in particular in the 1990s and during the recent global financial crisis, and some countries even witnessed more than one such crisis.

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 ECB figures at end September 2016, mortgage loans make up between 40% to 90% of total lending 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). Structural features of RRE markets may further amplify or dampen these transmission channels.

ESRB work identified possible indicators that might be particularly relevant during the build-up of financial stability risks in RRE markets and investigated how they behaved prior to the recent financial crisis⁷. Different indicators may be useful depending on the phase of the real estate cycle. Possible early warning indicators of a real estate boom include cyclical indicators of credit and/or real estate

⁵ ESRB, Vulnerabilities in the EU residential real estate sector, November 2016.

⁶ The ESRB report on residential real estate and financial stability in the EU (December 2015) develops a conceptual framework of how the housing market, real economy and financial sector are interlinked, see page 35 and further.

⁷ See also Stijn Ferrari, Mara Pirovano and Wanda Cornacchia, Identifying early warning indicators for real estate-related banking crises, ESRB Occasional paper no. 8, August 2015.

prices, combined with their corresponding structural indicators (such as bank credit-to-GDP and price-to-rent ratios); relevant indicators for the bust phase include decreases in loan supply and house prices, and rising non-performing loans and bankruptcy rates.

In the past, adverse developments in CRE markets have 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.⁸

While less important in volume than RRE lending, CRE lending still represents a substantial share of EU banks' loan portfolio. According to ECB 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 20% to 50% of total lending to firms. 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 is due to the fact that it tends to be on a non-recourse basis, its highly cyclical nature, and the fact that CRE property is much less liquid than RRE property.

3. Features of real estate markets

3.1 Residential real estate markets

The ESRB report on residential real estate and financial stability in the EU (December 2015) investigates how structural features of RRE markets in the EU may affect financial stability and how related risks can be addressed.

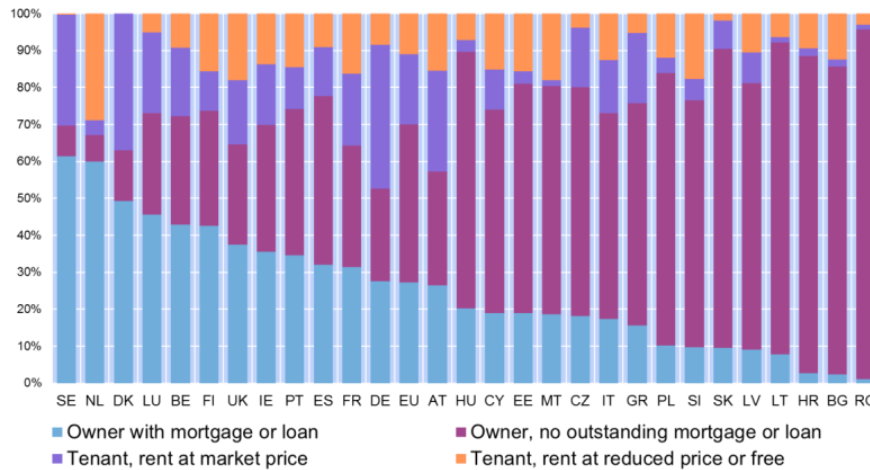
The structural features of RRE markets can be usefully grouped into demand-side, supply-side and institutional factors. Demand-side factors include household income, credit availability and interest rates, home ownership rates, and demographic factors. Supply-side elements encompass factors such as residential investment, housing construction and construction costs. Institutional factors include housing taxes and subsidies, mortgage contract features (e.g. variable vs. fixed rate contracts), as well as foreclosure and insolvency procedures.

EU countries differ widely in terms of these features, for example as regards the relative importance of home ownership, mortgage lending and the rental market (see Figure 1). While in countries such as the Netherlands and Estonia, housing taxes decrease the marginal cost of acquiring a house, in France and Greece they increase the costs substantially (see Figure 2). In Sweden the average mortgage maturity is more than 40 years, while in Hungary it is only 15 years. In some countries of Central, Eastern, and South-eastern Europe, mortgage lending in foreign currencies (euro or Swiss

⁸ See Peter Englund, *The Swedish banking crisis: roots and consequences*, Oxford Review of Economic Policy, Vol.15, No 3, 2004; Richard J. Herring and Susan M. Wachter, *Real estate booms and banking busts: an international perspective*, The Wharton School Research Paper, 1999 and Liow Kim, *Time-varying macroeconomic risk and commercial real estate: an asset pricing perspective*, Journal of Real Estate Portfolio Management, 2004.

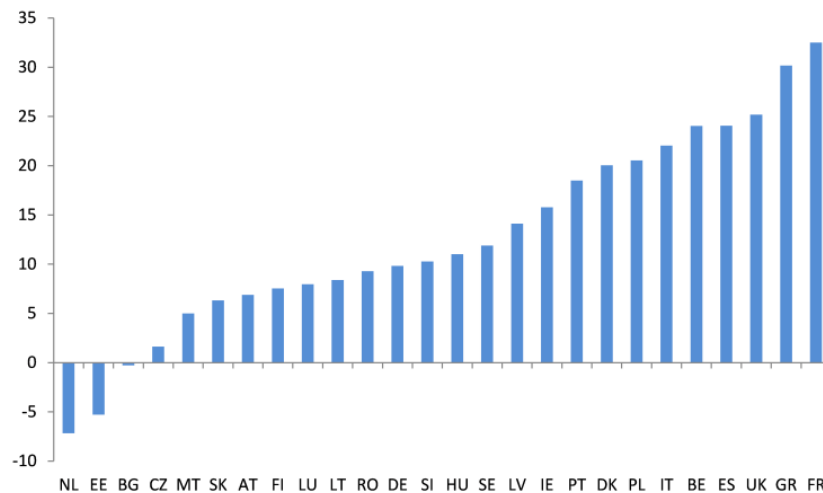
franc) was, and sometimes still is, prominent.⁹ In conclusion, RRE markets are still essentially very much domestic in nature, which has also implications for macroprudential policy.

Figure 1: Tenure choice - Distribution of population by tenure status (in %), 2013



Source: Eurostat, NL 2012, Statistics Netherlands; published in ESRB, Report on residential real estate and financial stability in the EU, December 2015.

Figure 2: Contribution of housing taxes to the marginal cost of owner-occupied housing (% of the cost before housing taxes), 2014



Source: European Commission; published in ESRB, Report on residential real estate and financial stability in the EU, December 2015.

⁹ In its first Recommendation ESRB/2011/1 on lending in foreign currencies, the ESRB tried to address the risks related to this type of lending.

There is some empirical evidence that structural features matter for financial stability. Initial results of ESRB work highlight the role of structural features, such as high loan-to-value (LTV) ratios, a favourable tax treatment of housing and high levels of bank leverage, in increasing the vulnerability of countries to real estate-related distress events. This work also suggests that high shares of new lending granted at a variable rate, by contrast, are associated with a lower probability of upcoming distress, though this result is likely to depend crucially on the evolution of the interest rate environment.

3.2 Commercial real estate markets

CRE is quite different from RRE (see Table 1). First, there is no commonly shared definition of CRE for financial stability purposes within the EU. The ESRB has tried to address this with its recommendation on closing real estate data gaps (see Section 5). Second, data on CRE are in general scarce, incomplete or inconsistent – especially compared with RRE data – making it difficult to describe accurately and compare risks in and across national markets. Third, in contrast to RRE markets, in CRE markets a significant proportion of financing is provided by entities that are not banks (such as insurance companies and asset managers) and in the form of equity. This is of significance because up until now, macroprudential toolkits have consisted mainly of instruments targeting banks, such as sectoral capital requirements. Finally, cross-border financing (also from outside the EU) is important for some CRE markets within the EU and should be taken into consideration when designing macroprudential policies for the sector.

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

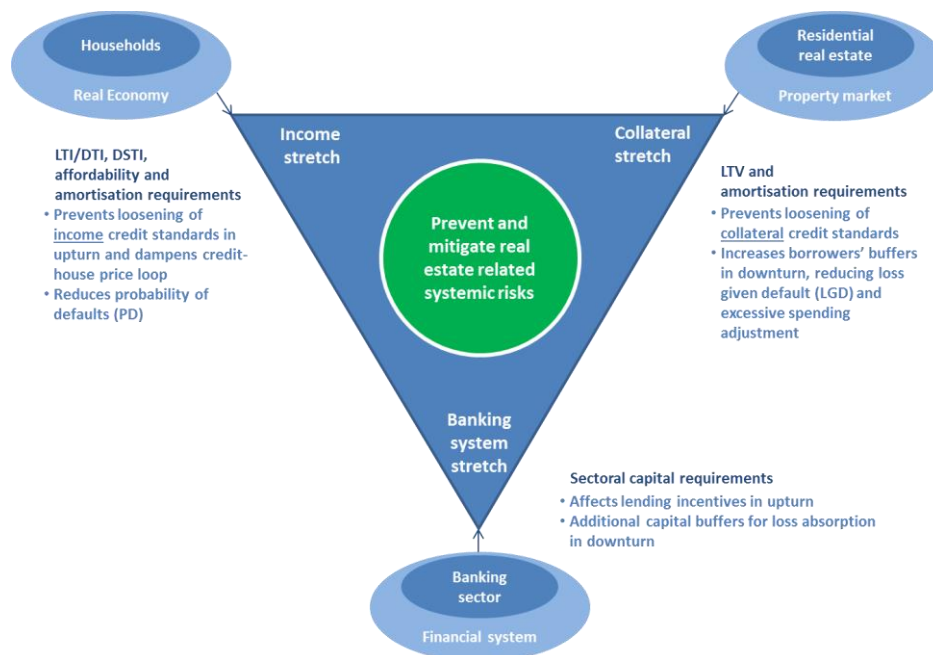
Source: ESRB, *A review of macroprudential policy in the EU in 2015, May 2016, p. 20*

4. Use of real estate instruments

The new EU prudential rules for credit institutions entered into force on 1 January 2014.¹⁰ These new rules gave the macroprudential authorities in the EU a new set of policy instruments to address financial stability risks more effectively. In light of this, the ESRB published a detailed Handbook aimed at assisting macroprudential authorities to use the new instruments¹¹. The Handbook includes a chapter dedicated to real estate instruments. The instruments covered are not only those targeting banks (i.e. capital-based instruments) but also those targeting borrowers and which are outside the scope of the new EU prudential rules.

Real estate macroprudential instruments can be usefully grouped into those tackling three “stretches”, notably relating to borrowers’ income, the underlying collateral backing loans and banking system resilience; the first two stretches cover the so-called borrower-based instruments and the third one bank-based instruments. In recent years, instruments related to income stretch (caps on loan-to-income or LTI, caps on debt-to-income or DTI, caps on debt service-to-income or DSTI, affordability requirements, amortisation requirements), collateral stretch (LTV caps, amortisation requirements), and banking system stretch (sectoral capital requirements) have been introduced in several EU countries.

Figure 3: Instruments by stretches related to real estate lending



¹⁰ 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) (“CRD 4”); 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”).

¹¹ ESRB, The ESRB Handbook on operationalising macroprudential policy in the banking sector, March 2014.



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

The Handbook was followed-up by the twin reports on residential and commercial real estate markets and financial stability in the EU discussed above, which also contain further guidance on the design and use of real estate instruments.

A careful design of instruments is crucial for enhancing their effectiveness and avoiding any unintended consequences. The two reports discuss specific design features of each instrument such as the definition of variables and exemptions and suggest ways to deal with potential pitfalls in the use of instruments. They also discuss the trade-offs between fixing and adjusting instruments over the financial cycle. While fixing instruments may create a more predictable environment and minimise the risk of inaction bias and implementation lags, it carries the risk that the settings of instruments do not keep pace with new market developments and may create a “comfort zone” for policymakers. Countries’ implementation of measures differs along most dimensions, and the only relatively recent introduction of measures in most cases means that the evidence for determining “best practice” is still relatively scarce, in particular for instruments targeting the CRE sector.

A combination of instruments seems likely to be the most suitable response to vulnerabilities stemming from excessive credit growth and leverage related to RRE lending. In this way, different channels through which systemic risks may build up or unfold can be addressed and any circumvention of the rules is made more difficult. Capital-based instruments may be the most effective in directly enhancing resilience, whereas restrictions related to income and collateral stretches are comparatively more effective in curbing the financial cycle. Income stretch instruments are likely to be the most constraining in the build-up phase, whereas a collateral buffer also contributes to system resilience in a downturn. In practice, a combination of instruments, even if not applied simultaneously, is the rule rather than the exception, in particular for collateral and income stretch instruments.

When deciding on the appropriate level of an instrument, a range of different potential calibration methods can be used, potentially in combination. These might range from practical exercises benchmarking experience against other countries to more academic approaches. Expert judgement is likely to be needed given the complexity involved in fully grasping the systemic risks and the uncertainty surrounding the likely impact of the instruments.

Finally, policies influencing structural characteristics of RRE markets themselves might positively contribute to financial stability. The apparent role of structural characteristics of markets in explaining different crisis experiences across countries also points to a broader policy conclusion: that rather than tackling emerging cyclical imbalances in markets through macroprudential intervention, policies influencing structural characteristics of RRE markets might in certain cases positively contribute to financial stability.

5. Addressing real estate data gaps

From the discussion above it should be clear that analysing and addressing vulnerabilities in the real estate sector is a key responsibility of macroprudential authorities which therefore need to have the necessary macroprudential 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.

Such indicators need to encompass several dimensions. Physical market indicators related to the evolution of prices and yields, vacancy rates, construction starts etc. provide useful insights on real estate market developments. Indicators related to lending or investing standards provide information on the riskiness of real estate-related loans and investments, on the sustainability of borrowers' debt and on the real estate positions of investors.

The lack of commonly agreed working definitions across EU countries on the RRE and CRE sectors, along with operational constraints on data availability for a number of relevant indicators, hampers the reliability of financial stability analyses, making it difficult to accurately assess and compare risks across national markets. The earlier mentioned work by the ESRB revealed the existence of severe gaps in the availability and comparability of real estate indicators across EU countries.

On the RRE side, the ESRB highlighted the lack of availability of comparable, high-quality data for RRE credit standards indicators, such as the LTV ratio, the LTI ratio, the loan service-to-income (LSTI) ratio, the DTI ratio and the 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. On the one hand, the assessment of the ability of these indicators to provide early warnings against the build-up of systemic risks has been hampered by the absence of reliable and harmonised time series. On the other hand, data gaps impede the cross-country comparison of the prudential policy stance targeting RRE vulnerabilities.

On the CRE side, similar ESRB work 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, the ESRB issued Recommendation 2016/14 which 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. The ESRB further expressed the view that it would be beneficial for financial stability and macroprudential policymaking to regularly collect and distribute at EU level comparable country data on these indicators.

6. Warnings on medium-term vulnerabilities in the RRE sector

The most recent work of the ESRB related to the real estate sector concerns the warnings addressed to eight EU countries on medium-term vulnerabilities in the RRE sector. These eight warnings were accompanied by a comprehensive and detailed analytical report¹². Building on its earlier work, the ESRB investigated whether there were vulnerabilities related to the RRE sector in EU countries that may be a direct or indirect source of systemic risk to financial stability, and may also have the potential for serious negative consequences for the real economy.

The ESRB vulnerability analysis was based on a comprehensive, two-stage approach. First, an indicator-based cross-country, EU-wide framework developed jointly by the ESRB and ECB was applied to identify a set of 11 focus countries for a more in-depth analysis. Second, a country-specific analysis of the focus countries was performed, taking account of factors relating to structural and institutional features. This in-depth analysis resulted in the eight countries that subsequently received a warning: Austria, Belgium, Denmark, Finland, Luxembourg, the Netherlands, Sweden and the United Kingdom.

The vulnerabilities were identified and separated according to the earlier-mentioned three stretches – collateral, household (i.e. income) and banking – where collateral stretch captures the price levels and dynamics in RRE markets, household stretch captures the implications of household borrowers' debt for their consumption and other behaviour and banking stretch captures the potential impact of RRE developments on lenders.

The policy assessment of each of the three stretches was based on two qualitative criteria:

- Appropriateness, i.e. whether policies are conceptually suitable given the nature and the timing of the risks.
- Sufficiency, i.e. whether policies are expected to, or can be shown to, significantly mitigate or reduce the build-up of risks over an appropriate time-horizon and with limited impact on the general economy.

The country assessment was made on a stretch-by-stretch basis and then aggregated in an overall assessment. For example, in the case of Belgium the overall assessment was that the policy measures that had been implemented were appropriate but that given the nature of the RRE vulnerabilities they might not be sufficient to fully address them. This assessment was in particular the case for the collateral stretch (due to the significant increase of RRE prices in Belgium over the past decennia) and household stretch (due to the fast increase in overall household indebtedness, especially among some groups of households).

The countries that were addressed by the warnings had the opportunity to respond and their responses, in case they agreed with this, were also made available on the ESRB website.

¹² ESRB, Vulnerabilities in the EU residential real estate sector, November 2016.