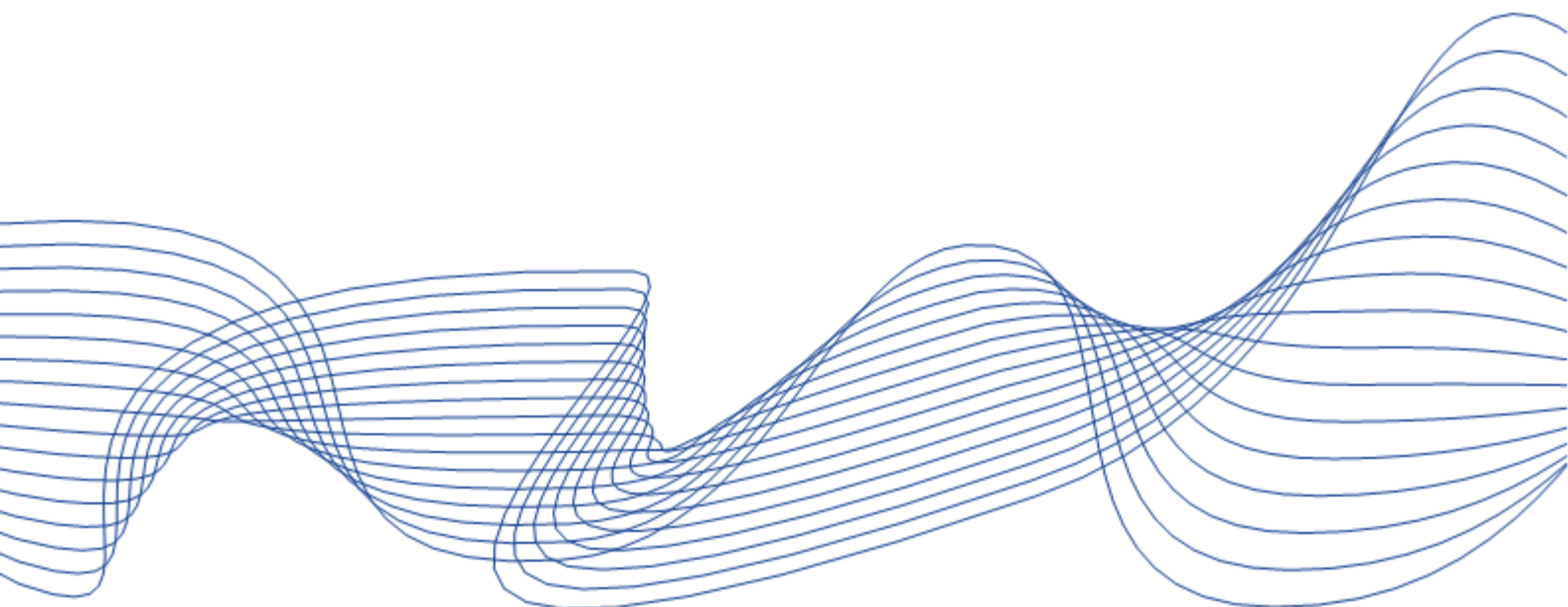


Report on commercial real estate and financial stability in the EU

December 2015



ESRB

European Systemic Risk Board

European System of Financial Supervision

Executive summary

In past financial crises, unsustainable developments in commercial real estate (CRE) markets in some European Union (EU) countries resulted in severe losses for the financial system, possibly also with consequences for the real economy. CRE markets tend to be significantly more cyclical than residential real estate (RRE) markets. This reflects close linkages with general economic conditions, supply conditions that are more inelastic than is the case for RRE, the international dimension of some CRE markets and the opaqueness of CRE markets.

Understanding how risks from CRE markets can influence the financial system and the real economy is therefore crucial for financial stability. CRE markets affect financial stability through various channels. A direct channel is through lenders providing CRE loans. Since commercial premises are operated for purely economic purposes, and given that it tends to be on a non-recourse basis, CRE lending typically exhibits higher default rates than RRE lending. In addition, there is a collateral channel, whereby CRE prices and lending increase in tandem in cyclical upswings and fall in downswings, which may result in higher loan-to-value ratios (LTV) and ultimately higher losses given default (LGD). Indirect links may also pose threats to financial stability. In most EU countries, CRE and the construction sector account for a significant proportion of gross domestic product (GDP). Negative developments in these two sectors can have a material impact on economic growth and on financial resilience in general. A third channel through which CRE can affect financial stability is the scale of investment made by institutional investors.

Previous CRE-related crises have exhibited a number of common characteristics across a range of EU countries. These include rapid growth in lending, easing of lending standards, rapid CRE price increases ahead of the crisis and, during the downturn, high numbers of non-performing loans and large credit losses.

When assessing risks related to CRE and the most appropriate strategies to mitigate them, some important issues need to be considered:

- **First, there is no clear-cut or commonly shared definition of CRE within the EU.** Consequently, for the purposes of this report, commercial real estate is defined as buildings, including occupied land, which are held for the express purpose of generating an income. While the expert group broadly agrees that CRE should include multi-family residential dwellings, there is some debate as to whether buy-to-let housing and property under development should also be included.

Reaching a common understanding across EU countries of what comprises CRE is important, as analytical and data work will depend heavily on a harmonised definition. It should be noted that, while the expert group has opted to exclude buy-to-let housing and property under development from the scope of its analysis of CRE, both sectors entail risks that are relevant from a financial stability perspective and may therefore be worthy of further attention.



- **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.**

In the medium term, granular and consistent data should be made available to central banks and supervisors to allow a more precise assessment of the financial system’s exposure to CRE and associated risks; similarly, statistical agencies should build a strong data framework to capture broader developments in real estate markets. Priority areas for data are (i) capturing CRE markets as a whole rather than just samples of the market (as covered by private sector data providers), (ii) assessing the dynamics of supply and demand, (iii) tracking changes in the volume and nature of lending and investment, including terms and conditions, and (iv) capturing developments in financing by foreign sources, including from outside the EU.

Given the strong cross-border dimension of CRE for some EU countries and the need for a common definition, it seems necessary that further initiatives in this area be coordinated, at least at the EU level (for example, by the European Central Bank (ECB) and the European supervisory agencies as regards financial system exposures, and by Eurostat as regards real estate market developments). It will also be important to utilise work already begun in various European or international fora, as well as on projects such as AnaCredit (the ECB’s analytical credit dataset) that could provide valuable information on the financial system’s exposure to CRE.

Progress on filling in data gaps will take time. In the short term, given the risks to financial stability that CRE can pose, the expert group suggests that granular data on the stock and flow of investment and lending should be the main focus. An analysis of new regulatory templates introduced under the Basel III regime for banks, the Solvency II Directive for insurance companies and the Alternative Investment Fund Managers Directive (AIFMD) for alternative investment funds (AIFs) is likely to meet this need partially.

- **Third, in contrast to RRE markets, in CRE markets a significant proportion of financing is provided by entities that are not banks (“non-banks”).** Historically, across Europe, the relative importance of debt and equity financing of CRE has been similar on average, but since the financial crisis the proportion of equity financing has risen. Moreover, within debt financing, a shift is apparent from bank lending towards non-bank financing (e.g. by insurance companies and asset managers).

This is of significance because up until now, macroprudential toolkits have consisted mainly of instruments targeting banks, such as sectoral capital requirements. Work is already being undertaken by the ESRB’s Instruments Working Group (IWG) on instruments which can be applied beyond the banking sector. Some of these instruments may prove to be helpful in mitigating risks stemming from CRE. For example, activity-based macroprudential tools for real estate can target excessive growth and leverage by restricting the size of loans relative to the value of the property (the loan-to-value ratio), or interest or debt servicing relative to the borrowers’ income (the interest coverage ratio (ICR) or debt service coverage ratio (DSCR)). These instruments can act as a brake on imprudent lending and lower both the probability of default and the LGD of loans. Such tools could be combined with increased risk weights and, outside the banking sector, with measures from the AIFMD to limit the leverage of



AIFs. In addition, the effectiveness of investment in CRE and, more generally, the stability of CRE markets, could be enhanced by the use in those markets of long-term valuation approaches. This is also an area that the expert group suggests merits additional work.

A further review of instruments available to target CRE-related risks may still be necessary at some point in the future, as certain areas may not be covered by the work of the ESRB mentioned above (e.g. maturity mismatch risk associated with unit-linked investments in CRE or concentration risk in the insurance sector).

- **Finally, cross-border financing is important for some CRE markets within the EU, and should be taken into consideration when designing macroprudential policies for the sector.** The work of the IWG's expert group on cross-border effects of macroprudential policy and reciprocity is of considerable assistance in this respect. In accordance with the preliminary conclusions of that group, the Expert Group on Real Estate recommends that reciprocity should be strongly encouraged within the EU for measures targeting the CRE markets. However, additional work may be warranted in relation to reciprocity, both (i) regarding non-EU countries (e.g. the United States), and (ii) as it may be applied to non-bank sectors.



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List of abbreviations

AIF	Alternative investment fund
AIFM	Alternative investment fund manager
ATC	Advisory Technical Committee
CCB	Countercyclical capital buffer
CDS	Credit default swap
CET1	Common Equity Tier 1
CLD	Construction and land development
CLN	Credit-linked note
CMBS	Commercial mortgage-backed securities
COREP	Common Reporting
CRD IV	Fourth Capital Requirements Directive
CRE	Commercial real estate
CRR	Capital Requirements Regulation
DSCR	Debt service coverage ratio
EEA	European Economic Area
EBA	European Banking Authority
ECB	European Central Bank
EIOPA	European Insurance and Occupational Pensions Authority
ESA	European Supervisory Authority
EU	European Union
FINREP	Financial Reporting
FSA	Financial Services Authority
ICR	Interest coverage ratio
IRB	Internal ratings-based
IWG	Instruments Working Group
IPD	Investment Property Databank
JLL	Jones Lang LaSalle
LGD	Losses given default
LTG	Long-term guarantee
LTV	Loan-to-value ratio
MLV	Mortgage lending value
MSCI	Morgan Stanley Capital International
NAMA	National Asset Management Agency
NFC	Non-financial corporation
NPE	Non-performing exposure
NPL	Non-performing loan
REIT	Real estate investment trust
RMBS	Residential mortgage-backed security
RRE	Residential real estate
RTS	Regulatory technical standard
RW	Risk weight
SA	Standardised approach
SCR	Solvency capital requirement



SRB	Systemic risk buffer
SREP	Supervisory Review and Evaluation Process
SSM	Single Supervisory Mechanism
UCITS	Undertakings for collective investment in transferable securities
VA	Volatility adjustment

Countries

BE	Belgium	HR	Croatia	PL	Poland
BG	Bulgaria	IT	Italy	PT	Portugal
CZ	Czech Republic	CY	Cyprus	RO	Romania
DK	Denmark	LV	Latvia	SI	Slovenia
DE	Germany	LT	Lithuania	SK	Slovakia
EE	Estonia	LU	Luxembourg	FI	Finland
IE	Ireland	HU	Hungary	SE	Sweden
GR	Greece	MT	Malta	UK	United Kingdom
ES	Spain	NL	Netherlands	NO	Norway
FR	France	AT	Austria	US	United States



Introduction

Past financial crises have shown that unsustainable developments in commercial real estate (CRE) markets in certain EU countries can result in severe losses for the financial system, possibly also with consequences for the real economy. The assessment of risks stemming from CRE markets involves significant challenges.

- First, there is no clear-cut or commonly shared definition of CRE within the EU. For instance, boundaries with residential real estate (RRE) are somewhat blurred, particularly as regards the “buy-to-let” market.
- Second, data on CRE are in general scarce, incomplete or inconsistent (especially compared with data on RRE), which makes it difficult to accurately describe and compare the risks in and across national markets.
- Third, in contrast to RRE markets, non-bank and cross-border market participants account for a significant proportion of financing in CRE markets. When designing macroprudential policies, careful consideration should also be given to non-EU market participants in particular.

This report, which provides a high-level assessment of these issues, is organised into four chapters. The first chapter proposes a definition of CRE and clarifies what should, and should not, be included. The second chapter identifies data gaps and discusses possible ways to fill them. It then describes the structural features of CRE markets across the EU, establishes who the main market participants are, and assesses the risks to the financial system. The third chapter develops an analytical framework for CRE markets. It shows why they tend to be more cyclical than RRE markets, and identifies the channels through which they may lead to financial instability. The chapter also provides a list of indicators required for assessing CRE markets, and concludes with case studies of past CRE crises that illustrate the relevant mechanisms. The fourth chapter sets out the macroprudential instruments authorities might use to tackle risks arising from CRE markets; it emphasises that sector-wide and cross-border issues are particularly relevant when dealing with risks stemming from CRE markets. It concludes with a review of measures that have already been taken, both within and outside the EU. Since such measures are typically very recent, it is rather difficult at this juncture to draw any conclusions about their effectiveness.



Section 1

Defining CRE

A common definition of CRE has not yet been agreed internationally. Attempts have been made with varying levels of detail such as “income producing real estate” or “a building other than a dwelling and the land on which it stands” (Shimizu, 2014¹). Within the international statistical community, work is underway under the leadership of Eurostat.² For the purposes of this report, a questionnaire (see Annex 2) was designed which has made it possible to collect definitions used by different Member States when assessing CRE markets.

Some elements appear to be controversial. The expert group suggests that, while residential premises in the form of multi-household dwellings should be included in CRE (along with, for instance, offices, retail and industrial premises), buy-to-let housing and property under development should not be considered as CRE.

In the absence of strong agreement on a definition of CRE, there is a need for additional work in order to reach a common understanding of what the sector should comprise. Similarly, since buy-to-let housing and property under development entail specific risks that are relevant from a financial stability point of view (e.g. high loan-to-value ratios, a strong connection with fiscal policy, and a link to household indebtedness in the case of the former and valuation concerns in the case of the latter), they could be worthy of further attention.

Section 1.1 analyses the definitions of CRE that members of the expert group provided as part of the data collection exercise; Section 1.2 recalls the basic principles considered to be relevant in this regard from an ESRB perspective; and Section 1.3 suggests a working definition based on national accounts.

1.1 Empirical definitions

For the purpose of the expert group’s data collection exercise on CRE (see Annex 2), the following definition was provided: Commercial real estate is usually defined as income-producing real estate. Real estate used for residential purposes is labelled as commercial real estate when it is owned or developed for commercial purposes. The definition of commercial real estate should reflect the risk profile of the asset class considered, rather than the ultimate purpose of the real estate. Therefore, the residential sector of the commercial real estate market should be distinguished from residential real estate owned and occupied by households. This is because commercial real estate is more often purchased as a speculative investment by professional investors than residential real estate, which often serves as accommodation for its owners.

1 See Shimizu, C., “What is commercial property?: Concepts and classifications”, presentation to the Workshop on the Handbook on Commercial Property Price Indicators held in Frankfurt between 29 and 30 September 2014.

2 A working group will produce a handbook aimed at clarifying the boundaries of this topic and advising compilers of the data on best practices for production.



Members of the expert group were asked to provide their own definition of CRE in the data collection questionnaire. Respondents generally agreed with the definition above (see Annex 1 for an overview of the responses).

Nonetheless, in the absence of an agreed definition of CRE at the EU level, the classification of residential premises appears to vary from country to country. Based on available data, some countries have not treated such premises as CRE for the purposes of the questionnaire.

Responses received included those set out below by way of example.

- In the case of Ireland: “The commercial property market is generally viewed as being made up of three components: office, retail and industrial. Holdings of residential property by large-scale professional investors have not traditionally played a significant role in the Irish property market, although it is now becoming a more prominent feature”.
- In the case of Lithuania: “CRE is most often treated as what is left after accounting for housing and land”.
- As regards Poland: “the CRE sector consists of offices, retail premises and warehouses. Residential property for rent is owned by private people and is not considered as a significant segment, yet”.
- For Spain, the data collection was restricted to “credit to non-financial private sector agents used to buy property under three categories: i) office buildings, ii) commercial use, and iii) other purposes (offices and commercial premises)”.

The responses for Belgium and Sweden were more precise: these excluded houses or apartments occupied by single households from the definition of CRE, but included multi-household residential buildings. Italy also pointed to the difficulties attached to categorising single dwellings, as the owners have the opportunity either to rent them out or to occupy them.

Finally, even where there is general agreement with the definition of CRE provided in the questionnaire, the responses for many countries (such as Austria, Denmark, Germany, Greece, and the United Kingdom) underlined the difficulty of providing data consistent with this definition; some data may be unavailable for some market segments, while other data may only cover part of the market.

1.2 Basic principles

To establish a suitable definition of CRE, it is necessary to consider the analytical purpose for which the CRE concept is to be used. The ESRB’s interest in this field is to investigate the systemic risk arising from CRE held either as an asset (directly or indirectly) or as collateral for financing (which may or may not be for the purchase of the real estate in question). As regards the latter, the ESRB’s interest is in a definition that covers financing and the risks incurred by providers of financing, whether in the form of debt or equity.



Commercial real estate can be defined as land, and the building(s) upon it, which generates profit or income from capital gains or rents. (Property does not include civil engineering structures). However, some questions may arise for a particular class of property – commercial or residential – regarding its intended purpose. This is the case when distinguishing the residential segment of commercial property from residential property which is owned and occupied by households. The residential segment of commercial property might be restricted only to multi-household buildings, since it often appears more difficult to distinguish between a residential and a commercial purpose in the case of a single household building.

Buy-to-let dwellings – residential houses purchased with the purpose of gaining a profit stream by renting them out and potentially involving a capital gain – are a controversial category. While price and yield developments in this segment are likely to be closely aligned with the owner-occupied residential real estate sector, the expectation of cash flows from the asset accords with the notion of commercial real estate as defined above.

From the ESRB's perspective, it is necessary to include all borrowers in the definition of CRE, be they professional investors – large or small – or individual investors. The risk of default of large professional entities, such as institutional investors or companies participating in the ownership or development of, or trading in income-producing real estate, is an important source of systemic risk.³ Nonetheless, a large number of defaults by small or individual investors within the same time period could lead to systemic risks similar to those arising from defaults by large investors. This might occur predominantly in countries with a large buy-to-let market (e.g. Ireland and the United Kingdom). Additional research is needed to determine whether the market for buy-to-let property can be distinguished from the general market for residential property, and subsequently to decide whether or not it should be included in the definition of CRE.

It is also necessary to consider whether, for the ESRB's purposes, it is preferable to measure property values or property prices. A change in the value of a property between any two points in time can stem from several factors, e.g. changes in its quality (as a result of depreciation or renovation) or price. When undertaking price measurement, statistical compilers usually aim to capture the price at a constant level of quality. Given that commercial property is often used as collateral, it is necessary to consider the proceeds that could be realised if this collateral were to be liquidated, i.e. its market value. It is therefore suggested that this be used as the appropriate measure. The market value itself is comprised of three factors: (i) the initial value of the property and land in question, (ii) the said value adjusted to reflect depreciation and/or renovation, and (iii) any income stream that the property generates, e.g. rent.

1.3 Working definition

From the basic principles mentioned above it is possible to begin identifying a working definition of CRE for the purposes of this report. As pointed out in the replies from certain countries to the questionnaire, in reality the data supplied for this report are likely at times to be derived from a somewhat different definition.

³ See "Commercial Property Markets – Financial stability risks, recent developments and EU banks' exposures", ECB, Frankfurt am Main, December 2008 (available at <https://www.ecb.europa.eu/pub/pubbydate/2008/html/index.en.html>).



Commercial property includes buildings (and the land they stand on) developed for the express purpose of providing an income and/or a capital gain. It encompasses a wide range of premises (offices, retail properties, manufacturing facilities, etc.) and may include residential property (e.g. in the form of multi-household housing). The scope must also cover financing at risk of default. To assess this, a value measurement is required which reflects the ability of interest on a debt instrument to be serviced or the capital to be repaid. The following considers this in more detail.

Using a national accounts-based framework, Jellema (2014)⁴ suggests how to identify commercial property.

Table 1
Commercial property from a national accounts perspective

Included in commercial property	Not included in commercial property
Property owned by commercial real estate entities, i.e. the statistical units of real estate activity , or purchased or sold as part of real estate activity (generating income or capital gains)	Property owned by other entities in the economy, i.e. all statistical units belonging to activities other than real estate , used as part of their capital stock, necessary to produce goods and services
Residential property held for commercial reasons	Owner-occupied housing
Properties generating rents or capital gains (income-generating properties)	New property under development (belongs to the construction industry) – although it can pose financial risks, this should not constitute commercial property as there is no income generation

Listed below are the categories shown in Table 1 as not included in commercial property, and the rationale for their exclusion.

Property owned by all entities involved in conducting activities other than real estate, used as part of their capital stock, necessary to produce goods and services: This might, for instance, include the headquarters of a financial company or a production plant. Such property is not held to generate rental income or capital gains for the owner. While no debt may be outstanding on the building itself, it can be, and often is, used as collateral for debt. As such, changes in the price of buildings can influence credit constraints and investment decisions of companies and other participants in the wider economy.

Property owned by non-market producers of real estate services: In some Member States, local municipalities own and develop property on a commercial basis (in contrast with their ownership and development of, for example, social housing), such as shopping centres or multi-household residential buildings).

New property under development: This clearly fails to meet the criterion that commercial property must be profit-generating. However, the course of such works can pose significant risks to lenders (and the financial system), if financing has been extended against the development of the property.

Of the above three categories, new property under development is arguably the most problematic. It is clear that there are financial stability risks if debt has been extended to either develop or purchase the land in question. From a purely definitional point of view, both land acquired

⁴ See Jellema, T., "Some thoughts on the delineation of commercial property" (presentation to the Workshop on the Handbook on Commercial Property Price Indicators held in Frankfurt between 29 and 30 September 2014).



for development by property developers and buildings they have under construction should be considered for inclusion in the definition of CRE, as they are ultimately intended to be sold for commercial reasons. However, taking a purely statistical approach, it is difficult to see how to distinguish between the purchase of land for actual development and the purchase of land for a more speculative purpose. One methodology might consist of ascertaining whether or not a building permit has been issued by the relevant national authority. But research in the residential market has shown that there can be a significant difference between the number of building permits and building completions. It is therefore recommended that this aspect should be given priority for future research. It is clear that the ESRB is interested in information on this phenomenon but whether that information is included in the headline CRE data, or as a separate dataset, will need further reflection.

As noted above, another controversial issue relates to buy-to-let housing. At present there is no clear statistical guidance for data compilers. It is hoped that this will be dealt with by work being completed under the auspices of the International Agency Group (led by Eurostat), for which a report is still due to be issued. There is also no guidance from the Mortgage Credit Directive; each Member State may choose to include (e.g. France) or exclude (e.g. the United Kingdom) buy-to-let housing when transposing the Directive into national law. In theory, buy-to-let housing meets the criterion of an income-producing asset. However, given current data collection processes, it appears pragmatic to exclude it from the definition of CRE, even if some “borderline” cases need to be acknowledged. A possible approach for the future might be to include it in the definition of CRE if the properties held by a particular borrower are above a certain combined value or in excess of a specified number of separate addresses, or where the majority of the borrower’s income is derived from the leasing or sale of properties.



Section 2

General features of European CRE markets

This chapter sets out the main features of European CRE markets at present, drawing on the information sources identified in Annex 2. However, it should be kept in mind that material data gaps sometimes make analysis challenging, as explained in Section 2.1. Section 2.2 outlines the general features of CRE markets and Section 2.3 assesses the exposure of the EU financial system to CRE.

2.1 CRE data gaps

CRE data are, on the whole, rather patchy and often inconsistent from one source to another (see Annex 2), especially in comparison with RRE. As a result, one should avoid making firm conclusions as regards the position of, or risks from, national markets based on any simple country comparisons in the tables and charts of this report.

The data gaps and inconsistencies span several areas: price developments and overall dynamics of physical CRE markets; exposures of financial institutions and investors (banks, insurance companies and pension funds, REITS, asset management funds, debt funds, etc.); the nature and level of risk of the financing provided by financial institutions and investors (lending standards, investment strategy, risk appetite, etc.); and the financial position of “property borrowers” (leverage, etc.).

In the medium-term, granular data allowing a better assessment of the financial system’s exposure to CRE and the associated risks should be made available to central banks and supervisors, and statistical agencies should build a strong data framework to capture developments in property markets. The data should be predominantly available on a quarterly basis and with a high degree of timeliness, given the dynamics of the market. In view of the significant cross-border dimension of CRE for some EU countries and the need to agree on a common language, it seems necessary that both initiatives be coordinated at least at the EU level (e.g. by the ECB and the responsible European supervisory agencies as regards the financial system, and by Eurostat as regards the property market). Furthermore, it will be important to utilise work already begun in different European fora, such as the development work by the ECB’s Working Group on General Economic Statistics), and in international fora, such as the Inter-Agency Working Party on House Prices, and the work being undertaken on behalf of the Inter-Agency group by Eurostat to produce a manual on commercial property prices, as well as projects such as AnaCredit, that could provide valuable information on the financial system’s exposure to CRE.

The following areas should be viewed as priorities.

- **Capturing the complete CRE market.** While data on prices, transactions, rents, etc. can be obtained from private data providers (such as Morgan Stanley Capital International (MSCI, which acquired Investment Property Databank (IPD)), Jones Lang LaSalle (JLL), Cushman & Wakefield (formerly DTZ) and CBRE), they provide only a limited picture of particular segments of national markets and may prove to lack transparency as regards their precise geographical



scope or the way indicators are computed (see Annex 2). Often these data only cover the largest cities or prime markets, which may not be representative of overall market conditions.

- **Assessing the respective dynamics of supply and demand.** This is crucial for anticipating any potential imbalances and sharp movements in CRE prices or rents. At present, only a very limited number of Member States have this information.
- **Tracking the evolution of lending conditions.** An excessive relaxation of lending standards can signal a forthcoming CRE crisis, as evidenced by some previous episodes mentioned in Chapter 3. But available data in this respect are very scarce and hardly any Member States were able to provide information on, for example, LTVs on the stock or flow of lending in the CRE questionnaire.
- **Assessing the role of foreign market participants.** National authorities require a comprehensive view of their CRE markets, which can only be obtained by taking into account the investment and lending flows created by foreign market participants (including from outside the EU). At present, generally only private data providers have this information, and only for a limited segment of the market.

However, improving data availability will take time. Some improvements are needed in the short term, given the financial stability risks that CRE can pose. Therefore, it seems that granular data on the stock and flow of investments and lending should be the main focus. The implementation of new regulatory templates provides some information on CRE exposures for banks (under the FINREP and COREP supervisory reporting requirements), for insurers (under the Solvency II Directive, as from 2016) and for alternative investment funds (under the AIFM reporting requirement). However, apart from FIN 18.00 and FIN 19.00, which explicitly provide data on banks' loans and advances to CRE, the templates do not specifically refer to CRE. Some provide a breakdown of exposures using the economic activity classifications of the Statistical Classification of Economic Activities in the European Community (NACE) (in this case, the best proxy seems to be the "L" classification – "real estate activities") or the amount of "loans secured by commercial real estate" ("loans secured by real estate" may involve RRE or CRE).

Furthermore, data must be shared between national authorities, since foreign participants account for a significant proportion of financing in some CRE markets. ESAs could be very helpful in this respect by disseminating data based on these new templates in a form similar to that which EIOPA already discloses for (re-)insurance companies and pension funds. This would nevertheless only partially address the data gaps on financial system exposures, since the templates mentioned above only cover European market participants, although investors from outside the EU (e.g. from the United States and Asia) play a prominent role in certain markets. Again, some coordination is essential to ensure the consistency of such work.

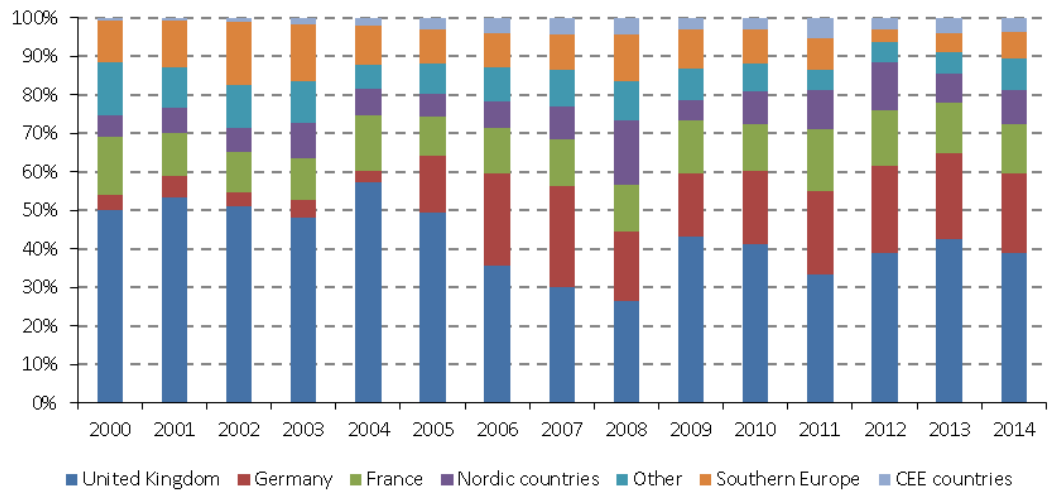
2.2 Overview of CRE markets in the EU

The available data indicate that the European CRE market is rather concentrated, with the United Kingdom, France and Germany accounting for more than two-thirds of transactions in recent years (Chart 1).



Chart 1
Geographical distribution of CRE transaction volumes

(percentage)

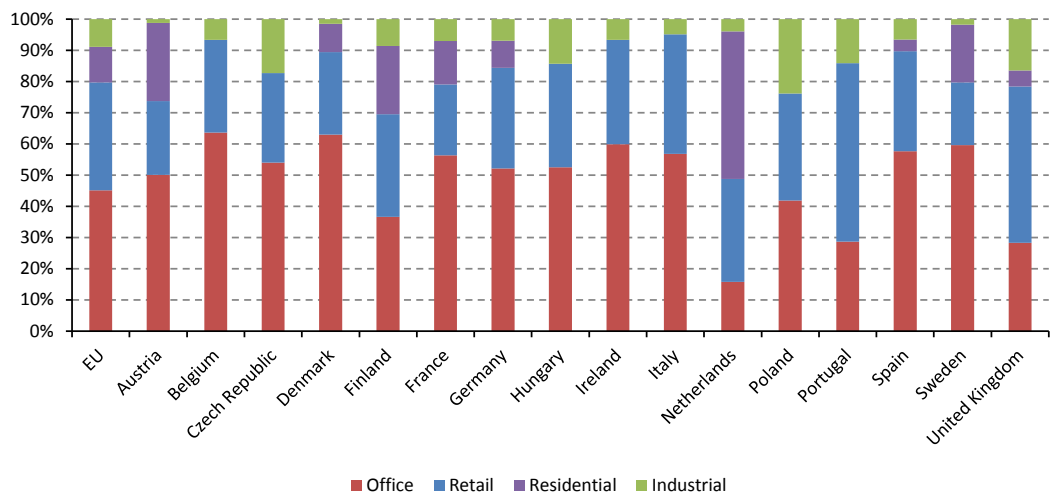


Source: Cushman & Wakefield.

There are also significant differences across markets in terms of the relative size of each of the main commercial property types (Chart 2). These include office buildings, retail premises (e.g. restaurants, shopping centres and hotels), industrial buildings (e.g. warehouses and factories) and residential property being leased or developed for commercial purposes.

Chart 2
Relative importance of the different types of commercial property in the EU and selected EU countries 2014

(% of each country's total commercial real estate capital value)



Source: Morgan Stanley Capital International (MSCI).

Note: Data on the residential sector are not available for some countries.

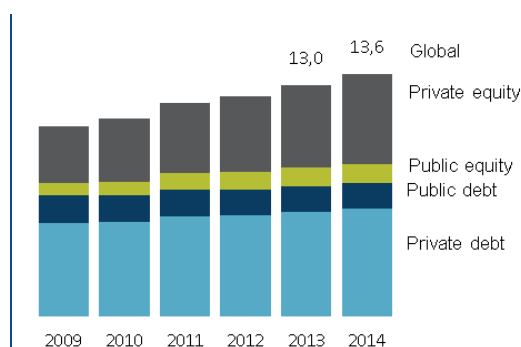
At the global level, the share of the stock of CRE that is financed by debt is 45%, with equity financing having increased rapidly since 2009 (Chart 3 and Chart 4). The picture in Europe as a



whole is similar, with debt financing accounting for 53% of total financing at end-2014 but having declined since 2009 (Chart 4).

Chart 3
Global invested stock by source of capital

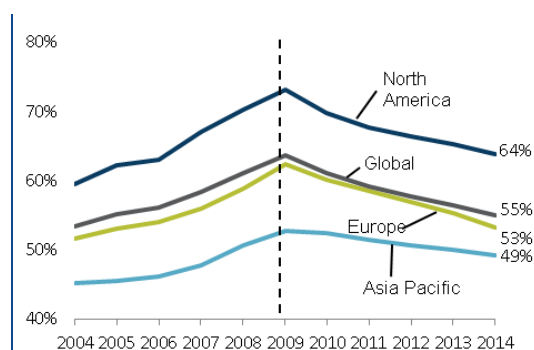
(USD trillions)



Source: Cushman & Wakefield; Money into property 2015.
Note: Private equity refers to any unlisted equity source (rather than private equity firms).

Chart 4
Debt as a percentage of stock

(percentage)

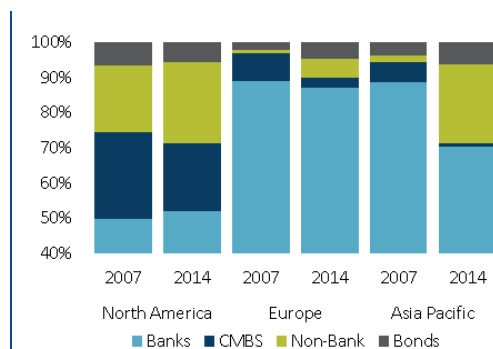


Source: Cushman & Wakefield; Money into property 2015.
Note: Private equity refers to any unlisted equity source (rather than private equity firms).

In Europe, debt mainly consists of bank lending (Chart 5) while sources of equity are more diverse (Chart 6). Having said this, equity provided by unlisted funds appears to have increased at the expense of that provided by private companies.

Chart 5
Outstanding debt by capital source and region

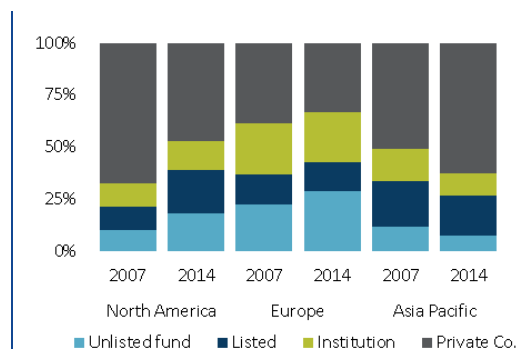
(percentage)



Source: Cushman & Wakefield; Money into property 2015.

Chart 6
Equity by source and region

(percentage)



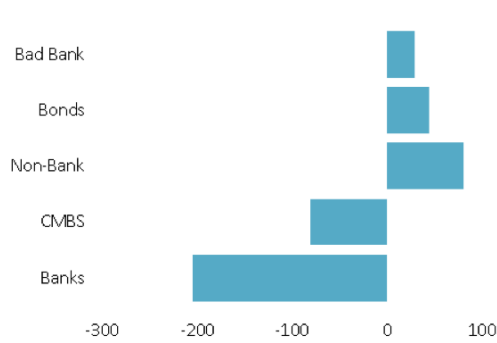
Source: Cushman & Wakefield; Money into property 2015.

In Europe, bank lending and the stock of commercial mortgage-backed securities (CMBS) debt have declined since the financial crisis, and have been partially replaced by non-bank financing and bonds issued by property companies (Chart 7). Among non-bank lenders, the insurance sector has grown significantly (Chart 8).



Chart 7
Changes in sources of European debt, 2008-2014

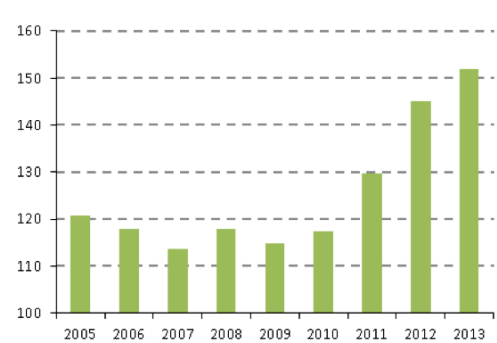
(EUR billions)



Source: Cushman & Wakefield; Money into property 2015.

Chart 8
EU insurers' outstanding loans guaranteed by mortgages

(EUR billions)



Source: EIOPA.

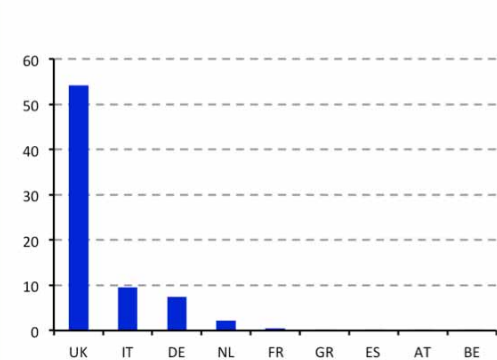
Note: Loans guaranteed by mortgages refer to Article 6 C.III.4 of Directive 91/674/EEC; they may not necessarily all be CRE loans (some could be loans against residential property).

The CMBS market is dominated by the United Kingdom (Chart 9). Apart from the “pan-European” segment, which is not shown on the chart but accounted for around EUR 9.2 billion at the end of 2014, only Italy and Germany appear to have material CMBS markets. Furthermore, Italy is the only country for which outstanding CMBS have increased (by 139% since the peak of the European market, i.e. the first quarter of 2009).

Finally, CRE markets in the EU tend to be open to foreign market participants, with significant cross-border investment (Chart 10). Over the first half of 2015, US investors were the most active, followed by, from outside the EU, investors from the Middle East or Asia (Chart 11).

Chart 9
Outstanding CMBS by EU country Q4 2014

(EUR billions)

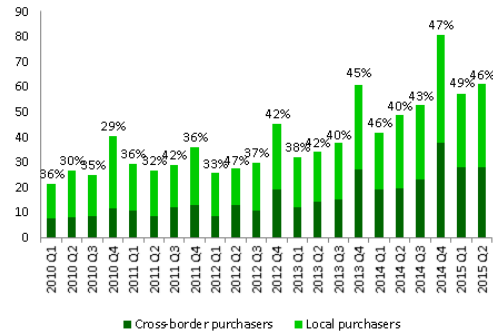


Source: Securities Industry and Financial Markets Association (SIFMA).



Chart 10
Cross-border investment, Europe

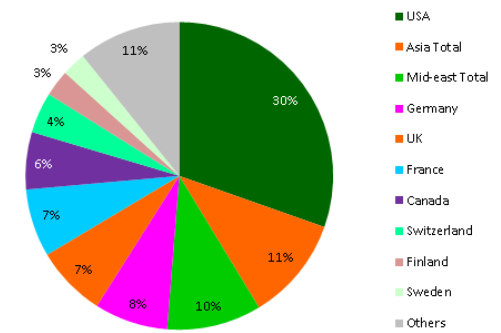
(EUR billions)



Source: CBRE.

Chart 11
Cross-border investment, first half of 2015: by buyer nationality

(percentage)



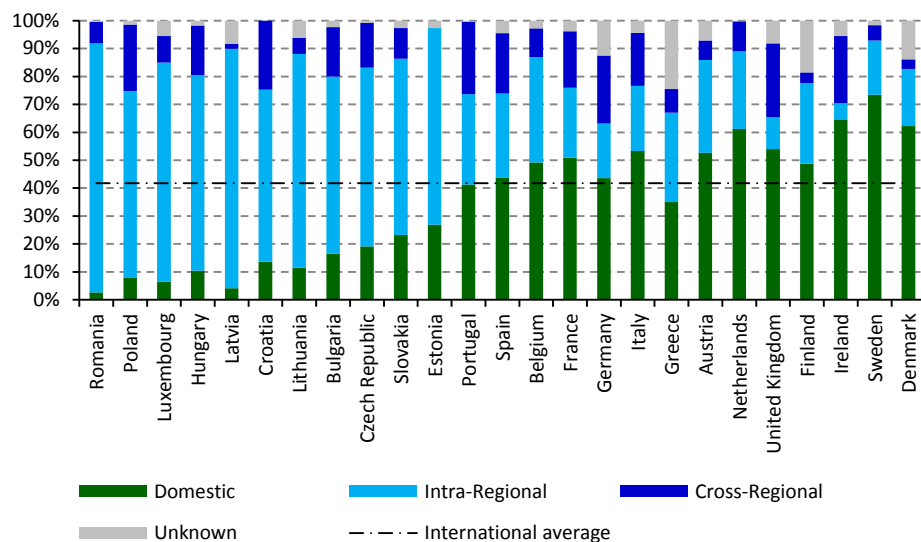
Source: CBRE.

The importance of cross-border investment varies across national CRE markets (Chart 12).

Between 2006 and the first half of 2015, foreign investors – either from within the EU (“intra-regional” (shown as light blue bars)) or from outside the EU (“cross-regional” (shown as dark blue bars)) have, on average, accounted for 42% of total investment in the EU. They seem to have played a more prominent role in Central and Eastern Europe, the Baltic countries and Luxembourg. However, in an absolute sense, 66% of foreign investment has been concentrated in the United Kingdom, Germany and France (Chart 13). The figure is much higher when considering only the “cross-regional” flows (81% of foreign investment; of which 46% relates solely to the United Kingdom).

Chart 12
Source of investment in the EU by country (%) 2006 – 2015 (first half)

(percentage)



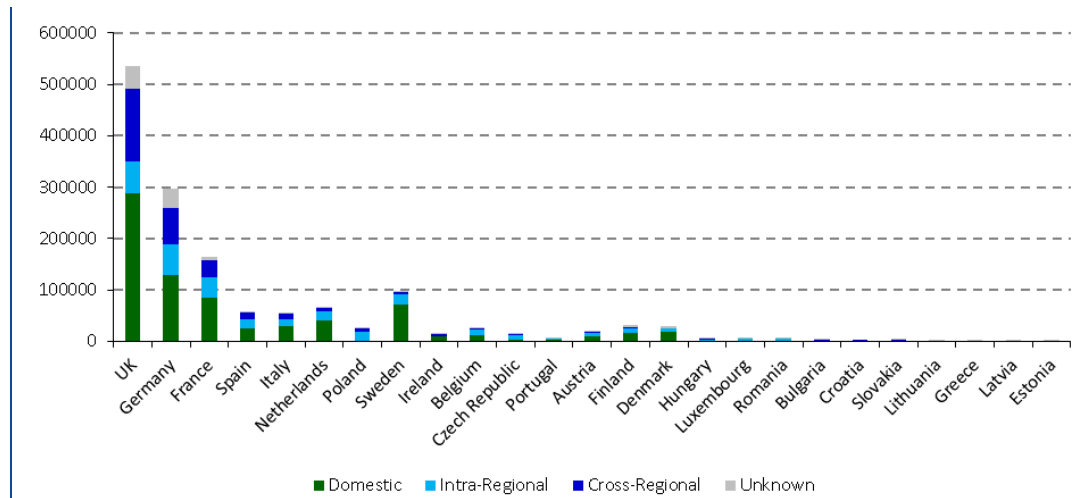
Source: CBRE.

Note: Countries are ranked according to the share of cross-regional and intra-regional investments.



Chart 13
Source of investment in the EU by country, 2006 – 2015 (first half)

(EUR millions)



Source: CBRE.

Note: Countries are ranked according to the amount of cross-regional investments.

2.3 Exposure of the EU financial system to CRE

Box 1

Assessing the exposure of the financial system

Measuring the exposures of financial systems of Member States to CRE requires aggregating individual exposures of banks, investment funds, pension funds, insurance companies and other financial entities. These participants might be directly and/or indirectly exposed to CRE. However, combining both direct and indirect exposures when assessing the total exposure of the financial system to CRE may result in double-counting. The expert group opted to take into account only direct exposures, for which information was available from multiple data sources. Exposures can involve equity debt.

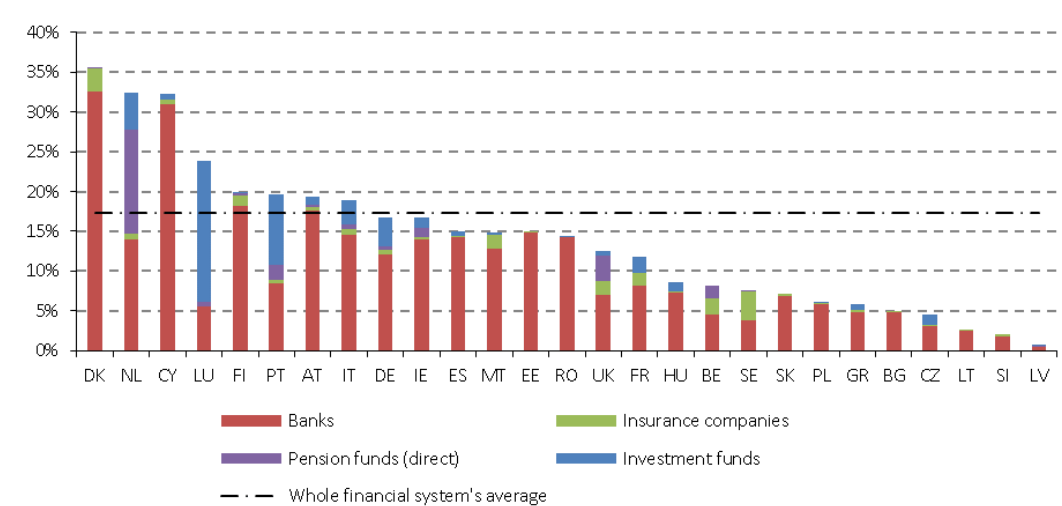
Furthermore, it must be borne in mind that the data sources supporting the following charts only make it possible to capture exposures of European participants in the market. The true picture may thus be somewhat different for countries where finance providers from outside the EU play an active role.

Finally, different data sources may provide different figures for the same item as a result of, for example, a different scope. For instance, data from the EBA 2014 EU-wide stress test only take into account significant bank portfolios, i.e. those representing a minimum share of risk-weighted assets, thus excluding some element of banks' exposures to CRE. This may result in inconsistencies between certain charts displayed in this section.



Relative to GDP, the overall direct exposure of the financial system to CRE varies greatly between countries, with Denmark, the Netherlands and Cyprus showing the highest figures (Chart 14). Banks generally account for the greatest proportion of exposure to CRE, although pension funds seem to play a prominent role in the Netherlands, while in Luxembourg and Portugal exposures are mainly concentrated in investment funds.

Chart 14
Total direct exposure of the financial system to CRE relative to GDP (2013)
(percentage)



Sources: EBA 2014 EU-wide stress test (a) (real estate-related loans and holdings of real estate funds); EIOPA 2014 stress test (b) (exposures to commercial property including holdings of real estate funds); (c) EIOPA (data on (re-)insurance and pension funds: lands and buildings in addition to loans guaranteed by mortgages); (d) ECB (data on banks' exposures for countries for which EBA 2014 EU-wide stress test data are not available (loans to non-financial corporations from the real estate sector and tangible assets) plus data on investment funds (non-financial assets)); CRE questionnaire (to complement the former sources where needed).

Notes:

The chart only shows countries for which data on banks' exposures were available. Due to data limitations, the exposures for Sweden are not complete and the figure is underestimated.

^(a)Data as of December 2013, only available on a single-country basis for AT, BE, CY, DE, DK, ES, FR, DE, GR, IE, IT, NL, PT and UK.

^(b)The data are extracted from the low-yield sample of the EIOPA 2014 insurance stress test and refer to December 2013. This sample covers individual insurance undertakings (on a solo supervision basis). Further details on the sample are available in the EIOPA Stress Test Report 2014, which can be downloaded from the EIOPA's website (<https://eiopa.europa.eu/>).

^(c)For countries covered by the EIOPA 2014 stress test, it was not possible to separate direct and indirect exposures; there may thus be an overlap between the exposures of the insurance sector and investment funds.

^(d)Loans may refer both to CRE loans and to RRE loans.



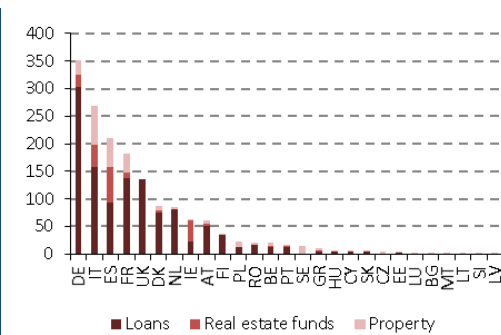
2.3.1 Exposures of banks

Banks in Germany, Italy, Spain, France and the United Kingdom are most exposed to CRE

(Chart 15). Loans generally account for the bulk of banks' exposures, but in Italy, Spain and France banks have significantly greater amounts of equity investment in CRE. In addition, banks in Italy, Spain and Ireland appear to be materially exposed through real estate funds. With the exception of the United Kingdom, the largest proportion of banks' exposures are domestic or focused on the euro area and the EU (Chart 16).

Chart 15
Banks' exposures to CRE

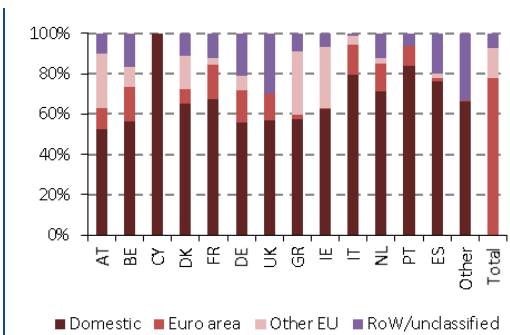
(EUR billions)



Sources: EBA 2014 EU-wide stress test; ECB and CRE questionnaire.
Note: Holdings of real estate funds are included as indirect exposures. Due to data limitations, the exposures for Sweden are not complete and the figure is underestimated.

Chart 16
Chart 2. Geographical breakdown of banks' exposures to CRE

(percentage)

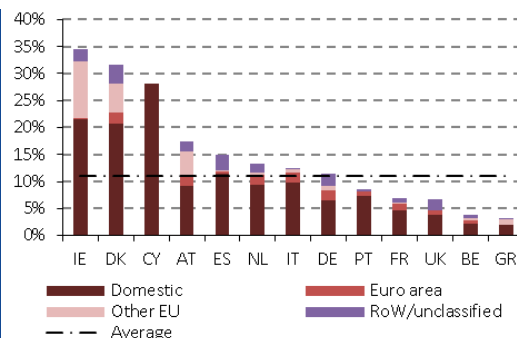


Source: EBA 2014 EU-wide stress test.

Banks' exposures to CRE, relative to GDP, appear relatively high in Ireland, Denmark and Cyprus, with figures materially higher than the EU average of 11% (Chart 17). The picture is broadly similar when considering banks' CRE exposures relative to CET1 capital (Chart 18).

Chart 17
Banks' exposures relative to GDP

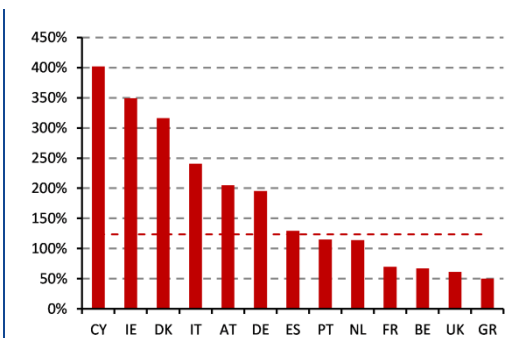
(percentage)



Source: EBA 2014 EU-wide stress test.

Chart 18
Banks' exposures relative to CET1 capital

(percentage)



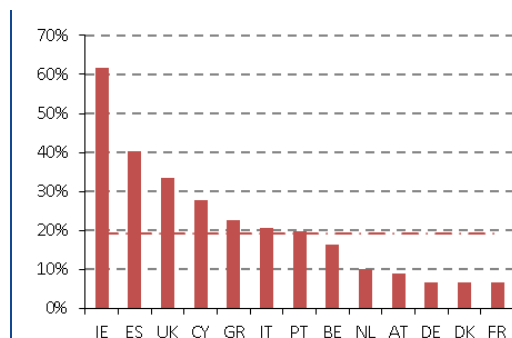
Source: EBA 2014 EU-wide stress test.



Banks in Ireland, Spain, the United Kingdom and Cyprus show the highest levels of non-performing CRE exposures (Chart 19), far above the EU average – likely reflecting that these countries have experienced significant CRE downturns. Non-performing CRE exposure (NPE) coverage ratios (i.e. provisions divided by exposures) are more homogeneous across countries; however, banks in Germany, France and Cyprus display rather low levels of coverage, at 30% or less (Chart 20).

Chart 19
Banks' non-performing exposures

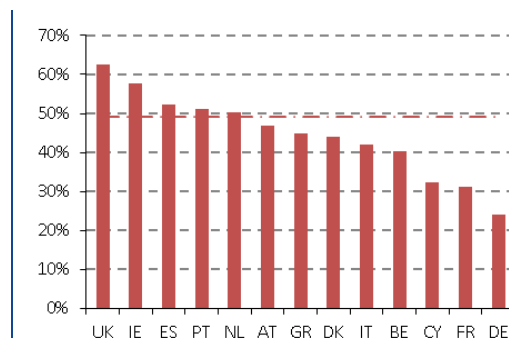
(percentage)



Source: EBA 2014 EU-wide stress test.

Chart 20
NPEs coverage ratio

(percentage)



Source: EBA 2014 EU-wide stress test.

2.3.2 Exposures of insurance companies and pension funds

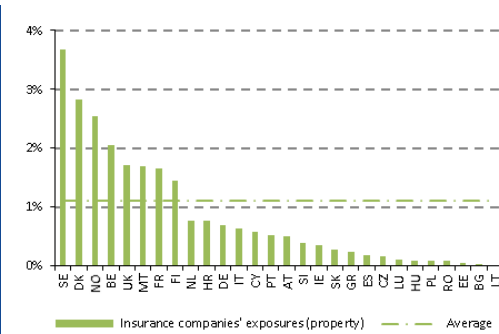
Insurance companies in Belgium, Denmark, Norway, and Sweden have commercial property exposures of at least 2% of GDP (Chart 21), while pension funds in the Netherlands have significant exposure to real estate (at 13% of GDP; Chart 22)⁵. Pension funds' exposures are somewhat less in the other countries.

⁵ The combined balance sheet of the Dutch pension funds is also large relative to GDP, at almost 200%. As a result, the total exposure to real estate is around 7% of the total balance sheet.



Chart 21
CRE held by insurance companies relative to GDP

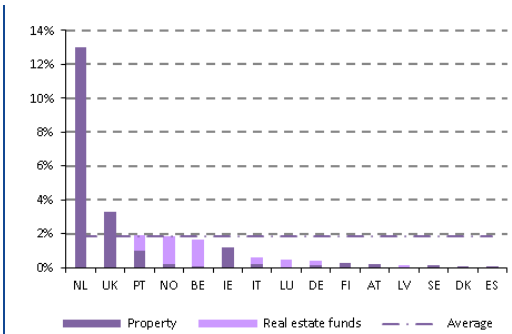
(percentage)



Sources: EIOPA 2014 Insurance stress test; EIOPA; ECB.

Chart 22
Occupational pension funds' exposures relative to GDP (2013)

(percentage)



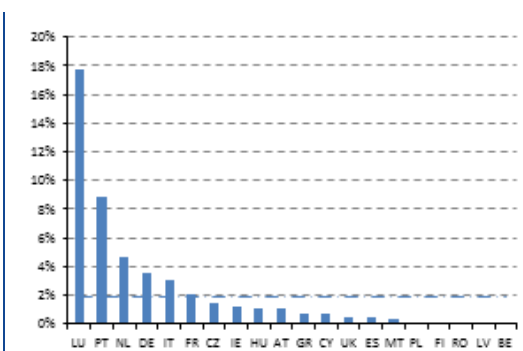
Source: EIOPA.

2.3.3 Exposures of investment funds

Investment funds generally play a material role in CRE markets (Chart 23). Investment funds' exposures to CRE in Luxembourg are significant and account for nearly 18% of GDP; the figures for Portugal and the Netherlands are also quite high, being more than double the EU average.

Chart 23
Investment funds' exposures relative to GDP (2013)

(percentage)



Source: ECB.



Section 3

CRE and financial stability

This chapter gives a general overview of how CRE markets can influence financial stability.

Section 3.1 describes the structure of CRE markets, including the legal, economic and financial framework. Section 3.2 focuses on the transmission channels between CRE and financial stability; in particular, it discusses why CRE markets tend to be more cyclical than RRE markets. Section 3.3 draws lessons from previous CRE-related crises experienced by some European countries over recent decades.

3.1 Foundations

In this report, the ECB's definition of financial stability is used as a reference base. The ECB defines financial stability as “a condition in which the financial system – intermediaries, markets and market infrastructures – can withstand shocks without major disruption in financial intermediation and in the effective allocation of savings to productive investment. The financial system can hence be said to be stable if it displays the following three key characteristics:

1. The financial system should be able to efficiently and smoothly transfer resources from savers to investors.
2. Financial risks should be assessed and priced reasonably accurately and should also be relatively well managed.
3. The financial system should be in such a condition that it can comfortably absorb financial and real economic surprises and shocks.”⁶

3.1.1 Market participants

Three major groups of market participants can be identified in CRE markets: borrowers, lenders and end investors.

Borrowers include all types of firms which develop or invest in commercial property. Since the volume of transactions entered into by a single borrower is typically high and leverage is used to increase the return on equity, these firms borrow either through capital markets or from lenders (often banks). Credit risk and defaults on CRE loans can be significant (and are often materially higher than on RRE), both in relation to CRE investment and development lending. These defaults can lead to credit losses for lenders and, if incurred on a substantial scale, to distress in the financial system.

Lenders meet the demand of borrowers by providing loans to property companies and become exposed to various types of risk. By extending loans, lenders become exposed to credit risk. This

⁶ See <https://www.ecb.europa.eu/pub/fsr/html/index.en.html>



risk can potentially be relevant from a financial stability perspective as CRE loans may make up a substantial part of banks' balance sheets, and loss rates can be high relative to other types of loans. CRE loans also tend to pose a specific concentration risk for banks owing to their low granularity. Furthermore, CRE projects are complex, which makes it very challenging for banks' risk management functions to properly assess, price and monitor the credit risks incurred. Lenders are additionally exposed to liquidity and market risks. A real estate investment is typically long-term, while banks' deposit taking is mostly short-term; this results in a maturity mismatch, with banks being exposed to liquidity risk. As regards market risk, fluctuations in CRE markets affect the ability of the CRE borrower to service the debt. Furthermore, such fluctuations alter the value of the real estate used as collateral for loans extended by lenders to "CRE" and other borrowers.

Finally, we can identify (cash) end investors as the third group of relevant market participants.

They either buy property directly (direct investment) or can use specific vehicles, such as funds or Real Estate Investment Trusts (REITs) (indirect investment). As direct investment in CRE requires substantial financial resources, indirect investment is more common; cash investments would lead to a rather low degree of diversification of such investors, making them more prone to market fluctuations.

3.1.2 Market structure

CRE markets are characterised by their heterogeneous nature. Each property is different to the next as regards characteristics such as location, size, use, etc. Accordingly, one should keep in mind that there are not one but many markets for commercial property.

Demand and supply determine market prices for commercial property; financial stability risks resulting from boom-bust episodes are – predominantly – driven by major price changes resulting from market imbalances. Supply determinants include planning processes, building costs, etc. Demand is likely to be driven by many factors, including current and future economic developments. For instance, occupiers of CRE will demand more space as the economy expands (e.g. demand for retail CRE will be influenced by household consumption patterns, while demand for office and industrial CRE will be linked to business activity more broadly).

In addition to cyclical factors, longer term structural factors such as demographics and technological innovation may affect the demand for real estate, and supply will have to adjust. This applies especially in office and retail markets: the internet, an ageing population and flexible use of office space decrease the need for physical floor space. As this goes hand-in-hand with urbanisation, the effects are very heterogeneous across regions. Investors in CRE will need to take these developments into account.

CRE is also an asset class for investors, and therefore market developments here are linked to developments in other asset markets. As financial investment can react quickly to (expected and actual) changes in interest rates or general market sentiment, investment in CRE tends to be volatile and prone to speculation (more so than RRE). In addition, a rise in prices will tend to force increases in rents, even though this will typically not occur immediately as tenancy agreements are entered into on a medium to long-term basis; therefore, rental rates are only indexed with a lag. As a consequence of these dynamics, rental markets pose similar risks to financial stability as those posed by investment markets.



3.1.3 Legal, economic and financial framework

The legal and regulatory environment is a key aspect of the functioning of CRE markets that may influence both demand and supply. Planning procedures may place restrictions on the use of land for construction purposes – a supply-side factor – while fiscal and other policies work predominantly on the demand side (e.g. tax deductibility of interest payments). In addition, regulatory provisions may influence CRE market outcomes. Accordingly, public policy developments such as a general liberalisation of the credit market should be monitored carefully, as they may be highly relevant from a financial stability perspective.⁷

Furthermore, there are strong interdependencies between CRE markets and the economic environment. Both demand and supply in CRE markets are influenced by overall economic conditions such as interest rates and employment. However, this relationship is not unidirectional. As the real estate sector constitutes a very significant element of the economic activity of most European countries, developments in CRE markets can heavily influence GDP developments.

Finally, any comprehensive financial stability analysis needs to consider certain CRE market participants that can pose specific risks:

- **REITs** are tax-transparent joint stock companies that own and manage income-producing real estate. Their values do not solely depend on fluctuations in the price of the property owned, but also on developments in capital markets. This leads to additional volatility and risk for investors and property markets.
- **Open-ended investment funds** issue shares to investors. Investors can redeem their shares at short notice, which can result in significant maturity mismatch. Hence during a financial crisis, an open-ended fund that has invested in CRE can be forced to sell assets (“fire sales”) which could lead to a further decrease in market prices and an amplification of systemic imbalances.
- **Closed-ended investment funds** differ from open-ended investment funds as they issue a fixed number of shares. Money is therefore only collected when the fund is established and only redeemed when it is discontinued. Since these funds’ liabilities are more long-term, they can pursue more stable investment strategies. From a financial stability perspective, closed-ended investment funds can nevertheless pose risks as a result of their investment strategies, especially if these involve significant leverage.
- **Commercial mortgage-backed securities (CMBS)** can facilitate effective risk transfer and diversification. In the run-up to the recent financial crisis, however, CMBS became associated with loosening credit standards and a lack of transparency; the risk profile of these products was typically opaque, as was the distribution of risks among market participants.

⁷ See the case studies mentioned in Section 3.3.



3.2 Links between CRE and financial stability

This section assesses the cyclical nature of CRE markets and the main transmission channels through which the dynamics of these markets can potentially affect financial stability.

3.2.1 Cyclicity of CRE markets

CRE markets – just as any other asset markets – are cyclical and exhibit the typical four phases of recovery, boom, downturn and bust. This section focuses on the reasons why CRE markets are particularly volatile.

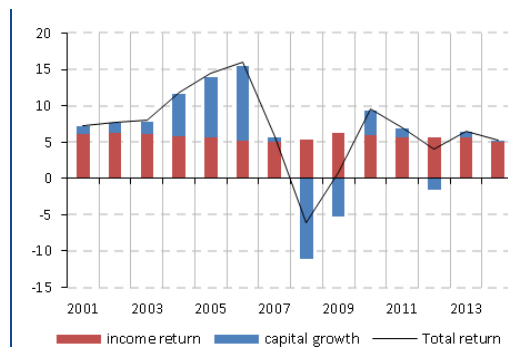
a) Rationale for the cyclicity of CRE markets⁸

CRE markets are closely related to economic developments. During an upswing in the business cycle, economic activity and the demand for real estate space will increase. By contrast, in a downswing, demand for it will decrease.

Accordingly, until the financial crisis, commercial real estate investment showed strong positive total returns in all EU countries, mainly reflecting price increases (Chart 24). When the crisis materialised, average returns turned negative. In particular, it should be noted that the prime market segment (i.e. larger properties often well-located in major cities, usually with strong leases) seems to be more cyclical in nature than the CRE market in general (Chart 25).

Chart 24
Capital and income returns in EU countries

(percentage points)

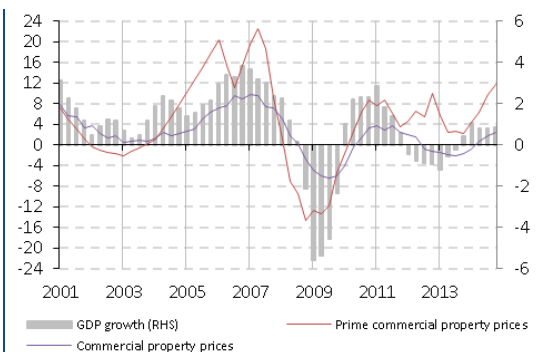


Source: MSCI.

Note: Percentage change per annum; weighted averages.

Chart 25
Euro area commercial values and the economic cycle

(percentage points)



Sources: JLL; ECB.

Note: Percentage change per annum.

The inelastic supply of commercial real estate enhances the volatility of CRE markets. Real estate in general, but CRE in particular, can be characterised by a very low elasticity of supply. The whole production cycle of a commercial property may take two to six years. The lag in construction is

⁸ For a more detailed discussion, see Ellis, L. and Naughtin, C., "Commercial Property and Financial Stability – An international Perspective", Reserve Bank of Australia Bulletin, June Quarter, 2010, and Olszewski, K., "The Commercial Real Estate Market, Central Bank Monitoring and Macroprudential Policy", Review of Economic Analysis, Vol. 5(2), Rimini Centre for Economic Analysis, 2013, pp. 213-250.



therefore substantial. When markets signal significant extra demand for CRE, developers will typically react by building new property; they tend to react to current market signals, and are often less able to foresee accurately what the market situation will be when construction is completed. It is possible that the actual demand for the property once completed will be lower than required, leading to excess supply. This can be exacerbated by the fact that commercial properties have a long life cycle; once they are constructed, it takes a considerable time for demand to adapt to an abundant supply.

Finally, particular features such as the opaqueness of CRE markets can exacerbate cyclicality.

In most EU countries, very limited data on CRE markets are available. As a consequence, market participants can lack a reliable indication of an efficient market price for a certain property. Actual prices will therefore vary more significantly from their fair values than, for example, on the stock market. Additionally, since there is no standardisation of CRE markets, the sector lacks certain instruments such as short selling to facilitate arbitrage. Furthermore, the lack of real-time market valuations increases volatility – appraisers do not carry out valuations very regularly, which could lead to significant alterations in book value and profits for property companies.

b) Why do CRE markets (and loans) tend to be more volatile than RRE markets?

CRE markets are generally considered to be more prone to cyclicality than RRE markets, as demonstrated by the data on the recent downturn presented in Table 2. For many countries, the fall in CRE prices was more than twice as great as the fall in house prices when the financial crisis occurred. Rental growth in CRE markets is also generally considered to be more cyclical than in residential markets.

One reason for this more pronounced cyclicality is that CRE markets tend to be more exposed to the business cycle, and have a lower elasticity of supply than RRE markets.

CRE investment decisions are mostly of an economic nature and taken in accordance with specific investment criteria, such as the internal rate of return. Such decisions are therefore heavily influenced by developments in the economy. By contrast, while buying a house is to some extent based on economic considerations, it also depends heavily on non-economic factors such as the stage of life of the buyer. In a downturn, as companies go out of business and employment falls, the demand for commercial property space to rent is likely to fall. More space which is lettable becomes vacant, and this spare capacity adds to downward pressure on rents. This is markedly different from the dynamic that exists in the case of residential property. In a downturn, households are likely to be less confident about making a house purchase, perhaps exacerbated by tight credit conditions. Given that households need to live somewhere, they turn instead to the rental market, putting upward pressure on rents, at least in the near term. That pressure on rents eases only when households return to the owner-occupied market or the supply of rental property is increased.

Table 2
Cumulated changes in property prices (from previous peak to trough during the 2007-2008 financial crises, per cent (a))

(percentage)

	Commercial property	Residential property
Australia (b)	-24.7	-3.5
France	-12.7	-9.7
Ireland	-56.3	-34.2
Spain	-20.2	-11.2
United Kingdom	-44.2	-22.5
United States(c)	-43.7	-13.5

Source: Ellis, L. and Naughtin, C., "Commercial Property and Financial Stability – An International Perspective" Reserve Bank of Australia Bulletin, June Quarter, 2010, p. 26.

Notes: (a) Trough in price level or latest available date where prices are still falling (b) Commercial property price measure comprises prime office space only; (c) Federal Housing Finance Agency (FHFA) measure for detached houses only; the cycle in respect of the S&P measure is substantially greater.



The financing structures used in CRE markets (and the notable correlation with capital markets) contribute to their more marked fluctuations. While the financing of housing markets is almost entirely national, credit provision vis-à-vis CRE is very international in nature (Chart 16). CRE investment markets are also characterised by substantial, volatile international capital flows (Chart 10 and Chart 12). Consequently, national CRE markets are increasingly dependent on the development of international real estate and capital markets, and are therefore more exposed to additional risk factors. “Irrational exuberance” may play a greater role in CRE markets; investors and lenders may extrapolate past gains in property prices when making investment and lending decisions, thereby supporting unsustainable price rises.

Greater systemic risk in CRE markets, relative to RRE, arises not only because of their higher volatility, but also because CRE loans have a higher default rate. A key reason for this is that the majority of commercial property loans are effectively made on a “non-recourse” basis, so that in the event of a default the lender only has a claim on the underlying property (and not on the borrower’s other assets), with the consequence that borrowers may opt to default rather than inject more of their own capital. Since CRE is held purely for economic reasons, borrowers may default as soon as it is no longer considered necessary for this purpose. By contrast, residential mortgages are typically extended on a recourse basis, so borrowers have every incentive to continue to meet their payments. In addition, RRE is not only an investment, but also a consumption good – i.e. borrowers purchase residential property to live in. The higher default rates on CRE loans are, to some extent, both a result – and a cause – of the higher volatility of CRE markets.

Additionally, CRE loans are more exposed to information asymmetry. CRE projects tend to be complex as they are large and involve numerous parties. Accordingly, it is much more difficult to assess the value and risk of CRE projects, and banks may have difficulties in assuring that borrowers comply with the loan agreement conditions. Monitoring housing loans, by contrast, is more straightforward for lenders.

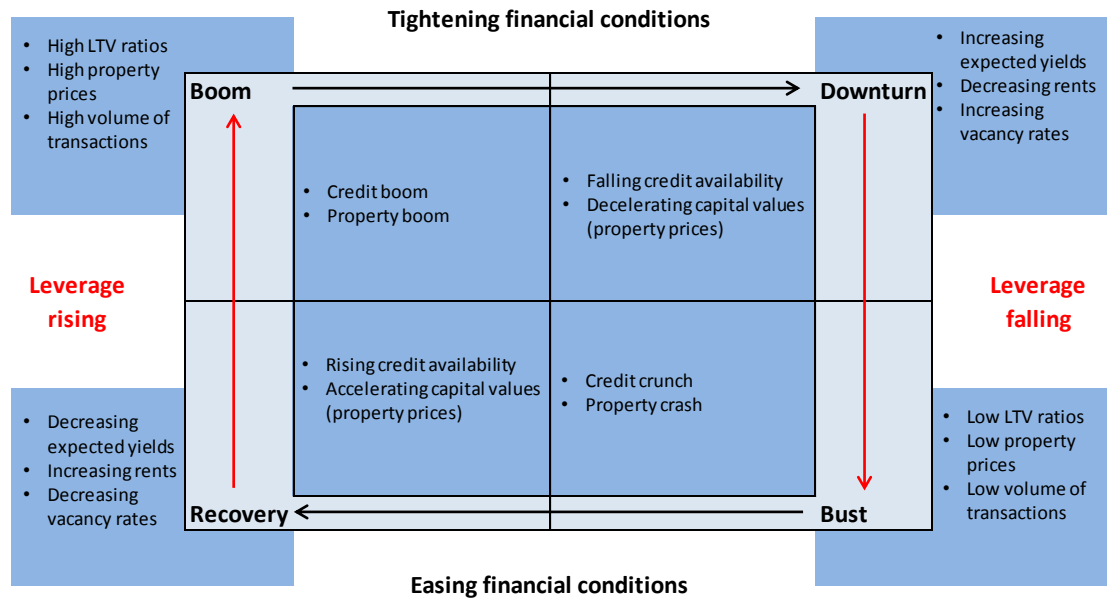
3.2.2 CRE markets and financial stability

For further analysis, it is helpful to outline a general model of a CRE cycle. This model is presented in Chart 26 and describes the four phases of the CRE cycle based on common indicators for the assessment of real estate markets. Such indicators are – among others – property prices, the volume of loans granted for CRE purposes and the credit standards that banks apply in the approval process.



Chart 26

A theoretical framework for CRE cycles



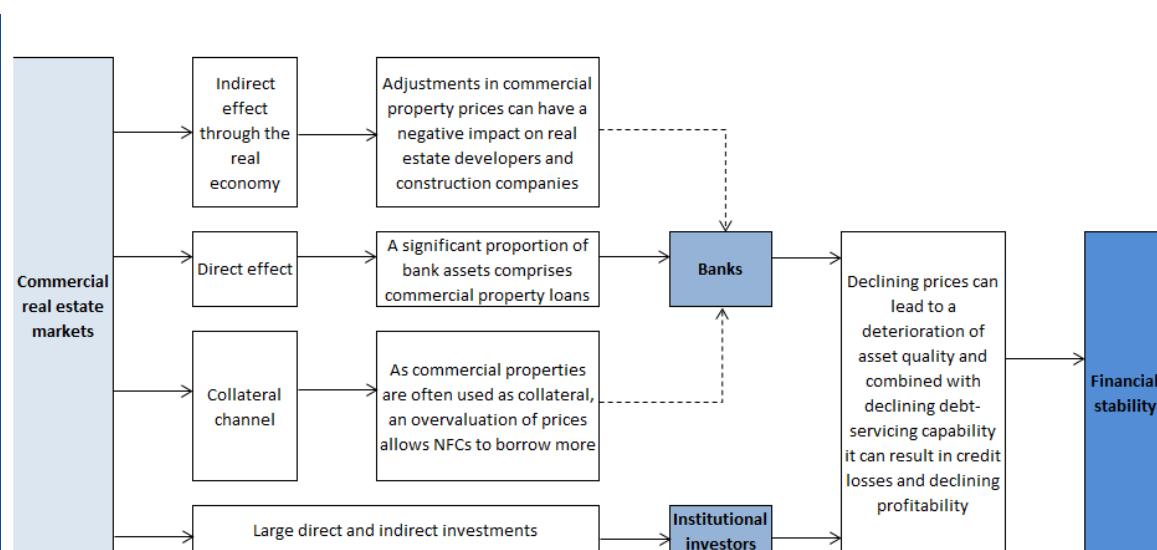
According to this model, the CRE cycle can be characterised by four distinct phases:

- In a recovery, demand begins to rise, while supply is less flexible owing to the lag in construction. Even though some of the extra demand is absorbed by existing vacant CRE, prices and rents tend to rise. Credit availability begins to increase while lending standards are still strict, but relaxing slightly. Accordingly, leverage begins to rise.
- This phase is followed by a boom period which is characterised by strong demand. Supply is now following demand, but still not to a sufficient degree. Prices therefore continue to rise and reach high levels relative to rents, fostered by strong positive sentiment on the part of market participants. The price movement is strengthened by the (positive) feedback loop featuring abundant credit. Furthermore, competition drives banks to lower their credit standards.
- At some point demand decreases, while supply is – owing to the lag in construction – still expanding; the **downturn phase** is characterised by decreasing prices. Banks react to these market developments by tightening credit supply and lending standards. These stricter financial conditions put extra pressure on CRE markets (a negative feedback loop) and result in further price falls.
- This process continues during the **bust period**, in which demand is low and unable to absorb the existing supply. Large price decreases are accompanied by a significant rise in vacancy rates. Since expectations and credit ratings of market participants tend to be negative, credit is costly and not freely available. Market participants attach significant risk premia to investing in CRE.

CRE markets and financial stability are linked through a number of channels. The most relevant interrelations are outlined in Chart 27.



Chart 27
Links between CRE markets and financial stability



Source: Based on ECB, "Commercial property markets", December 2008, pages 14-20.

The core link between CRE markets and financial stability is through lenders granting CRE loans (direct effect). By providing credit, banks or other lenders assume exposure to CRE risks. A downturn in CRE markets can reduce the ability of CRE borrowers to continue to service their loans, and lead to value adjustments in lenders' balance sheets. Substantial losses will only occur if borrowers are unable or unwilling to service their debts. In such cases, banks will incur credit losses, resulting in lower profits or even losses. If substantial losses do occur, capital positions will deteriorate. Under such circumstances, banks will typically react by tightening lending standards. The overall level of credit supply to the economy would then decline, negatively affecting economic growth. While such a downturn scenario could, but would not necessarily, mean a major threat to financial stability, a boom-bust cycle could have more severe consequences. If credit losses were to become so substantial that lenders face significant difficulties themselves, this could have negative effects on the confidence of both clients and banks. This in turn may lead to bank runs and a drying-up of interbank funding. As banks are highly interconnected, it could also result in contagion effects and a serious threat to financial stability.

To avoid such undesirable consequences, adequate measures should be taken. At the micro level, banks should implement prudent credit standards, and have comprehensive risk management in place and sufficient capital (and liquidity) buffers. At the macro level, CRE market developments should be carefully monitored to implement macroprudential measures in a timely manner.

Indirect links between CRE markets and financial stability could further threaten financial stability, especially when negative developments in CRE markets have a detrimental impact on wider economic growth. This impact may be substantial, as the CRE and construction sectors account for a significant proportion of GDP. When property companies suffer losses, this could result in an additional drag on growth in which case other economic sectors could also encounter difficulties. These problems could affect the financial sector if enterprises struggle to service their debt, possibly resulting in credit losses for banks and, at an aggregate level, distress for the financial system.



Another indirect link between CRE markets and the financial system is the collateral channel.

Increasing property prices may allow NFCs (which use property as collateral for loans) to borrow more, which can result in higher loan-to-value ratios. Rising loan-to-value ratios, in turn, may lead to higher LGDs in a downturn; thus property price variations can indirectly affect the losses of financial institutions. Furthermore, companies may find it more difficult to access finance in a downturn if their collateral has fallen in value.

The third channel between CRE markets and financial stability involves investment by institutional investors. Institutional investors, such as insurance companies, pension funds and asset managers, typically invest client funds in asset classes, including CRE. In the event of a downturn in CRE markets, these clients may therefore be forced to bear losses. Some of these institutional investors, particularly insurance companies and pension funds, make an important contribution to household wealth. Significant losses, or even haircuts on promised pay-outs, can therefore lead to a fall in confidence and potentially threaten financial stability. As a result of the growing size of the institutional investment sector in EU countries, and the amount it invests in CRE, this channel is arguably becoming more important.

3.2.3 Indicators for tracking CRE cycles

In order to track the dynamics of CRE markets and the threats they may pose to financial stability, the following indicators should form part of the toolbox used by national competent authorities. This list may need supplementing with additional indicators to reflect national market specificities or national authorities' particular concerns.

- **Physical market**
 - **Demand side:**
 - developments in the economy (e.g. GDP growth, employment etc. and forecasts), to gauge the dynamics of demand for space from occupiers;
 - developments in financial markets, for example the relative performance of CRE markets – as measured by prices, income returns (rent received on a property and its purchase price) and risk premia (the difference between income returns and risk-free interest rates) – compared to equity, bond and other financial markets, to assess potential demand from investors (which may be determined by a search for yield or risk aversion).
 - **Supply side:**
 - vacancy rates of existing property, which may help to absorb some of the additional demand from end users in the event that demand begins to increase;
 - building permits and construction starts, along with details of forthcoming real estate construction projects (expected completion, surface area, etc.), which provide insights into the evolution of supply in the years ahead.
- **Interaction of demand and supply:**
 - CRE prices;
 - rents;



- yields (if prices rise faster than rents for a prolonged period, then yields will fall, and this could indicate that developments are unsustainable);
- transaction volume, as an indicator of market liquidity.

Furthermore, given the heterogeneity of CRE markets, supply and demand should be assessed at a sufficiently granular level, so that each market segment is considered separately, taking into account the different dynamics and risk profiles of the various property types and locations.

- **Financial system exposures**
 - **Investment and lending flows** (including loan and guarantee commitments, both in national and foreign currency, and also relative to a broader measure of lending flows). The type and nationality of investors should also be considered since some types of investor may show different or more pro-cyclical behaviour than others.
 - **Lending criteria** (such as averages and distributions of LTVs, interest coverage ratios (ICRs), debt service coverage ratios (DSCRs), maturity of loans, covenants, etc.) are important and should be monitored. Such developments may, over time, signal potential imbalances such as excessive easing/strengthening or herding behaviour.
 - **The stock of exposures** of financial institutions to CRE should be monitored along the same lines as identified above. This can indicate the build-up of excessive concentrations in the balance sheets of market participants and highlight their vulnerability to shocks, such as changes in CRE prices or interest rates.
 - **NPEs and impairments** are important, as they reflect the quality of banks' risk policies and management and the impact of these factors on banks' balance sheets, notwithstanding that they may be lagging indicators.

Similarly to the supply and demand indicators, these indicators should be monitored to a sufficient degree of granularity and be available at the country level.

3.3 Lessons from past CRE crises

Over the past few decades there have been two major periods of banking crises in Europe: the first one beginning in the early 1990s and the second one in 2007-08, with the latter being linked to the global financial crisis. A significant number of banking crises in individual countries can be associated with a real estate bubble (in both RRE and CRE markets) followed by a bust period. Taking into account the interdependencies between real estate markets and the stability of the financial system, examining previous real estate-related banking crises can provide an insight into the causes and triggers of banking crises in general.

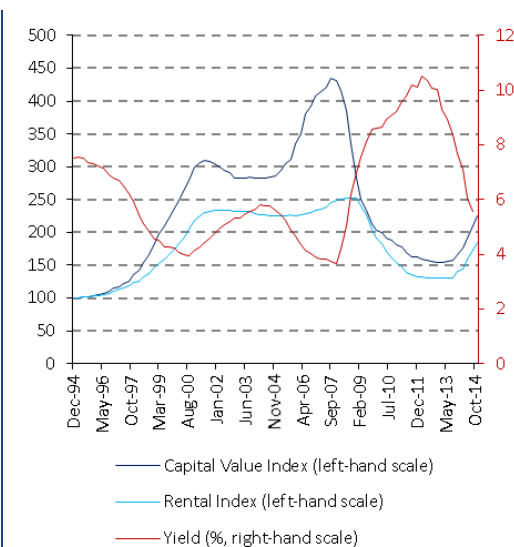
This section uses case studies of previous CRE crises to assess the practical value of the conceptual and theoretical description developed above, namely how CRE markets function and their interlinkages with financial stability. The analysis focuses on the experiences of two Nordic countries (Norway and Sweden) (during the 1990s), Ireland (from 2007 onwards) and the United Kingdom (during the years 1973-75, 1990-94 and from 2007 onwards), and aims to assess the



main differences and common features of these crisis episodes along with other European examples. A detailed presentation of the three case studies can be found in Annex 3.

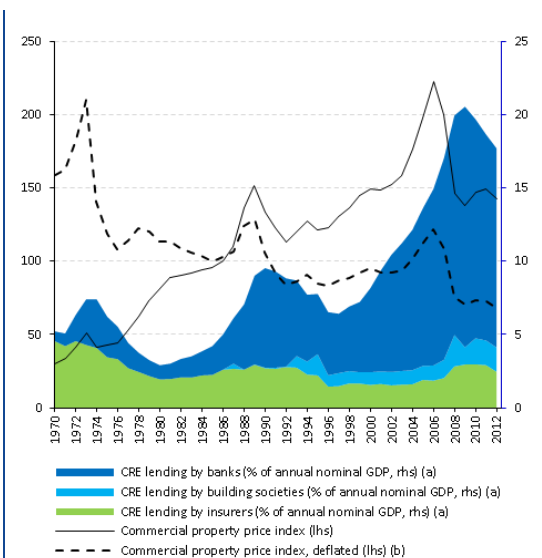
The real estate-related credit boom in Norway and Sweden during the 1980s was driven not only by the upward economic cycle but also by a process of deregulation and liberalisation of credit markets. This was accompanied by a favourable tax and interest rate environment, which led to rising demand and a significant growth in real estate prices. In Norway, the risks were concentrated in RRE; in Sweden, in CRE. Changes in tax policy and the interest rate environment led to a fall in demand for real estate after 1990, which lowered collateral values and caused significant losses for the financial sector. As a consequence, three Swedish banks received government support to prevent a collapse of the financial system.

Chart 28
Capital value, rents and yields in the Irish office market
(percentage points)



Source: MSCSI/MSCI.

Chart 29
UK commercial property debt and valuations
(percentage points)



Sources: Association of British Insurers; Bank of England; Building Societies Association; MSCSI; Office for National Statistics and Bank calculations.
Notes: 1986 = 100 for the commercial property price index; (a) refers to the stock of outstanding lending; and (b) means deflated using GDP deflator.

In the run-up to 2007, the Irish commercial real estate market experienced a strong boom phase driven by a general macroeconomic upturn. CRE transactions and lending for CRE purposes increased to high levels. In addition, the rate of construction of commercial property rose markedly. Commercial property capital values increased by around 70% in the period from 2002 (Chart 28). This was not followed by a commensurate increase in rents; thus, yields on all types of commercial property decreased to low levels. After 2007, as the crisis hit, a large volume of CRE-related portfolios became non-performing and banks required urgent recapitalisation. The Irish government established the National Asset Management Agency (NAMA), which took over non-performing CRE-related loans at their long-term economic value, implying an indirect recapitalisation of banks. The long-term economic value also resulted in an average 58% discount on the “book” value of the CRE loans obtained.



In the period between 1970 and 2010, the United Kingdom experienced three large cycles in its commercial real estate market. In each case, there was a rapid build-up of debt tied to investments in commercial real estate, a large upswing in property valuations and, in the aftermath, a sharp rise in NPLs. Following the boom of the 1980s, 25 smaller banks failed or were closed down. In the run-up to the recent crisis, CRE lending exceeded 20% of annual nominal GDP – double the previous peak. By the end of 2007, CRE loans accounted for more than a third of the stock of lending to UK private non-financial companies by UK-resident banks. As the crisis unfolded, valuations fell sharply, so that real commercial property prices were almost 50% lower than their 2007 peak by the end of 2012 (Chart 29).

The commercial real estate-related banking crises witnessed in Europe during recent decades have shared the following common features.

- **Fast growth of CRE lending:** the most common feature of CRE-related banking crises, experienced by most countries affected, is a rapid growth of lending for CRE purposes and a significant increase in the share of financial institutions' balance sheets related to CRE. In the United Kingdom, CRE lending relative to nominal GDP more than doubled in the late 1980s, while it also doubled before the most recent peak at the end of 2007. In Ireland, CRE credit was growing by more than 60% on a year-on-year basis at the peak of the cycle in 2006, while CRE loans as a share of total lending to non-financial corporations grew from 40% to 60%.
- **Easing of bank lending standards:** fast credit growth has typically been accompanied by an easing of bank lending standards, such as loan-to-value ratios. Banks' increased tolerance for risk results in lending to less credit-worthy businesses.
- **Increase in property prices:** in most countries that experienced a CRE-related banking crisis, there were substantial prior increases in commercial property prices. In the United Kingdom, a sharp increase in real property prices can be observed before each crisis. Meanwhile, Ireland also experienced a significant increase in CRE capital values between 2003 and 2006. In Sweden, property prices (both RRE and CRE) almost doubled between 1980 and 1990. In general, increasing property prices raised collateral values which increased the availability of credit for businesses.
- **High NPL ratios and credit losses after the crisis:** the build-up of vulnerabilities stemming from large CRE exposures often led to high NPL ratios and credit losses after the crisis. In the United Kingdom, around 6% of banks' CRE loans were written off after 2008 while there was a sharp rise in NPL ratios. Non-performing real estate loans also became a substantial issue in Ireland after 2008, necessitating the establishment of an asset management agency.

The first three of these features were closely related as a result of positive feedback loops.

We can also observe certain differences in the causes of the build-up of risks.

- **Legal frameworks, incentive structures and market conditions:** before 1990, financial deregulation and low, even negative, real interest rates supported the commercial real estate market boom in Sweden. This case is similar to the CRE boom in the United States in the early 1980s, where the main driving factors were also deregulation of the financial sector and tax changes.



- **Concentration risk:** in the United Kingdom, in the period from the late 1980s to the early 1990s, rapid growth of CRE lending by small banks led to their loan books becoming skewed towards CRE. Thereafter, as property prices fell, 25 banks failed or closed down.
- **Market conditions and bank competition:** before the period 2007-08, a generally benign macroeconomic environment alongside increasing competition between banks and easing of lending standards caused a rapid build-up of CRE debt in many countries (such as the United Kingdom and Ireland).



Section 4

Tackling macroprudential risks

Risks to financial stability from CRE markets are relevant to the ESRB's intermediate objectives of addressing excessive growth and leverage in the financial system, as well as exposure concentration and excessive maturity mismatch. These closely relate to the common features of CRE crises identified in the previous section. These intermediate objectives of macroprudential policy pertain to the banking sector, and the macroprudential toolkit to mitigate these risks currently focuses on banks.

Instruments can be thought of in relation to the “stretches” typology used in the expert group’s work on RRE. Income stretch can be tackled with instruments that focus on a borrower’s income, such as limits on loan-to-income (LTI) ratios, debt-to-income (DTI) ratios and debt-service-to-income (DSTI) ratios (DSCR and ICR being the equivalents for CRE loans). Also useful are instruments that address collateral stretch, which include an LTV cap. The banking system stretch covers sectoral capital requirements. There is merit in combining different instruments to both address the varying dimensions of risk and channels and to reduce the possibility of leakage.

There is a growing need to address CRE-related risks in the non-banking sector, given that non-bank financing is becoming more important (Chart 3 and Chart 7). This development raises questions about toolkit design and the allocation of macroprudential powers. Macroprudential tools to tackle CRE market risks may need to extend across a range of regulated financial entities, beyond those that are purely banks. In addition, non-regulated or shadow banking entities may play an increasingly prominent role in CRE financing, and must be taken into account when designing macroprudential measures. The ongoing work of the Instrument Working Group (IWG) of the ESRB’s Advisory Technical Committee (ATC) on the design of instruments targeting non-banks is therefore particularly relevant, and the Expert Group on Real Estate is contributing to this workstream. Measures specifically targeting the CRE sector may also take the form of restrictions on underwriting standards, such as LTV caps and income-based measures, in addition to valuation requirements that mitigate pro-cyclicality (as discussed in Box 2).

The significant presence of cross-border investors in some CRE markets poses another challenge. Leakages or spillovers across borders of macroprudential action taken in other jurisdictions should be carefully considered and monitored. The European framework for reciprocity which is currently being developed by the IWG on cross-border effects of macroprudential policy and reciprocity may be useful in this respect. According to this work, reciprocity for measures targeting specific risk exposures, such as CRE, should be a matter of course among Member States. However, this topic is worthy of further attention since the financing of CRE markets in the EU comes partly also from banks outside the EU (e.g. the United States), for which the framework under development will not be binding. Similarly, the question of reciprocity needs to be considered holistically to include all relevant market participants, both within and beyond the banking sector.

Section 4.1 reviews the instruments currently available to target risks stemming from CRE, even though not all of the measures are explicitly identified as “macroprudential”. Section 4.2 consists of an overview of national experiences with the use of such measures.



4.1 Instruments currently available for tackling macroprudential risks

Table 3 provides an overview of potential macroprudential measures identified to date in EU and national legislation, and the sectors which those measures target.

Table 3
Overview of currently available measures of a macroprudential nature for CRE markets

Intermediate objective	Target CRE sector	Measure
Excessive credit growth and leverage	CRE market in general	LTV limits (National legislation)
		DSCR/ICR limits (National legislation)
	Banks	Increase RW for banks using the standardised approach (Article 124(2) of the CRR)
		Increase LGD for IRB banks (Article 164(5) of the CRR)
		Increase RW for specialised lending (Article 153(5) of the CRR)
		Higher own funds requirements or RW (Article 458 of the CRR)
		Pillar II requirements for CRE exposures (Article 103 of the CRD IV)
		Systemic risk buffer (Article 133 of the CRD IV)
		Countercyclical buffer (Article 136 of the CRD IV)
		Insurers
		Matching adjustment and volatility adjustment (VA) of the LTG package
		Equity dampener (Solvency II)
		Supervisory capital add-ons (Solvency II)
Direct and indirect exposure concentration	Funds and asset managers	Leverage limits (AIFMD); leverage limits on REITs (National legislation)
	Banks	Higher exposure limits (Article 458 of the CRR)
Excessive maturity mismatch	CRE market in general	Mortgage lending value requirement (National legislation)
	Funds and asset managers	No available measure

Source: Expert Group on Real Estate.

Note: For clarification of the abbreviations used in this table, see the List of Abbreviations ahead of this report. Not all measures under national law are necessarily available in all jurisdictions.

4.1.1 Banks

The chapter on real estate instruments in the ESRB Handbook on operationalising macroprudential policy in the banking sector sets out the instruments available under the CRD IV/CRR.⁹ It is important to note that most measures in the CRR are to be applied by the competent authority, which, in the SSM

⁹ See http://www.esrb.europa.eu/pub/pdf/other/140303_esrb_handbook.pdf?60a156fc2abdf0285a8cb7ac5393e81



countries, is the ECB (since 4 November 2014). The “national flexibility package” provided for under Article 458 of the CRR is an exception: it can be applied by the designated macroprudential authority.

Sectoral capital requirements through higher risk weights or LGD floors

Under the standardised approach (SA), competent authorities can require risk weights of up to 150% (or apply stricter criteria) for exposures that are fully and completely secured by mortgages on commercial immovable property (Article 124(2) of the CRR)¹⁰. In this case reciprocity is compulsory. Application of these requirements must be motivated by financial stability considerations, experience or expectations of loss, and forward-looking market developments. The concrete application of the three conditions is not yet fully clear and is the subject of controversy. On 6 July 2015 the EBA launched a consultation on draft Regulatory Technical Standards (RTS) relating to the factors competent authorities must take into account when tightening capital requirements for mortgage exposures, including with regard to CRE. The proposed RTS illustrate the conditions and the financial stability considerations that are intended to ensure a harmonised approach towards the setting of higher risk weights (Article 124(2) of the CRR) and higher minimum LGD values (Article 164(5) of the CRR – for details see the following paragraph). The stricter criteria can, for instance, involve stricter LTV limits. Implementing them requires a notification to the EBA, which will then publish its decision. However, since Article 124(2) of the CRR applies only to banks using the standardised approach, the instrument would only affect a small proportion of the market in many Member States – the principal market participants use the internal ratings-based approach.

Competent authorities can also set higher minimum exposure-weighted average LGDs under Pillar I for exposures of IRB banks related to loans secured by CRE (Article 164(5) of the CRR).

Similarly to Article 124(2) of the CRR, any such action must be motivated by financial stability considerations and other relevant indicators. However, in contrast to the higher risk weights mentioned above, no upper limit is imposed on the LGD. The EBA must be notified of, and is required to publish, the higher minimum LGDs. Compulsory reciprocity, as provided for by the CRR, may increase the effectiveness of the measure. As mentioned above, the EBA is currently consulting on draft RTS addressing issues in this area.

It should be noted, however, that there appears to be some inconsistency between the standardised approach and the internal ratings-based approach to higher risk weights. Article 124(2) of the CRR makes it possible for supervisors to set higher risk weights for CRE-related exposures under the standardised approach for both corporate and retail business. But under the IRB approach, Article 164(5) of the CRR covers only retail exposures, despite the fact that the CRE exposures of most banks are in their corporate portfolios.¹¹

Furthermore, some provisions of the CRR may have potential procyclical effects. This is particularly so where risk weights are increased when losses deepen. In this case, the procyclical effect may be mitigated by taking into account forward-looking market developments. Thus, it would be

10 It should be noted that certain SA exposures secured by commercial immovable property carry a 50% risk weight, provided strict criteria are met (Article 126 of the CRR), e.g. the value of the property does not depend upon the credit quality of the borrower; the risk of repayment does not depend upon the performance of the underlying property; strict legal, monitoring and valuation requirements are met; and the loan does not exceed 50% of the market value or 60% of the mortgage lending value. Many large CRE exposures do not meet these criteria.

11 See also the ESRB's response to the call for advice by the European Commission on macroprudential rules in the CRD/CRR, 30 April 2014, p. 24: “there might be an inconsistency in scope between Articles 124 and 164 CRR, the coverage of Article 164(4) CRR being limited to “retail exposures secured by immovable property”, while Article 124(2) CRR applies to “exposures secured by mortgages on immovable property” in general.”



preferable to increase risk weights when losses are still low, to account for a greater risk of an increase in losses. In addition, increasing the minimum LGD under Article 164(5) of the CRR will capture only the high quality loans with relatively low risk weights.

It is also possible to apply the so-called “slotting” approach for specialised lending, such as that involving income-producing real estate (Article 153.5 of the CRR). This approach is employed in the United Kingdom, and implies that CRE loans are assigned to different “slots” depending on a range of factors designed to reflect the level of risk. The EBA has also been requested to develop RTS covering the criteria to be applied when assigning higher risk weights under the said article. Even if the measure is intended to be employed first and foremost by microprudential authorities for microprudential purposes, it could also assist in addressing macroprudential risks.

Under the “national flexibility package”, macroprudential authorities can mitigate financial stability risks with a number of measures (Article 458 of the CRR). These include increasing “risk weights for targeting asset bubbles in the residential and commercial property sector”, setting exposure limits for large CRE counterparties or raising “the level of own funds laid down in Article 92”. Such measures can capture exposures in all risk categories, thereby increasing effectiveness. They can also be used to effectuate risk weight increases beyond the 150% limit of Article 124(2) of the CRR, and to introduce floors for LGD under the internal ratings-based approach. In addition, risk weights can be increased for exposures that exceed the large exposure limit. However, large exposures are defined in article 392 of the CRR as exposures to “a client or group of connected clients” with a value equal to or exceeding 10% of the eligible capital; concentration risk focused on an entire sector (in this case, CRE) does not appear to have been taken into consideration.

However, the use of any measures provided for in the “national flexibility package” is subject to a higher burden of proof and a more onerous procedure. Before applying Article 458, the CRR requires “a justification of why Articles 124 and 164 of this Regulation and Articles 101, 103, 104, 105, 133, and 136 of Directive 2013/36/EU (i.e. CRD IV) cannot adequately address the macroprudential or systemic risk identified, taking into account the relative effectiveness of those measures”. The procedure involves the notification to, and positive opinions of, EU institutions and bodies (including the ESRB), and any recommendations they make. Reciprocity of Article 458 CRR measures is merely voluntary, and this may undermine its effectiveness given the importance of cross-border exposures. Moreover, it is difficult to make the measures permanent, since the process of applying them must be repeated every two years.

Finally, if there is rapid growth in CRE credit or if any risk posed by the CRE sector is identified as a systemic risk, general tools such as the countercyclical capital buffer (CCB), systemic risk buffer (SRB) or adjustments to Pillar II capital requirements can be employed.¹² When excessive credit growth is largely caused by CRE, the designated authority can increase the CCB rate (Article 136 of the CRD IV), although the risk here would perhaps be better addressed by adjusting risk weights. When exposure to the CRE sector is identified as a non-cyclical systemic risk that cannot be addressed with other CRR/CRD IV instruments, a designated authority may use the SRB (Article 133 CRD IV). The CRD IV does not specify the nature of systemic risks for which the SRB can be applied, but a designated authority must provide a convincing explanation of why the exposure to the CRE sector forms a structural system-wide risk. The final general tool available to the competent authority is to apply a Supervisory Review and Evaluation Process (SREP) in a similar or identical manner to any institutions that are exposed to risks from the CRE sector (Article 103 of the CRD IV). Following the

12 See ESRB Handbook on Operationalising Macro-prudential Policy in the Banking Sector, 2014, Chapter 3, pp. 48-76.



SREP, the competent authority can require a higher level of own funds, increase risk weights, or increase LGDs (for banks using the investment ratings-based approach). The application of such measures is also envisaged in the case of excessive concentration.

4.1.2 Insurance companies and pension funds

The Solvency II Directive, which will be coming into force in 2016 and is aimed at harmonising regulation of the EU insurance sector, may provide national authorities with a set of instruments that could help mitigate risks stemming from CRE, even though financial stability is only a secondary objective of the new regulation. The solvency capital requirement (SCR) sets a capital charge for property risk in the standard formula (either in the “property risk” module or “equity risk” module), along with a capital charge for concentration risk. However, this latter capital requirement only targets a potential concentration of investments on a limited number of issuers or linked groups of issuers; sectoral and geographical concentration of risk are not covered. As a consequence, insurers would not be prevented from accumulating excessive exposures to CRE through, for example, directly held property and/or a portfolio comprising both shares and bonds issued by a sufficiently high number of different property companies or REITs.¹³

Some issues relevant to financial stability were also addressed by the Omnibus II Directive in its long-term guarantees (LTG) package. The matching adjustment and the volatility adjustment (VA) aim to reduce the effect of market volatility on Solvency II balance sheets. For indirect exposures (e.g. through the holding of shares in REITs), the equity dampener allows for countercyclical movement in the equity capital charge of the standard formula.

Finally, instruments that could help mitigate the risk resulting from maturity mismatch in the insurance sector seem to be very limited. Similarly to open-ended investment funds (see Section 3.1.3), insurance companies may be exposed to this risk through unit-linked contracts invested (wholly or in part) in CRE, in namely when a significant proportion of policyholders make similarly timed redemption requests. This could pose macroprudential concerns should CRE market conditions prevent the sale of the underlying assets at a reasonable price (potentially leading to fire sales).

Pension funds are subject to the provisions of Directive 2003/41/EC on the activities and supervision of institutions for occupational retirement provision. The Directive covers, among other things, the calculation and funding of technical provisions, regulatory own funds and investment rules. European regulations on pension funds do not currently contain any macroprudential measures as such; however, national authorities may have certain options available to them if necessary, e.g. the ability to stipulate higher regulatory own funds or stricter / more prudent investment criteria.

4.1.3 Funds and asset managers

Undertakings for collective investment in transferable securities (UCITs) are either prohibited from investing directly in real estate, or the restrictions on such investments are very tight. The

¹³ The insurers concerned would only be subject to regulatory capital requirements for interest rate risk (on bonds issued by property companies), for equity risk (on shares in property companies) and for real estate risk (on directly held property).



UCITS IV Directive does not include any specific macroprudential tools, but may provide one indirectly. Article 84 of this Directive states that a home Member State may allow its competent authorities to require the suspension of the repurchase or redemption of units in the interest of the unit-holders or of the public. While no direct reference is made to financial stability or macroprudential policy, the phrase “interest of the public” may be interpreted to produce a similar effect.

The leverage of alternative investment funds (AIFs), such as hedge funds, can be restricted (Article 25 of the AIFMD). This only applies, however, in exceptional circumstances and when the stability and integrity of the financial system must be ensured. The competent authorities of the home Member State may impose additional limits on the level of leverage that AIFs are able to employ. It is worth noting that these restrictions should apply to the leveraged transactions (the so-called “financial structure”) as well as the fund itself. Such measures can thus be used to indirectly target unleveraged funds that participate in leveraged transactions.

Finally, investment funds may also be prone to risks arising from maturity mismatches, as noted in Section 3.1.3, in the context of open-ended funds. The topic was under consideration by the IWG at the time of finalising this report. Even if the IWG did not specifically address the risks arising from CRE markets, its recommendations may also prove helpful in this context.

4.1.4 The CRE market as a whole

Restrictions on activities, rather than on entities, may help limit exuberance in CRE markets and the risk of financial instability. Such measures directly target the risky activity itself, rather than the intermediary involved, and are therefore able to exert influence directly over the risk that is taken.

Measures to address underwriting standards can include LTV caps and debt service or interest coverage ratio (DSCR/ICR) floors. An LTV limit can be applied to CRE lending by banks or to the broader market. This limit can restrict imprudent lending, as it lowers the loss given default. Its effectiveness may also be increased when combined with higher risk weights under Article 124(2) of the CRR, or minimum LGDs under Article 164(5) of the CRR. Restrictions on the DSCR/ICR may complement LTV caps, as they can ensure that the property generates sufficient cash flows to cover repayment of the loan, which in turn reduces the probability of default on the loan.

However, as demonstrated below, both types of instruments have shortcomings and thus require further attention.

- LTV caps may have to be lowered as real estate prices increase, otherwise the increase in their market value may facilitate more lending, leading to procyclical dynamics. Similarly, the DSCR and ICR are sensitive to interest rate levels, so these may have to be reassessed if interest rates (or expectations regarding them) change.
- Borrowers may obtain financing from abroad, thereby making it easy to circumvent any measure taken. A solution could be to ensure that all transactions and their financing are centrally registered, and apply the measure at this level.



- Given that almost half of the funds invested in European CRE markets come from equity investors (Chart 4), a significant proportion of the CRE market would not be affected by these measures. Hence, should it be necessary to reduce the leverage of the financial system as a whole, provisions under the AIFMD could be used to target funds employing credit in their liability structure.

Another possible measure to tackle cyclical in CRE markets is to adopt through-the-cycle valuation approaches that take a longer-term perspective. Instead of using current market values, valuation of commercial real estate could be based on more conservative mortgage lending values (MLVs – see Box 2). The EBA is drafting RTS that set out a harmonised framework for the assessment of MLV at the EU level. In these RTS, the primary approach to determine MLV is the so-called “income approach”, which relies on a prudent assessment of the cash flows that the property can reasonably be expected to produce in the future. When the property is not rented out, or not intended to be rented out, the comparison approach (based on the market value of comparable properties) should be used. It is a concept aiming to provide a value that is stabilised through time. An alternative is the investment value approach, which explicitly forecasts the cash flows that a property can be expected to generate and discounts them at a risk adjusted discount rate – it may vary through time with changes to expected cash flows and changes to the risk free rate and risk premium.

Box 2

Mortgage lending value

Instead of using current market values, valuation of commercial real estate could be based on mortgage lending value (MLV), which is more conservative and can limit cyclical. Such a long-term valuation is at the heart of the German Pfandbriefe market¹⁴, but is also used in the Czech Republic and Spain, and is defined in Article 4(1)(74) of the CRR.

Mortgage lending value is defined in the CRR as “the value of immovable property as determined by a prudent assessment of the future marketability of the property taking into account long-term sustainable aspects of the property, the normal and local market conditions, the current use and alternative appropriate uses of the property”. Valuation in accordance with this definition of MLV takes into account cash flows over the complete life cycle of the property, and is therefore more forward-looking than market valuation. It is based on the actual rental income, excluding any incentives or inducements that may be used to attract tenants, or (speculative) forecasts of future rental growth. Moreover, the discount rate is conservative – it is based on the refinancing costs of the creditor bank, instead of the spot yield in the market. Finally, the valuation period extends to the life of the property, not just the life of the loan. As Chart 30 implies, the mortgage lending value must not exceed a market value calculated in a transparent manner and in accordance with a recognised valuation method.

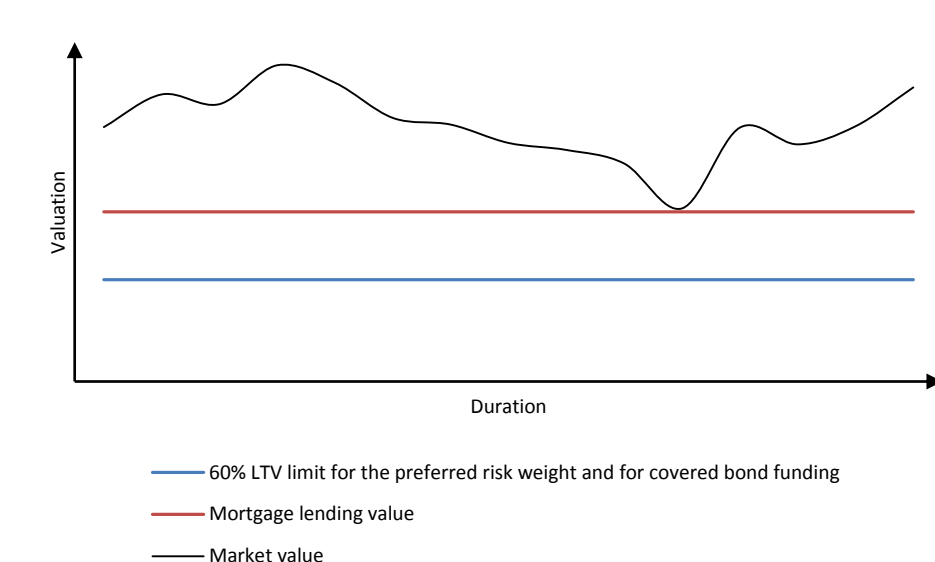
Such through-the-cycle valuation could be used in addition to market valuation. In this way, the market value could be challenged and potentially excessive cyclical developments could be detected. This may assist macroprudential policy-makers in assessing risks to financial stability from the commercial real estate market. This valuation approach could also be used to determine capital

¹⁴ Verband Deutscher Pfandbriefbanken (Association of German Pfandbrief Banks) explains the concept (see https://www.pfandbrief.de/cms/_internet.nsf/tindex/en_24.htm).



requirements, as proposed by the Real Estate Finance Group in the United Kingdom (a group of participants in the CRE industry that has considered reforms to real estate financing in that country).¹⁵

Chart 30
Illustration of mortgage lending value



Notes: The 60% LTV limit referred to in the chart is in place for loans underlying German Pfandbriefe.
Source: Expert Group on Real Estate

The advantage of this alternative valuation method is that it can lead to more prudent approaches to lending; a drawback is that it may appear arbitrary, as it is not market driven. The through-the-cycle value may therefore diverge substantially from the market value, especially when institution- or loan-specific discretion is allowed in the valuation method. Nevertheless, over a longer period the use of a valuation method such as MLV, alongside the regular market value, could lead to less volatile real estate values and, thus, to less volatile LTVs.

4.2 National experiences

This section provides a short overview of measures – macroprudential and others – that have been implemented to mitigate financial stability risks posed by CRE. Unless noted otherwise, the information on EU countries is taken from the expert group's CRE data collection questionnaire. Examples of macroprudential actions implemented by countries beyond the EU to limit risks arising from CRE are also included.

Most countries which have acted to address CRE-related risks have either increased risk weights or implemented an LTV limit on lending (Table 5; Annex 4 contains more details). The

¹⁵ See recommendation 4 of A Vision for Real Estate Finance in the UK – Recommendations for reducing the risk of damage to the financial system from the next commercial real estate market crash, Investment Property Forum, London, May 2014, pp. 23-30, available at <http://www.ipf.org.uk/asset/0D24F055-38E6-419F-8E117665F4F47854/>



actions undertaken regarding capital/risk weights during the period 2014-15 reflect the fact that several EU countries had a 100% risk weight in place for CRE prior to the entry into force of the CRR/CRD IV, and seeking to avoid a drop from 100% to 50%, made use of the national discretion allowed for in Article 124 of the CRR.

The majority of actions are recent, but those of three countries are long-standing enough to be evaluated.

In Hong Kong, LTV caps have been implemented since 1991; the LTV limit has successively been lowered and refined so that, since February 2013, it has stood at just 20% for commercial and industrial properties purchased by borrowers who already have entered into a mortgage and whose income is derived from outside Hong Kong. The measure seems to have had a positive impact on bank delinquency, while its impact on price developments has been much less obvious. In India, stricter requirements imposed in the mid-2000s appear to have limited CRE lending, although it is difficult to isolate their impact from that of other policy measures (e.g. those concerned with monetary developments). In 2006, the United States implemented soft guidance requiring management at banks making CRE loans to devise an “overall CRE lending strategy” that included both minimum underwriting standards for individual loans and a detailed approach for managing the total CRE portfolio. Banks with total CRE loans relative to total risk-based capital exceeding 300%, or total “construction and land development” (CLD) loans relative to total risk-based capital exceeding 100% (deemed highly concentrated by regulators) were made subject to enhanced oversight and analysis as well as to potential increases in capital requirements. Those banks which had tighter controls imposed on them have expanded CRE lending by less than other banks, but leakages to other forms of lending can be seen (for example, household lending is estimated to have increased as a result of this policy). The experience of applying macroprudential instruments to residential mortgage lending would tend to confirm this.

Table 4
Actions taken to limit risks stemming from exposure to CRE, grouped by type of action ^{(a)(b)}

Country	Year	Key detail
Capital/risk weights ^(c)		
Croatia	2015	The central bank recommended that credit institutions should harmonise their standards and should not apply the 50% risk weight to CRE exposures until the market becomes more liquid, because CRE was not deemed to be liquid enough.
Ireland	2007	Higher risk weight of 150% applied to speculative development lending
	2014	Increase in the risk weight for CRE exposures from 50% to 100%
Netherlands	2014	One-off asset quality review led to higher provisioning, higher capital requirements and a requirement for three-yearly independent valuation of collateral
Romania	2014	Set higher risk weights of 100% for CRE
Sweden	2013	Set higher risk weights of 100% for CRE for banks using the standardised approach
United Kingdom	2011	Slotting regime whereby loans are required to be placed in ‘slots’ of riskiness with varying risk weights
	2012	Higher capital requirements to reflect conservative valuation of CRE (and other assets)
	2013	Stricter eligibility criteria applied when assigning the 50% risk weight to exposures fully and completely secured by mortgages on commercial immovable property located in the United Kingdom, depending on annual average loss rates over a representative period
	2014	Stricter eligibility criteria applied for assigning the 50% risk weight to exposures fully and completely secured by mortgages on commercial immovable property located in a jurisdiction that is not an EEA country, depending on annual average loss rates over a representative period
India	2005	Risk weights and provisioning requirements varied over cycle
Norway	2014	Set higher risk weights of 100% for CRE for banks using the standardised approach



Country	Year	Key detail
LTV cap		
Poland	2014	75% (80% if the part above 75% is insured or collateralized with funds on bank account, government or NBP securities)
Hong Kong	1991-	Tightened successively from 90% to 20%
Singapore	2011	50% on housing loans that do not involve individuals
Turkey	2011	50%
Other actions		
Denmark	2014	Loans must generate a positive cash flow
Luxembourg	2013	Limit on exposures to real estate development as a share of capital
United States	2006	Guidance to banks with high CRE risk concentrations to tighten managerial controls

Sources: CRE questionnaire, IMF and national sources.

Notes:

- (a) Some countries have LTV limits on CRE (or residential) mortgage loans included in the pool for covered bonds. These limits are not shown in the table.
- (b) A broad view has been taken of policy actions, i.e. strictly speaking, some may be classed as microprudential actions first and foremost.
- (c) The capital/risk weight-related actions in 2014 and 2015 reflect the fact that several countries had a 100% risk weight in place for CRE prior to the entry into force of the CRR/CRD IV, and seeking to avoid a drop from 100% to 50%, made use of the national discretion allowed for in Article 124 of the CRR.



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Annex 1 National definitions of CRE

Country	CRE definition
<i>Definition of CRE included in the expert group's questionnaire</i>	Commercial real estate is usually defined as income-producing property. Property used for residential purposes is labelled as commercial real estate when it is owned or developed for commercial purposes. The definition of commercial real estate should reflect the risk profile of the asset class considered, rather than the ultimate purpose of the property. Therefore, the residential segment of commercial real estate should be distinguished from residential property owned and occupied by households. This is because commercial real estate is more often bought as a speculative investment by professional investors than residential property, which often serves as accommodation for its owners.
AT	We use the same definition if possible; however, in many cases the indicators could not be exactly matched to the definition (property used for commercial purposes)
BE	Our definition does not differ markedly from that given in this file. We only restrict the residential segment of commercial property to multi-household dwellings. It seems to us that it is very difficult to distinguish between a residential and a commercial purpose in the case of a single household dwelling.
DE	For the purpose of this questionnaire, we had to refer to a number of different sources. Accordingly, definitions differ.
DK	We currently have several different and not mutually consistent data sources concerning commercial real estate. Thus, it is necessary to use several definitions, but generally they are all within the scope of the definition provided. However, in some statistics, it is impossible to distinguish between commercial and residential real estate.
ES	For the purpose of completing this survey, the following definition of CRE has been used: credit to the non-financial private sector used to buy property under three categories: i) office buildings, ii) commercial use, and iii) other purposes (offices and commercial premises).
FI	As regards statistics, it should be noted that, in the classification of sectors, non-financial corporations (S.11) include also housing corporations (S.112). Housing corporations include all corporation forms of housing units: housing companies, housing cooperatives, residential real estate companies, right of occupancy associations and other housing corporations, as well as companies engaged in renting, ownership and management of housing (excluding management of real estate on a fee or contract basis). In Finland, most non-listed limited liability housing companies are owned by households and used for residential purposes. Therefore, in ECB statistics, for example, these household-occupied companies cannot be distinguished from commercial real estate companies.
FR	Commercial real estate is generally defined by income-generating assets held by real estate professionals. Real estate professionals refer to property developers, property companies, investors (insurance companies, funds, etc.) but exclude individuals (including in respect of buy-to-let housing) as well as non-financial corporations which buy or build a property for their own use (such as hotels, shopping centres, leisure centres, production plants).
GR	We broadly agree with the definition of CRE, but owing to data limitations and the structure of the local market, we assume that in Greece the CRE sector consists of offices, retail premises, logistics-warehouses, industrial properties and hotels.
HU	The definition used does not differ from the one provided.
IE	The commercial property market is generally viewed as being made up of three components: office, retail and industrial. Holdings of residential property by large-scale professional investors have not traditionally played a significant role in the Irish property market, but are now becoming a more prominent feature.
IT	We broadly agree with the definition of commercial real estate provided, but we believe we need to have a better understanding of the implications for the measurement of the stock of dwellings, as it apparently would change not because of the nature of the asset but because of contingent decisions, e.g. the household's option either to rent or to live in a house. A sounder definition would come from cadastral registers. Based on this argument, and also owing to data limitations, in our answers we will include only office, retail and productive assets in terms of CRE in the property sector.
LT	There is no formal definition in place. CRE is most often treated as what is left after accounting for housing and land.
NL	In addition to income-producing real estate, investment objects (in general) are classified as commercial real estate.
PL	In Poland, the CRE sector consists of offices, retail premises and warehouses. Residential property for rent is owned by private people and is not considered as a significant segment, yet.
PT	The definition used does not differ from the one provided.
RO	All loans granted to construction and real estate sectors, loans granted to non-financial companies (other than firms active in construction and the real estate sector) that have as collateral, inter alia, a mortgage.



Country	CRE definition
SE	We do not have an explicit definition, but usually limit the concept of commercial property to properties that are not private homes in the form of single-family houses or apartments held by tenant-owner associations, and which can normally be bought and sold in the property market.
SI	The definition used is in line with the definition provided. Commercial property includes the sale of commercial buildings, office premises, and premises for hotels and restaurants, retail and other service activities.
UK	Our preferred definition is broadly in line with the proposed definition. However, all data will not be fully consistent with it (for instance, lending for property development is often included). Various data sources all include residential property as a type of commercial property that is used for investment purposes by professional investors.



Annex 2

Review of available data regarding the CRE market

In order to monitor the financial stability risks related to the commercial real estate market, information on the physical market as well as the financial system's exposure to the CRE sector risk is crucial. However, data on CRE are rather scarce (in contrast with data on RRE), which means that official data on fundamental variables such as commercial property values and rents do not exist for most EU Member States. To some extent data gaps are filled by data from private sources, but the poor coverage and lack of consistency between sources and across countries makes monitoring challenging. Furthermore, information on the financial sector's exposure as regards lending and the level of risk is often the result of a one-off data collection exercise, rather than the regular data collections that allow comparisons over time.

Data gaps exist in several areas:¹⁶

- price developments and the overall dynamics of physical CRE markets;
- exposures of finance providers (banks, insurance companies and pension funds, REITS, asset management funds, debt funds);
- risk policies of finance providers (lending standards, investment strategy, risk appetite, etc.);
- financial position of property borrowers (leverage, etc.).

This annex focuses on identifying possible data sources for (i) the physical market and (ii) the financial system's exposure to CRE. Given significant limitations vis-à-vis data, the workstream developed and ran a questionnaire (the "CRE questionnaire") which was circulated within the expert group. This questionnaire is presented in part 3 below.

2.1 Data on the physical CRE market and price developments

Very few EU Member States can rely on their own official data sources for CRE prices (Annex 2). As a consequence, most analyses of CRE markets rely on data from private sources. As well as private companies which release figures and/or research on each national market in the EU, the research departments of certain global real estate services companies may provide data covering at least a material element of CRE markets in the EU, across all segments (office, retail and industrial premises, as well as residential property leased or developed for commercial purposes). This makes it possible to develop a view across countries. Private companies which provide such data include:

- Morgan Stanley Capital International Inc. (MSCI) (acquired Investment Property Databank Ltd. (IPD) in 2012);¹⁷

¹⁶ See ECB (2008) and the Financial Stability Board Standing Committee on Assessment of Vulnerabilities (2014).

¹⁷ MSCI is a provider of investment decision support tools.



- Jones Lang LaSalle Incorporated (JLL) (a company listed in the United States);¹⁸
- Cushman & Wakefield (formerly DTZ);
- CBRE Group, Inc. (CBRE) (a company listed in the United States).

However, the data often lack transparency concerning computation methodology, the sample used and its composition over time.

Table 5
Overview of price indices and records property transactions in Member States participating in the Expert Group on Real Estate

Country	Can your country rely on its own nationally accepted price and/or value indices?	Can your country rely on an accurate record of property transactions?
AT	No	Yes, data taken from the land register
BE	No	No
DE	No official index Private indices available	Yes (from the regional committees of valuation experts), but probably not completely comprehensive for all regions
DK	NA	NA
ES	No	NA
FI	No	NA
FR	No	Yes, on notaries' database
GR	Yes, available commercial property indices from the Bank of Greece (prices and rents) for the retail and office sector (first released on 2 March 2015)	No
HU	No	No
IE	No national authority index available Private indices available	NA
IT	Yes	Yes, the number of transactions by property type is recorded and released by Agenzia delle Entrate
LT	Yes	Yes
NL	No	No
PL	Yes	Yes
PT	No	No
RO	NA	NA
SE	Yes	Yes
SI	No	Yes, since 2013
UK	Private indices available.	Yes, but are probably not completely comprehensive for smaller deals

Source: CRE questionnaire.

Note: "NA" indicates no answer received.

¹⁸ See "Commercial Property Markets – Financial stability risks, recent developments and EU banks' exposures", ECB, Frankfurt am Main, December 2008, p. 21 (Box 2), available at <https://www.ecb.europa.eu/pub/pubbydate/2008/html/index.en.html>



These private companies may provide data on a relatively comprehensive range of market and risk indicators such as:

- outstanding property stock, property type and available square meterage;
- investment flows, property transactions and investor type/nationality;
- prices, rents, risk premia and vacancy rates;
- credit conditions (LTV ratios, covenants, maturity, etc.);
- financing structure (banks, funds, markets, etc.).

Most of the analysis in this report regarding returns and price developments over time rely on MSCI data. MSCI provides figures for the majority of EU countries (Table 6). Nevertheless, the proportion of the market for which data is captured (i.e. the coverage) varies from country to country. In particular, it is rather low for Germany, which accounts for a significant share of the EU market, and also for Ireland, which experienced a deep CRE crisis in recent years. In addition, MSCI tends to focus only on a limited number of cities, which particularly seems to be the case for Italy.

Table 6
MSCI data coverage (September 2014)

	AT	BE	CZ	DK	FI	FR	DE	HU	IE	IT	NL	PL	PT	ES	SE	UK	EU	EA
Estimated size of total market (EUR bns) (a)	27	44	12	41	45	275	317	7	20	99	111	26	22	55	131	432	1,664	1,016
Estimated IPD coverage (EUR bns) (b)	8	7	3	15	19	102	49	2	2	25	36	7	8	16	39	186	523	272
Estimated IPD coverage (percentage) (b)/(a)	30	15	22	37	43	37	15	23	12	26	32	25	37	28	30	43	31	27

Source: MSCI.

In addition, JLL provides data on the “prime” segment of the CRE market, i.e. well-located property in major cities that is considered to feature lower risk. This segment appears to account for a relatively modest proportion of the overall market, but may deserve increased scrutiny from a financial stability perspective, since it may be prone to higher volatility than the non-prime segment.

As regards price indices, those of both MSCI and JLL are valuation-based, that is, they rely on expert opinions rather than observed transactions. However, the report which MSCI releases each year on the comparison between valuations and actual sales prices¹⁹ shows that the absolute difference between the two is generally around 10% (Chart 31).

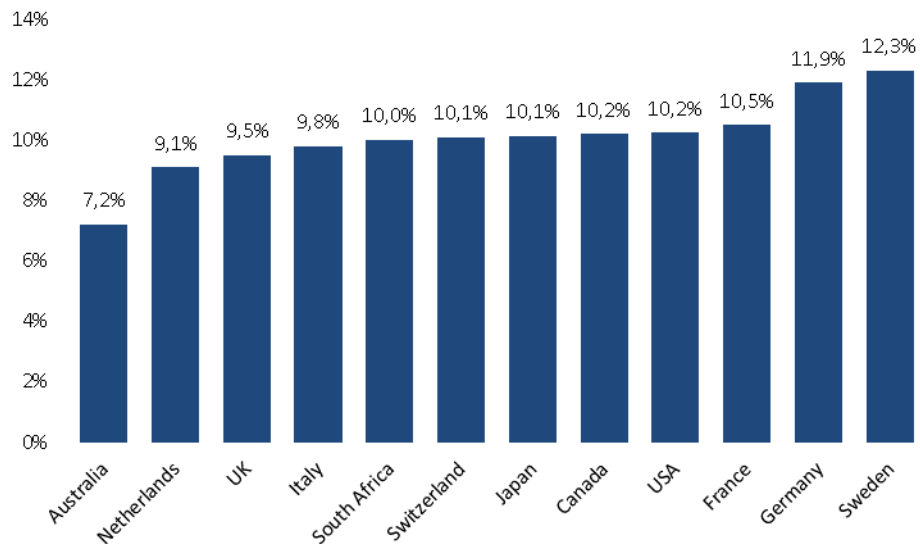
19 See Ben Amor, H., “Real Estate Index Analyses: Valuation and Sale Price Comparison Report”, MSCI, June 2015 (available at <https://www.msci.com/documents/10199/98de773b-8b72-467c-a8ee-0eee7fc200a8>).



Chart 31

Weighted average absolute difference between valuations and sales prices by country, 2005 to 2014

(percentage)



Source: MSCI.

Note: The average absolute difference records the absolute difference between the market-adjusted valuation and the sale price, regardless of whether the adjusted valuation is above or below the sale price. In other words, it ignores whether the difference between the two values is positive or negative. The average absolute difference indicates how different on average the typical sale price is from the preceding market-adjusted valuation.

Data on transactions are also produced by Cushman & Wakefield, and these generally cover the same geographical area as the data produced by MSCI. In addition, CBRE provides certain information on cross-border investment, which is of significance in some countries.

2.2 Data on market participants' exposures

2.2.1 Aggregate data

Data on the exposures of financial system entities to CRE come from many sources. First, the ECB and EIOPA regularly release certain information on the CRE-related exposures of banks, insurance companies and pension funds. Second, the regulatory templates applicable to banks (under the FINREP and COREP regimes) and the new templates which apply to alternative investment funds (AIFs) may provide insights into banks' and AIFs' exposures to CRE at a more granular level. Finally, regulatory templates under the Solvency II Directive, which will come into force in 2016, will include certain information on insurance companies' exposures to CRE. However, data on CRE are rather patchy and rarely consistent when provided by different sources.

Certain data on the CRE-related exposures of financial system entities are already available:



- EIOPA publishes data on the CRE-related exposures of insurance companies (including reinsurance corporations) on a country basis.²⁰ These exposures may be approximated from the data on “Lands and buildings” and “Loans guaranteed by mortgages”, notwithstanding that in the latter case, the relevant loans may be secured on either residential or commercial property. EIOPA also releases data on the exposures of occupational pension funds to CRE, either directly (see item 4.15 of the relevant spreadsheet for each country) or indirectly (see item 4.11).²¹ Figures are only available for a limited number of countries, as occupational pension funds do not exist in all jurisdictions.
- The ECB discloses data on banks as well as on insurance companies, pension funds and investment funds.
- The Securities Industry and Financial Markets Association (SIFMA) provides data on volumes of CMBS which are outstanding, on both an aggregated and country basis.²²

However, there is often a need for more transparency as regards the exact coverage of all of these data, what precisely they include, and other information necessary to enable comparative analysis.

Additional data may be released by alternative providers. These include, for example, the Organisation for Economic Co-operation and Development (OECD), which provides data on “institutional investors’ assets” (including those of investment funds). However, these data do not seem to be regularly updated, and may not be consistent with the aforementioned sources.

2.2.2 Granular data

More granular data from regulatory reporting can further improve our overview of the financial sector’s exposure to CRE. At least in the case of banks, insurance companies and investment funds, such information is theoretically available. It would be useful if European supervisory authorities would disseminate aggregated data gathered through the new regulatory templates, similarly to the way in which EIOPA already makes available information on (re-)insurance companies and pension funds.

2.2.2.1. Banks

With the exception of a very few countries,²³ data on banks’ exposures to CRE remain very scarce. The ECB’s comprehensive assessment has partially revealed the exposures of euro area banks to CRE, providing data on their holdings of real estate funds along with real estate-related loans to corporates, and the associated average LTV ratios (figures are given in Chapter 4 of the report).

²⁰ See the “EU/EEA (re)insurance statistics” on the “Financial stability” page of the EIOPA website, available at <https://eiopa.europa.eu/financial-stability-crisis-prevention/financial-stability>

²¹ See the “EU/EEA occupational pensions statistics” on the “Financial stability” page of the EIOPA website, available at <https://eiopa.europa.eu/financial-stability-crisis-prevention/financial-stability>

²² <http://www.sifma.org/research/statistics.aspx>, “Europe Structured Finance Addendum Tables (EUR)”

²³ These exceptions are: France (for which data is provided in the annual study by the Autorité de contrôle prudentiel et de résolution (ACPR) on exposures of banks to professionals (such as developers, investors, legal entities, companies, etc.) operating in the real estate market); and the United Kingdom (for which data is provided in the UK Commercial Property Lending Report (an annual survey by De Montfort University)).



Nonetheless, these data only provide a picture at a particular point in time, and do not allow regular monitoring of exposures of banks to CRE.

Some COREP and FINREP templates make it possible to draw a somewhat clearer picture of banks' exposures and of their risk profile, on an ongoing basis. First, exposure levels and their associated risks may be captured through the following templates²⁴.

- The F 18.00 template provides the total amount of loans and advances to non-financial corporations accounted for by CRE (line 140), along with the breakdown between non-performing and performing exposures, the accumulated impairments and the collateral and guarantees received. (The F 19.00 template provides similar information but only for the forborne exposures; however, the geographical breakdown of these exposures is not available.)
- The F 01.00 template provides the amount of investment property directly held by the bank on a quarterly basis (line 290); impairments (stock and flows) on investment property are also recorded in the F 16.07 template on a quarterly basis (line 120). The data cover only banking activities, hence insurance activities are excluded from the scope.
- The F 06.00 template provides the breakdown of loans and advances to non-financial corporations by NACE codes on a quarterly basis. For each sector, details are provided on gross exposures, non-performing exposures and impairments/provisions. Figures for the real estate sector (L;²⁵ line 110) could be regarded as proxies for CRE exposures notwithstanding that the F 06.00 template only provides on-balance-sheet exposures (loan commitments and financial guarantees are not recorded).
- For banks for which foreign exposures account for more than 10% of domestic and foreign exposures, the F 20.07 template provides a breakdown of the data from template F 06.00 by country on a quarterly basis.
- For banks for which foreign exposures account for more than 10% of domestic and foreign exposures, the F 20.04 template provides the geographical breakdown of assets by residence of the counterparty on a quarterly basis. Details are given for gross amount, forborne exposures, non-performing exposures and impairments. CRE can be more easily captured in this template, since it includes a specific line for exposures to non-financial corporations ("Of which: Commercial immovable property" (line 210)) but like the F 06.00 and F 20.07 templates, it only accounts for loans and advances – off-balance-sheet items are not recorded.
- Templates on large exposures (C 27.00 to C 29.00) provide detailed information on a set of beneficiaries (i.e. a group of linked counterparties). The information includes the NACE sector, overall exposure (including off-balance-sheet items), defaulted exposures, impairments and provisions, the split between banking and trading book exposures, and credit risk mitigation

24 Information on exposures to CRE can also be found in other FINREP templates (for example F 13.01, F 18.00, F 19.00, and others) not listed below.

25 Real estate activities comprise the following:

- buying and selling of own real estate;
- renting and operating of own or leased real estate;
- real estate agencies;
- management of real estate on a fee or contract basis.

(See Statistical Classification of Economic Activities in the European Community, Rev. 2 (2008), available at http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=NACE_REV2&StrLanguageCode=EN).



techniques. Exposures to CRE could be approximated through the data on counterparties belonging to the real estate (L) sector.

- The COREP template on exposures and losses from lending collateralised by immovable property (C 15.00) provides a geographical breakdown of both RRE and CRE exposures and the associated losses recorded over the last six months. However, it only covers exposures located in the EU.²⁶

Second, the following templates provide information on risk weights.

- Risk weights on exposures to retail small and medium-sized enterprises (SMEs) secured by real estate computed according to the internal ratings-based approach are available in templates C 02.00 (line 370) and C 09.02 (line 080).
- Risk weights on exposures to retail SMEs secured by real estate computed according to the standardised approach are available in template C 09.01 (line 095).
- Risk weights on exposures secured by mortgages on commercial immovable property computed according to the standardised approach (SA) can be found in template C 07.00 (line 290).
- Risk weights on exposures secured by real estate computed according to the alternative treatment of the IRB approach²⁷ are provided in template C 08.01 (“credit and counterparty credit risks and free deliveries: IRB approach to capital requirements”; line 160); the template comprises one folder for each regulatory portfolio (corporate, retail, etc.).

Finally, the forthcoming implementation of AnaCredit may provide valuable data on exposures of banks to CRE (see Box 3). However, as for the FINREP and COREP templates and certain Solvency II templates, CRE may need to be approximated through the “real estate activities” (L) NACE sector.

Box 3

AnaCredit: a potential future data source for real estate information

Throughout the EU a wide range of information on credit and credit risk data are available. The data are of interest for financial stability, supervision and macroeconomic analysis. These data are currently collected through several channels:

- central credit registers (CCRs): granular micro databases operated by national central banks (NCBs) providing credit information on a loan-by-loan and/or a borrower-by-borrower basis;
- private credit bureaus: databases containing credit data on natural and/or legal persons to assist creditors;

²⁶ According to Article 101 (2) of the CRR, “data should be reported for each property market within the Union separately.”

²⁷ Article 230 (3) of the CRR allows the application of a fixed 50% risk weight to the part of an exposure which is fully secured by a residential or real estate property.



- microcredit surveys;
- aggregate statistics.

Table 7
AnaCredit structure and timeline

	First Stage (March 2018)
Frequency	Quarterly (accounting data), Monthly (other data), Once with monthly/quarterly updates (static data)
Timeliness	For credit institutions resident in a reporting Member State: 30 working days (for monthly data) and 15 working days after ITS data (for quarterly data) For branches non-resident in a reporting Member State: 35 working days (for monthly data) and 20 working days after ITS data (for quarterly data)
Granularity	Loan by loan
Threshold	Exposures above €25.000 (at a borrower level, based on loans and undrawn credit lines); €100 threshold for non-performing loans
Borrowers	Exposures to all legal entities
Lenders	Credit institutions
Instruments	Loans, deposits, giving rise to credit risk

Assuming the successful completion of the draft Regulation, and after appropriate statistical and methodological work, it would be possible for this dataset to supply, at a monthly frequency and around one month after the period in question, data on both RRE and CRE loans. In the first stage, currently scheduled to begin in March 2018, this will cover credit granted by credit institutions to legal entities. In the future, the coverage may be extended to include other financial lenders as well as credit extended to natural persons to finance a house purchase. The ongoing work on AnaCredit will be monitored to ensure the requirements and concerns of the ESRB are reflected in the considerations underlying the establishment of the Regulation.

Regular dissemination of AnaCredit data related to CRE, aggregated at a country level, could be considered.

2.2.2.2. Insurance companies

Similarly to banks, insurance companies can be exposed to CRE and be affected by a downturn in the sector. Risk can arise from direct holding of property, ownership of stakes in property companies and/or REITs, and loans linked to CRE.

Insurance companies provide their respective authorities with a set of prudential and accounting information. Although supervisory frameworks are not at present harmonised across the EU, certain information may be available in each country on the total real estate exposures of insurance companies, and the vast majority of this exposure is likely to be related to CRE.



The coming into force of the Solvency II Directive in 2016 will make it possible to track the exposures of insurers to CRE on a harmonised and comprehensive basis (since most templates are to be submitted on a solo, but also consolidated, basis). Data on CRE exposures may be found in the templates as noted below; these templates form part of the common set of reporting documents.²⁸

- Balance sheet data (template S 02.01), which will provide, on a quarterly basis, the amount of direct investments in real estate, with the exception of property held for the insurance company's own use (which is reported on a separate line) and investments that are part of unit-linked contracts;
- Detailed inventory of assets (template S 06.02), which will provide, on a quarterly basis,²⁹ a very precise view of the insurance company's investment portfolio (excluding derivatives) on a quarterly basis. Exposures to CRE could be assessed on the basis of the following criteria:
 - NACE code (L, "real estate" sector); similarly to the EBA in relation to the FINREP and COREP templates, EIOPA has chosen to rely on identification of the economic sector in which the issuers of securities are active;
 - Complementary identification code (CIC): Each asset will be assigned a CIC that consists of a combination of the ISO code of the country where it is traded (XX in the list below),³⁰ a digit / letter that identifies the type of instrument, and a final digit that represents the underlying risk. In this way, CRE could be tracked through the following CICs:
 - XX91: offices and CRE
 - XX92: residential real estate
 - XX94: property under construction (for own use or investment purposes)
 - XX32: shares in real estate companies
 - XX45: funds mainly invested in real estate
 - XX55: structured products mainly exposed to real estate risk
 - XX65: guaranteed securities mainly exposed to real estate risk
 - XX84: mortgage loans
 - Structured products data – portfolio list, which will provide additional data concerning the type of structured product (CDS, CLN, RMBS, CMBS, etc.) already listed in template S 06.02. However, this template will only be required on a yearly basis for undertakings where structured products represent more than 10% of their total investments;

²⁸ National supervisory authorities may add national supplementary templates to this common set.

²⁹ Certain insurance companies will benefit from an exemption from reporting for the first three quarters and report only for the final quarter (the criteria for exemption are still to be determined, but this exemption will probably focus on the smallest corporations). They will nonetheless be required to submit a simplified template (S xx.yy) on a quarterly and solo supervision basis, and data on real estate exposures will be limited to investments in real estate funds with the exception of those referable to unit-linked or indexed contracts.

³⁰ In relation to assets that are not negotiated on a regulated market or on a multilateral trading facility, the CIC will begin with "XL". In relation to assets that are not tradable on a regulated market, the CIC will begin with "XT".



- Derivatives data – open position (template S 08.01), which may complement template S 06.02 by providing data on directly held derivatives (possibly linked to CRE, with the exclusion of derivatives included in funds or structured products). This template will be required on a quarterly basis, except in the case of insurance companies whose exposures to derivatives are not material, where it will only be required on a yearly basis;
- The look-through template will provide, on a quarterly basis, additional details on funds listed in template S 06.02 concerning type of underlying asset, main geographical area (EEA / OECD (excluding EEA) / rest of the world) and currency (local or foreign). The requirement to submit this template is subject to certain conditions (materiality of exposures, complexity of the risk profile, etc.).

Finally, certain other templates (Assets – D2T for derivatives; Assets – D3 for investment assets) provide data on the performance of assets.

2.2.2.3. Pension funds

There appear to be no standardised reporting requirements for pension funds at the EU level.

2.2.2.4. Other funding providers

Alternative investment fund managers (AIFMs) are required to regularly report information that may also be useful for CRE purposes. Under the provisions of Articles 3(3)(d) and 24(1) of Commission delegated regulation (EU) No 231/2013 of 19 December 2012 supplementing the AIFM Directive³¹, an AIFM is required to “regularly report to the competent authorities of its home Member State on the principal markets and instruments in which it trades on behalf of the [alternative investment funds] AIFs it manages. It shall provide information on the main instruments in which it is trading, on markets of which it is a member or where it actively trades, and on the principal exposures and most important concentrations of each of the AIFs it manages.”

Consequently, for each managed AIF, an AIFM must specify:

- the predominant AIF type (AIFs may be “real estate funds”);
- in relation to funds that include predominantly “real estate”, the real estate strategies that best fit with their activity (residential real estate, CRE, industrial real estate, multi-strategy real estate or other real estate strategy)

In addition, under the provisions of Article 24(2)(d),
 “An AIFM shall, for each of the EU AIFs it manages and for each of the AIFs it markets in the Union, provide the following to the competent authorities of its home Member State: (...)
 (d) information on the main categories of assets in which the AIF invested (...).”

Reporting templates include several lines relevant to real estate:

³¹ Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers.



- physical real estate long value (apportioned between “residential real estate” and “CRE”);
- physical real estate market value (no breakdown).

Moreover, (real estate) funds are able to invest in other funds related to real estate, thus creating a (further) indirect link with the real estate sector. There are no regularly reported data available on this aspect on a “look-through” basis.

2.2.2.5. REITs

As listed companies, the largest REITs are required to release figures on their asset portfolios (composition, rents, valuations, etc.) on at least a yearly basis. In addition, they usually also disclose information on the financial covenants to which they are subject (LTV, ICR, encumbrance, etc.). However, financial reports are not necessarily standardised and no summary of the available information seems to be available so far. Names of the largest European-listed REITs can be found in the FTSE EPRA/NAREIT Europe index.³²

2.3 The CRE questionnaire

A questionnaire was designed to collect information on commercial real estate markets and financial sector positions in each country. The questionnaire was deemed necessary given the patchiness of certain existing public and private data sources, and to obtain a more precise picture of CRE markets and their associated risks. It was circulated among the 19 Member States which participated in the Expert Group on Real Estate.

The questionnaire included a selection of indicators deemed relevant from a financial stability perspective. It comprised three main sections.

a) The physical market

- **General information covering:** the definition of CRE used at the national level; the contribution of construction and CRE activities to total value added, employment and GDP; the geographical structure of national CRE markets (e.g. which may be concentrated around a limited number of cities); recent changes in, and prospects for, building permits and construction starts; and the main drivers of supply and demand.
- **Specific features of CRE markets such as:** the total size and value of property stock; a breakdown of property stock by investor type and property type; annual transaction volumes and the proportion involving foreign investors, as well as a breakdown by investor and property types; the existence of national official price indices and records of property transactions; the existence of specific accounting rules addressing property valuation; and any features of the

³² The FTSE EPRA/NAREIT Europe index (edition of 19 August 2015) is available at <http://www.ftse.com/analytics/factsheets/Home/DownloadConstituentsWeights/?indexdetails=ENHU>



national regulatory framework (legal, fiscal, etc.) that may amplify the consequences of a CRE crisis.

- **Property risk indicators:** prices, rents and vacancy rates.

b) Exposures of the financial system

The aim was to collect data on exposures to CRE of banks, insurance companies, pension funds, investment funds and other financial institutions, both directly and indirectly.

- **In the case of banks:** the outstanding exposure amounts (direct exposures included credit and loan commitments, financial guarantees and other commitments given), and those amounts as a percentage of total assets, total loans and total CET1 capital; the proportion of investment grade exposures; the proportion of international exposures; financial risk indicators (the proportion of floating rate loans, average remaining maturity, average LTV, average interest coverage ratio, risk weights, impaired exposures, provision amounts and forborne exposures); the flow of new credit, and loan and guarantee commitments, and relevant risk indicators (similar to those referred to above relating to outstanding exposures) and changes in lending standards.
- **In the case of insurance companies, pension funds and investment funds:** the outstanding exposure amounts (both direct and indirect); the proportion of investment grade exposures and of international exposures; and total exposures as a percentage of total assets and total own funds.
- **Additional information collected:** the total outstanding market debt related to CRE; and total outstanding derivatives related to CRE.

c) Macroprudential measures

The aim was to collect details of measures which designated or competent authorities may have taken in the past to tackle risks arising from CRE markets.

The information gathered through the questionnaire was helpful in filling some of the identified data gaps. However, only limited additional data were collected, particularly on risk indicators (Table 8).

Table 8
Example of responses to survey on CRE

Country	AT	BE	DE	DK	ES	FI	FR	GR	HU	IE	IT	LT	NL	PL	PT	RO	SE	SI	UK
Average LTV on stock of credits (%)					83.6								97			151			87
Average LTV on new credits (%)																70.69		55	62

Source: CRE questionnaire.

Note: grey cells indicate missing data.



Annex 3

National experiences of CRE crises

Nordic countries – Norway and Sweden (1990-1993)³³

Norway and Sweden experienced a real estate-based credit boom during the 1980s. The boom was a result of credit deregulation (liberalisation of the credit market) accompanied by an upward economic cycle and a favourable tax and interest rate environment. In Norway, the majority of real estate loans granted during the period of the boom were related to residential property, while in Sweden the majority were over commercial property. The rising demand for real estate led to a significant growth in prices, which resulted in higher collateral values for financial institutions. By the beginning of the 1990s, increasing vulnerability in the two economies and an upward movement in interest rates (caused by tight monetary policy to protect the fixed exchange rate) were evident. In addition to the unfavourable macroeconomic conditions, changes in tax policy brought an end to support for lending, causing a decline in demand for real estate. The fall in demand, coupled with decreasing collateral values, resulted in significant losses for the financial sector. In the case of Sweden, bad loan provisions relative to total assets rose to 3% per annum. Three Swedish banks received government support to safeguard financial stability.

Ireland (2007 onwards)³⁴

Until late 2007, the Irish commercial property market grew rapidly, driven by strong demand. The capital value of commercial real estate increased by 70% during the five years up to September 2007 (Chart 32) – the peak of the market. This substantial growth in capital values was not matched by similar large increases in rents, so that yields on all types of commercial real estate decreased to low levels. Transaction volumes were particularly high before the crisis; EUR 3.6 billion in 2006, compared with the annual average of EUR 768 million between 2001 and 2004. Moreover, demand was not only strong for prime assets, but also for secondary and tertiary ones, and the increase in demand could be observed in all segments. In addition, the rental market prior to 2007 had been booming. In response to the higher demand from occupiers, large office constructions were commenced and the stock of office space to let increased by 33% between 2004 and 2008.

The CRE market was predominantly financed by domestic banks, UK banks and several other European banks; international investors had a limited presence in Ireland during this period. From a financial stability perspective it is important to note that, along with the strong market, commercial real estate-related lending had also been growing at a rapid rate prior to 2007.

When the crisis hit in late 2007, the proportion of non-performing real estate loans became high (a trend that was also observed for other loan portfolios) and banks required urgent recapitalisation. The National Asset Management Agency (NAMA) was established by the Irish Government in order to take

33 Sources: "Commercial Property Markets – Financial stability risks, recent developments and EU banks' exposures", ECB, Frankfurt am Main, December 2008, available at <https://www.ecb.europa.eu/pub/pubbydate/2008/html/index.en.html>; and "Asset Prices and Banking Stability", ECB, April 2000, available at <https://www.ecb.europa.eu/pub/pdf/other/assetpricesen.pdf>

34 Sources: Joint Committee of Inquiry into the Banking Crisis, Houses of the Oireachtas, Volume 1, No. 17, Thursday, 2 April 2015; D'Arcy É., "The Irish Experience – The National Asset Management Agency (NAMA)" (presentation to the Third International Conference on the Real Estate Market: "Commercial property market indices and Strategic actions for distressed property assets in Greece" held in Athens on 13 March 2015).

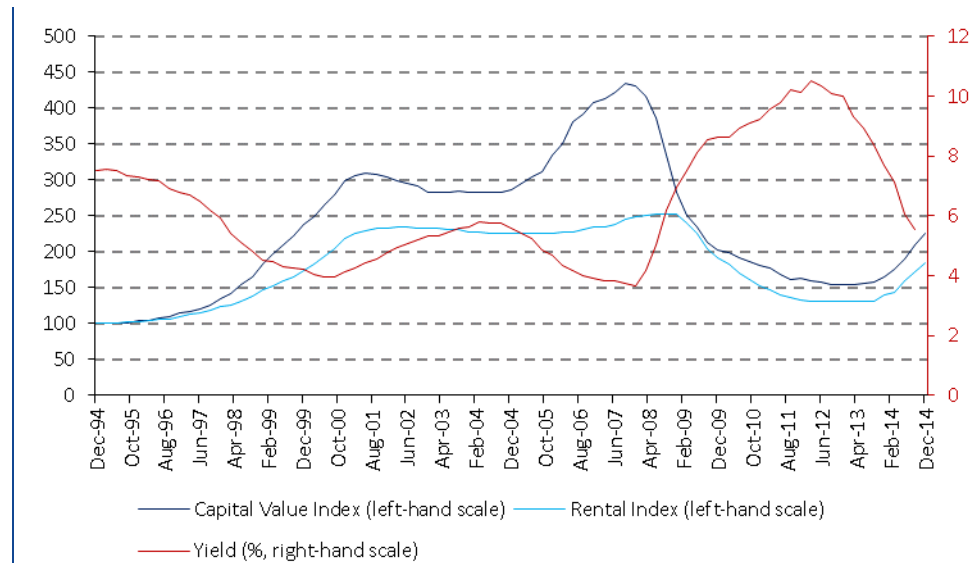


on the role of a “bad bank” and was a key element of the solution to the banking crisis. NAMA took over mostly non-performing real estate-related loans from banks’ balance sheets, with the effect that bad assets did not continue to contaminate the remaining performing portfolios. NAMA took over a CRE-related portfolio of EUR 74 billion at a discount of 57%. The pricing of the assets that were taken over by NAMA was based on their potential long-term economic value, which effectively meant an indirect recapitalisation of banks.

Chart 32
Capital value, rents and yields in the Irish office market

(Index)

(Percentage)



Source: MSCI.

United Kingdom (1973-1975; 1990-1994; 2007 onwards)³⁵

Commercial real estate played a key role in the recent financial crisis in the United Kingdom. This was the third large swing in UK commercial real estate valuations over the past half-century, each being associated with a large build-up in CRE lending and a subsequent period of deleveraging.

A boom in the late 1980s – the second of these boom/bust episodes had been characterised by a rapid increase in debt levels and property valuations. CRE lending relative to nominal GDP more than doubled and real estate valuations increased by around 30% (Chart 33). A significant growth of small banks could be observed in this period, while their loan books became highly concentrated in respect of CRE-related portfolios. When the bubble burst, prices fell by over a third, and there was a “near crisis” with 25 banks failing or closing down. Losses on commercial real estate lending were also a key feature of bank failures and closures in the other two boom/bust episodes.

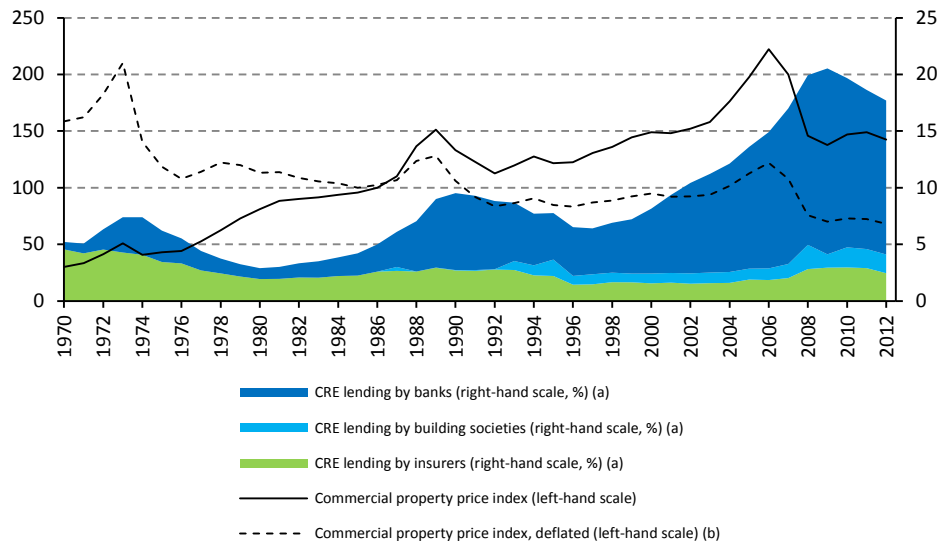
³⁵ Source: the Bank of England.



Chart 33
UK commercial property debt and valuations

(Index)

(Percentage)



Sources: Association of British Insurers; Bank of England; Building Societies Association; Investment Property Databank; ONS; Bank of England calculations.

Notes: 1986 = 100 for the commercial property price index;

(a) refers to the stock of outstanding lending; and (b) means deflated using GDP deflator.

The backdrop to the recent crisis involved yet another build-up in valuations and debt levels, with CRE lending exceeding 20% of annual nominal GDP, double the previous peak. By the end of 2007, CRE loans accounted for more than a third of the stock of lending to UK private non-financial companies by UK-resident banks.

While low long-term interest rates played a role in explaining the rise in commercial real estate prices, other factors were perhaps more important, such as rising leverage, maturity mismatch and irrational exuberance on the part of both investors and lenders. The late 1990s and early 2000s saw the market share held by traditional, long-term, unleveraged investors primarily insurance companies and pension funds decline in the face of the rapid growth of investment funds. Lending to CRE funds grew very rapidly in the period 2002–08, driven almost entirely by banks, suggesting an easing of bank credit conditions. When property prices started to rise, CRE firms' equity increased, further easing their access to credit and creating a positive feedback loop between commercial real estate prices and lending to commercial real estate companies.

As the crisis unfolded, valuations fell sharply, with real commercial property prices almost a half lower than their 2007 peak by the end of 2012. The presence of short-term investors hoping for capital gains, and their investment via leveraged and open-ended funds, likely exacerbated the decreases in real estate prices. As fears about US real estate market developments spread around the world in 2007, there was a sharp reduction in credit supply to UK CRE firms, as partly evidenced by the falling LTV limits and rising margins on lending. The reduced access to finance undermined the ability of potential buyers to purchase property as investors started to sell. And while long-term investors could choose not to sell when prices began to fall, open-ended funds that offered liquidity to their investors were faced with large redemptions, forcing them initially to run down reserves and sell investments in REITs



(exacerbating the fall in REIT prices) and then real estate, but in some cases also to suspend redemptions.

The consequent bust led to a sharp rise in non-performing bank loans. After the crisis broke, the amount of CRE debt written off each year rose sharply, with — in aggregate — around 6% of the stock of CRE debt of the UK banks being written off between 2008 and 2012. A Financial Services Authority (FSA) survey in 2011 suggested that around a third of the outstanding stock of commercial real estate loans were in some form of forbearance, where the lender had waived loan covenants, such as LTV requirements, or relaxed interest and repayment requirements, to make it easier for borrowers to service the debt.

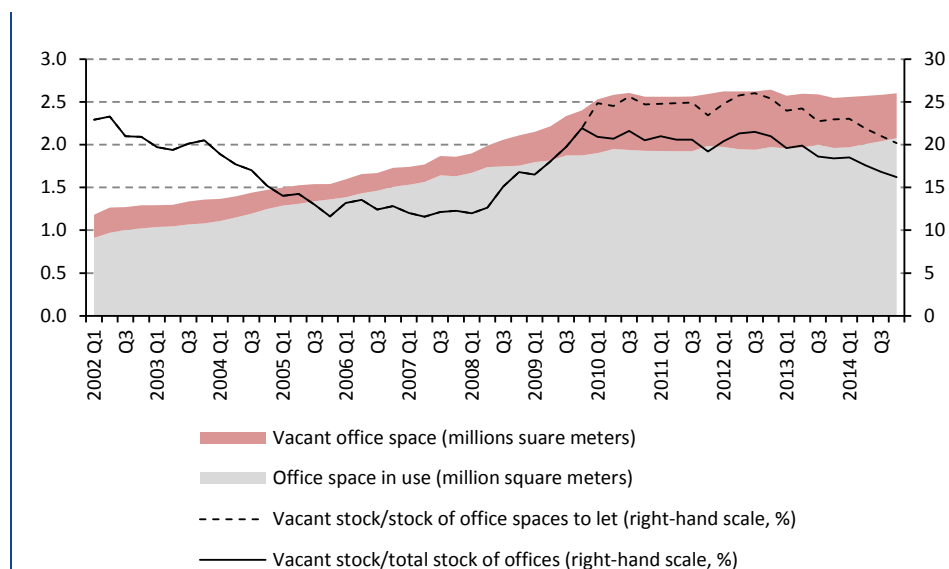
Hungary (2008 onwards)³⁶

The Hungarian CRE crisis, which started at the end of 2008, is strongly linked to the global financial crisis and the macroeconomic downturn of 2007-08. Financial stability issues arose mainly through the impact on the quality of bank assets. Banks had built up significant CRE-related portfolios in the 2000s. When the crisis hit, vacancy rates for commercial real estate grew rapidly, doubling by early 2010 (Chart 34). The quality of CRE-related bank assets deteriorated significantly. The NPL ratio of CRE loans was 26% in the fourth quarter of 2014, which was higher than the NPL ratio of non-CRE-type corporate loans (around 10%) in the same period. Non-performing CRE-related loans remain “stuck” on the balance sheets of banks, and because of slow portfolio cleansing, remain a drag on their profitability.

Chart 34
Stock and vacancy rate of offices for let in Budapest

(million m²)

(percentage)



Source: JLL.

36 Source: Magyar Nemzeti Bank (the central bank of Hungary).



The Netherlands (2008 onwards)³⁷

In the Netherlands, the commercial real estate market was booming throughout the 1990s and 2000s, until the crisis hit in 2008. However, office real estate had been underperforming already since 2000; prices did not rise as fast as in other sectors, and vacancy rates had been increasing from 2000 onwards. Nevertheless, banks granted a large number of loans during this period, often on generous conditions. SNS Reaal in particular, and also Rabobank, entered this market relatively late in the cycle. SNS Reaal, after taking over Bouwfonds Property Finance from ABN Amro in 2006, ran into trouble during 2012 and 2013 and had to be nationalized as a consequence of losses on commercial real estate. Rabobank finally incurred losses of over EUR 800 million in 2013 (on a portfolio of EUR 36 billion) and was forced to increase its capital and provisions for CRE by around EUR 600 million as a result of the ECB's comprehensive assessment.

³⁷ Source: De Nederlandsche Bank (the central bank of the Netherlands).



Annex 4

National experiences of macroprudential policies targeting CRE

Croatia

In 2014, Hrvatska narodna banka (Croatian National Bank (CNB)) issued a recommendation to credit institutions in which it expressed its opinion that commercial real estate in Croatia does not satisfy the conditions regarding liquidity of credit protection prescribed by articles 194 and 208 (paragraph 2) of the CRR, as data collected by the CNB had shown that the market is not sufficiently liquid. Therefore, CNB was of the opinion that credit institutions should harmonise their standards and should not apply a 50% risk weight to exposures secured by commercial real estate until the market becomes more liquid and the effectiveness of the process of forced data collection is satisfactorily improved.

Denmark

New rules were implemented by Finanstilsynet (the Danish FSA) in 2014 requiring mortgage banks to extend CRE loans only to borrowers who have positive cash flows. The rules can be disregarded if the bank is able to substantiate that the loan is sound (for example by providing sales contracts or rental agreements as evidence of expected future cash flows).

Hong Kong³⁸

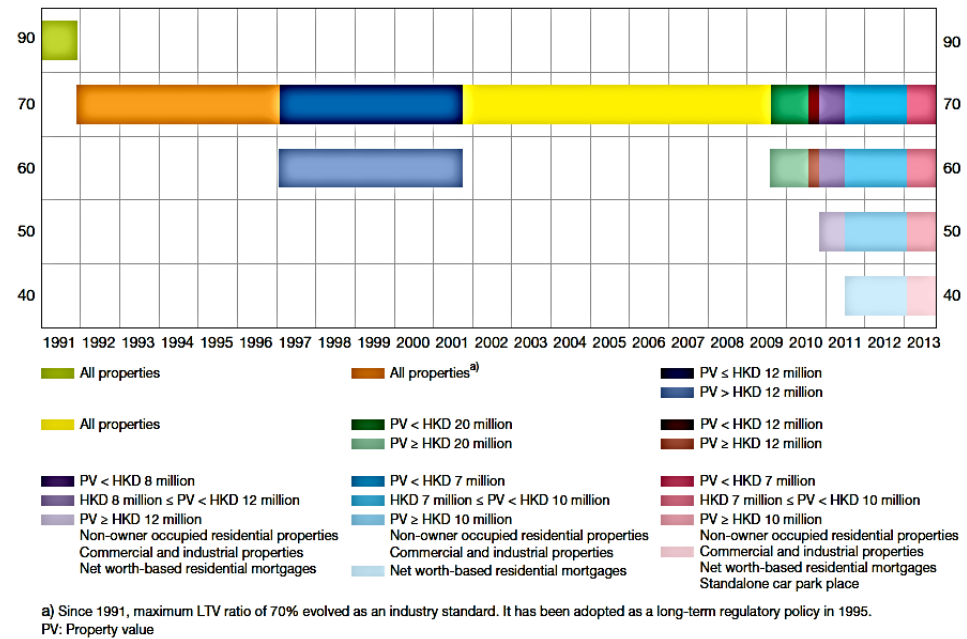
In 1991 Hong Kong implemented an LTV policy as a tool to mitigate the amplification of the credit/asset price spiral, and to protect banks from the disruptive effects of real estate crises. Initially targeted at all real estate and set at 90%, the LTV limit has successively been lowered and refined according to the type and value of the real estate and the income source of the loan applicants (i.e. from within or outside Hong Kong) (see Chart 35). LTV caps were tightened again in February 2013 and can be as low as 20% for loans for commercial and industrial real estate purchased by borrowers who have previously entered into a mortgage and whose income is derived from sources outside Hong Kong.

38 See information from the Hong Kong Monetary Authority, available at <http://www.hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/2013/20130222e2.pdf>, and <http://www.bis.org/publ/bppdf/bispap57k.pdf>



Chart 35
LTV policy in Hong Kong – maximum LTV

(percentage)



Source: Hong Kong Monetary Authority (HKMA).

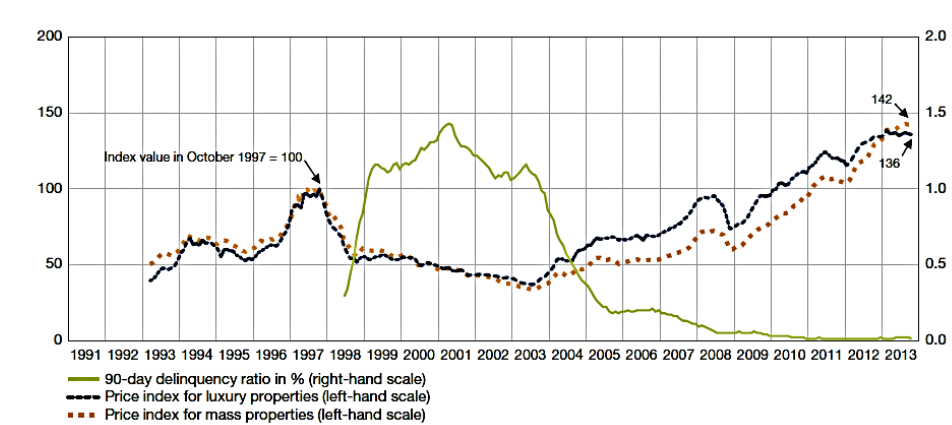
Note: LTV cap tightening for mortgage applicants whose principal income is not derived from Hong Kong and for applicants with multiple mortgages is not shown in the chart.

These measures appear to have had a positive impact on bank delinquency, as evidenced by Chart 36 however, their impact on price developments is less obvious.

Chart 36
Hong Kong real property price index (1997=100) and mortgage delinquency ratio (% of all mortgage loans)

(Index)

Delinquency ratio (%)



Source: HKMA.



Box 4

The Indian experience³⁹

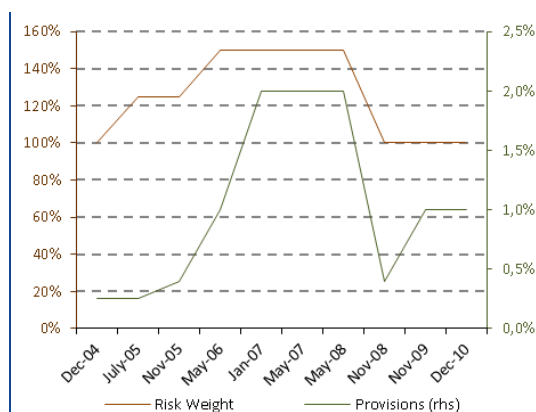
In the mid-2000s, during the pre-crisis period, the Indian authorities raised risk weights for CRE to 150% from 100% and provisioning requirements to 2% from 0.25% (see Chart 37). As Chart 38 shows, these two measures helped moderate the flow of credit to the CRE sector. Annual credit growth decelerated from around 150% in late 2005 to around 50% by 2008. At the same time, the Reserve Bank of India (RBI) tightened monetary policy to contain aggregate demand and overall credit growth in the economy. In the downturn of 2008-09, the authorities decreased CRE risk weights to 100%, and provisioning requirements to 0.4%. Despite these measures and an easing of monetary policy, credit growth slowed substantially as a result of, inter alia, subdued credit demand and risk aversion by banks.

In late 2009, the CRE provisioning coverage ratio was increased to 70% of gross non-performing loans, with a view to augmenting the provisioning buffer in a countercyclical manner. This was intended to be an interim measure, to be replaced by a forward-looking countercyclical provisioning methodology being developed internationally.

In summary, the RBI used monetary and macroprudential policies as complements to each other to ensure both price and financial stability. As such, it is difficult to isolate the effect of the countercyclical policies described above. Nevertheless, the RBI considers that varying the provision requirements was arguably more effective than varying the risk weights, as banks were operating at higher than minimum capital requirements. The effectiveness of countercyclical policies was not significantly diluted through leakages, because: a) foreign bank branches operating in India are subject to local capital requirements; b) direct cross-border financing is limited as India does not have a fully open capital account; and c) the financial system is dominated by banks.

**Chart 37
Risk weight and provisioning requirements for CRE (India)**

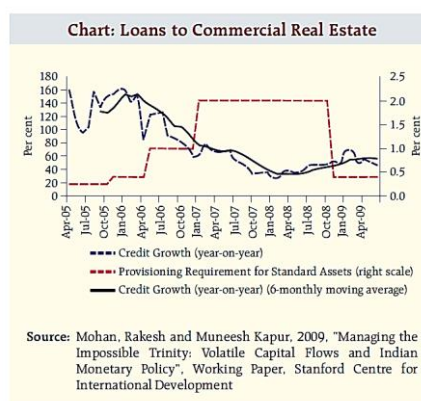
(percentage points)



Source: RBI Monthly Bulletin July 2011, Macroprudential Policies: Indian Experience.

**Chart 38
CRE-related loans (India)**

(percentage points)



Source: Mohan, Rakesh and Muneesh Kapur. 2009...

39 For more details see the speech by Anand Sinha, Deputy Governor, Reserve Bank of India, p 1061-1073 of the RBI Bulletin July 2011, https://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/11_SPB072011.pdf



Ireland

The strong growth in lending, the profitability of the banking sector and changes in accounting and provisioning practices brought about by the International Financial Reporting Standards (IFRS) process led to the decision that the risk weighting applied by credit institutions to Irish residential mortgages should be increased. Speculative real estate loans were added to the class of lending that attracted a higher capital surcharge, concurrently with the introduction of the CRD IV. Discretion was applied to include speculative real estate development lending, as this was deemed to be a high-risk category. The LTV thresholds for high-risk lending are 80% for mortgages secured by RRE and 50% for mortgages secured by CRE. Mortgages with LTV ratios above these thresholds may be granted, but those with LTVs below the thresholds benefit from a more favourable risk weighting.

Under Article 124(2) of the CRR, exposures associated with particularly high risks were assigned a 150% risk weight. Given the economic conditions prevailing at the time the CRD IV was introduced, it was determined that speculative CRE lending involved a higher risk and therefore should be subject to the higher capital surcharge.

Luxembourg

Luxembourg imposed a limit on exposures to real estate development as a share of capital, in accordance with the Commission de Surveillance du Secteur Financier (CSSF) Circular 12/552.⁴⁰

Netherlands

In 2013 De Nederlandsche Bank (DNB) performed an Asset Quality Review of the three largest Dutch banks, which resulted in stricter supervisory requirements and better valuation practices by banks. This included higher loss provisioning, increased Pillar II capital requirements and the requirement to value collateral independently at least every three years. Additionally, an industry initiative has established rules of conduct applicable to real estate appraisers.

Norway⁴¹

Finanstilsynet (the Norwegian FSA) is consulting with the EBA on setting risk weights of 100% for CRE lending for banks using the standardised approach. These banks tend to be small, with lending concentrated in rural areas, making it difficult for them to evaluate Article 126(2) a-b of the CRR (and to value real estate accurately). This is a continuation of the previous policy, which was originally implemented in 1989. The opportunity to set lower risk weights has been repeatedly rejected after thorough analysis. Losses on Norwegian CRE have been high in the past (particularly in the period 1988-92). One reason for taking action is that the Norwegian economy is vulnerable to a negative oil price shock – a very relevant concern at present.

Poland

The Polish Financial Supervision Authority recommended that the maximum LTV applicable to newly granted CRE loans should not exceed 75% (this can be increased to 80% if the proportion above 75%

⁴⁰ See Commission de Surveillance du Secteur Financier (CSSF) Circular 12/552, available at http://www.cssf.lu/fileadmin/files/Lois_reglements/Circulaires/Hors_blanchiment_terrorisme/cssf12_552eng_upd241114.pdf

⁴¹ Consultation on template for Article 124 CRR.



is secured by a deposit or government bonds). The regulation following this recommendation became effective in 2014.

Romania⁴²

The National Bank of Romania is consulting with the EBA on risk weights of 100% for CRE lending. This is a continuation of the approach up until now, which applied a risk weight of 100% for CRE exposures from 2006, with the implementation of Basel II. The continuation of the measure is proposed because 25% of loans were non-performing as of June 2014, and this percentage is higher than one year previously. LGDs remain high (estimated at 60%), as do PDs. Activity in the construction and real estate sectors is currently at low levels. In addition, CRE makes up 72% of loans to corporate borrowers.

Singapore

In January 2011 the LTV was set at 50% on housing loans for purchasers of property who are not individuals.

Turkey

In January 2011, the LTV for CRE loans was restricted to 50%.

United Kingdom

A “slotting” regime was introduced in 2011, whereby loans are required to be placed in buckets of riskiness with varying risk weights. This has probably contributed to the relative conservativeness of domestic banks in the current cycle, as risky lending such as those related to commercial real estate receive a higher risk weight.

In November 2012, the interim Financial Policy Committee (FPC) recommended that the UK Financial Services Authority take action to ensure that the capital of UK banks and building societies reflects a proper valuation of their assets (and a realistic assessment of future conduct costs and prudent calculation of risk weights). The FSA assessed the losses that might be expected to arise over the following three years on a range of banks’ most risky assets, including CRE loans, forbore retail loans and vulnerable euro area assets. It concluded that a conservative valuation of these assets, which included UK CRE, would be around GBP 30 billion less than the balance sheet valuations of these assets, net of existing provisions, for the banks included in the FPC’s capital exercise.

In December 2013, stricter criteria for eligibility were introduced for assigning the 50% risk weight to exposures fully and completely secured by mortgages on commercial immovable property located in the United Kingdom, depending on annual average loss rates over a representative period – that is, an institution may treat exposures as fully and completely secured by mortgages on commercial immovable property located in the United Kingdom only in those cases where annual average losses stemming from such lending did not exceed 0.5% of risk-weighted exposure amounts over a representative period; the loss level should be calculated by an institution on the basis of the aggregate market data for commercial real estate lending published by the Prudential Regulation Authority, and a

42 Consultation on template for Article 124 CRR.



representative period is defined as a time horizon of sufficient length which includes a mix of good and bad years.

In October 2014, stricter criteria were introduced for eligibility for assigning the 50% risk weight to exposures fully and completely secured by mortgages on commercial immovable property located in a jurisdiction that is not an EEA country, depending on annual average loss rates over a representative period.

United States⁴³

In the mid-2000s, US federal bank regulatory agencies became alarmed by steadily increasing concentrations of CRE loans at many banks, particularly loans for construction and land development (CLD). In January 2006, they issued guidance that required banks with specific high concentrations in those asset classes to tighten managerial controls.⁴⁴ The guidance required management at banks making CRE loans to devise an “overall CRE lending strategy” that included both minimum underwriting standards for individual loans and a detailed approach for managing the total CRE portfolio. Furthermore, banks with total CRE relative to total risk-based capital exceeding 300% or total CLD loans relative to total risk-based capital exceeding 100% (deemed highly concentrated by regulators) would be subject to enhanced oversight and analysis, as well as to potentially increased capital requirements.

Banks with concentrations in excess of the thresholds stipulated in the guidance subsequently experienced slower growth in their CRE portfolios, highlighting the potential for this type of macroprudential regulation to have a significant and broad impact on bank behaviour. The effect of CRE concentration in this lending category was markedly different after the guidance was issued than before, suggesting that a causal effect of the guidance can be inferred. There were arguably causal effects on various other types of lending, for example, other commercial lending was weaker, while household (mortgage and unsecured) lending was stronger.

43 Based on a staff working paper in the Finance and Economics Discussion Series (Divisions of Research & Statistics and Monetary Affairs, Federal Reserve Board, Washington D.C.) entitled “Assessing Targeted Macroprudential Financial Regulation: The Case of the 2006 Commercial Real Estate Guidance for Banks” by William F. Bassett and W. Blake Marsh, dated 12 June, 2014, available at <http://www.federalreserve.gov/pubs/feds/2014/201449/201449pap.pdf>.

44 CRE was broadly defined by the guidance to include: loans related to construction and land development; non-farm, non-residential properties that are non-owner occupied multi-family properties; and loans whose repayment was dependent on cash flows derived from the property but not secured by it.



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