DET SYSTEMISKE RISIKORÅD

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**Discussion paper**

# Initiatives and Indicators for the Property Market

## 1. Introduction

**The Systemic Risk Council, the Council, will examine initiatives that could be relevant if the current growth in property prices in parts of the Danish property market continues and when such initiatives should be implemented.**[1] High positive growth rates in property prices increase the risk of a subsequent plunge, with potential systemic implications. A key lesson from the financial crisis is that sharp drops in property prices can have serious implications for the financial system and the real economy. After the financial crisis in 2008, a number of countries have supplemented their economic policies with initiatives such as targeted capital requirements for credit institutions and minimum requirements for credit institutions' loan terms for households and businesses, see annex B. These initiatives have been introduced to help to ensure that the financial system contributes to a stable development of property market prices in the future. However, these initiatives cannot stand alone and they should be seen as part of other policy measures, including property taxation, rent controls, and construction regulations. Those policy areas go beyond the mandate of the Council.

**This discussion paper is designed to gather opinions on new initiatives to address systemic implications of developments in the property market.** House prices in the larger cities of Denmark as well as prices of large residential properties have been increasing in recent years, and real prices of owner-occupied flats are close to the 2006 peak. Recently, the Danish Financial Supervisory Authority has introduced initiatives such as down payment requirements for home purchases and a requirement stating that loans for mortgaging of commercial properties may be granted only if the properties generate positive liquidity. These requirements are to promote prudent lending policies for home purchases and commercial property purchases. It is too early to determine their significance for price developments and risk-taking in the future. The work of the Council is to investigate whether, and if so when, further initiatives should be taken and the most appropriate way of doing so. The desired effect of the initiatives would be a lower probability of a systemic crisis – or that the costs associated with a systemic crisis would be lower. The price would be that some households and businesses, for example, would be restricted in leveraging as heavily as they otherwise would have.

## 2. Systemic risks associated with high property prices

**Sharp drops in property prices can have serious implications for the financial system and the real economy.** A sharp drop in property prices may occur without a preceding "price bubble", for instance as a result of a strong increase in interest rates. A price fall could have systemic implications if it concerns a considerable share of the market and if a substantial part of the lending has been secured on properties that have lost value.

**Any possible future drop in property prices could take a quite different path from what historical experience has shown, but past experience may still shed light on possible implications.** As a case in point, Danish

1 See http://risikoraad.dk/nyhedsarkiv/nyheder/2016/jun/press-release-after-fourteenth-meeting/.

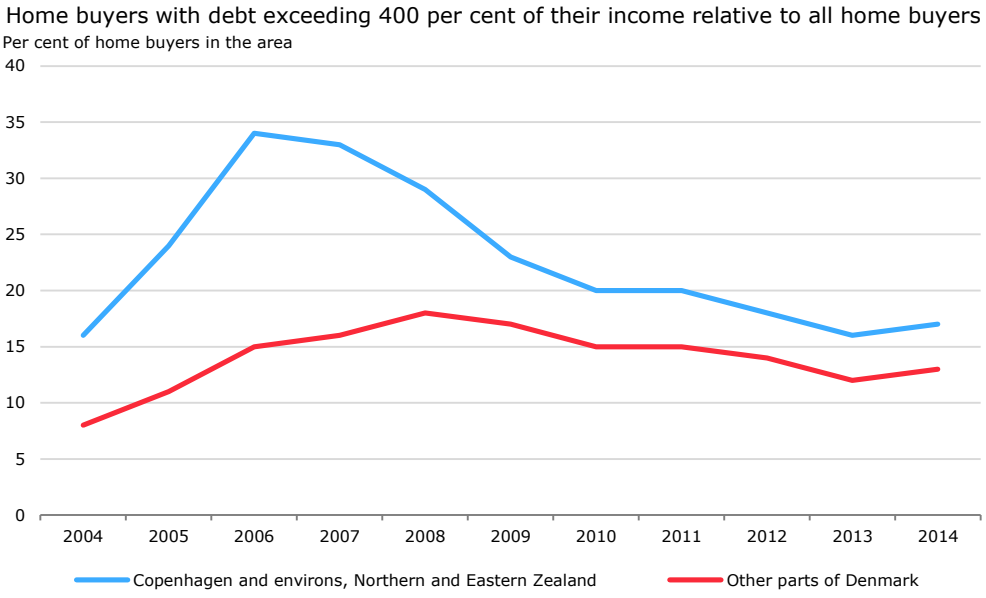
banks suffered substantial losses on commercial properties, in particular, when property prices plummeted in 2008 and the following years.[2] At the same time, the prior surge in household leverage may have amplified the economic downturn because households consolidated in response to decreasing housing wealth. Analyses show that highly leveraged Danish households tend to subsequently reduce their consumer spending more than less indebted households.[3] Moreover, investment by Danish firms may be reduced, since the property values on which loans for investment may be secured, decline.[4] Doubts about the resilience of the financial system can also make it more expensive and difficult to obtain loans, thus amplifying an economic downturn. During the crisis, a number of factors – Danish as well as international – influenced developments, and the Danish government stepped in to acquire and resolve distressed banks, provide guarantees to the sector, capital injections and extraordinary liquidity measures to mitigate the consequences. In the Council's terminology, systemic risks associated with excessive credit growth and leverage are the most relevant in terms of property market developments.[5] Annex A describes how a sharp drop in property prices can have systemic implications for the financial system and the economy.

**When property prices go up – and when they go down – the financial system may have an inexpedient self-reinforcing effect on price developments.** When the economy is growing, the prospects for future developments tend to be viewed with increased optimism. If such optimism turns into risk illusion or excessive risk appetite, it may become a systemic problem. The result could be collective underestimation of risk because people have short memories and financial crises are rare events.[6] Moreover, intense competition and shareholder pressures may increase the likelihood of excessive risk appetite among credit institutions. This could result in easing of credit terms beyond what is warranted by economic trends. In Denmark, the percentage of home buyers with high loan-to-income, LTI, ratios increased in the years leading up to the financial crisis, see Chart 1. Some home buyers leverage themselves to the hilt in order not to miss out on opportunities. At the same time, higher house prices mean higher home equity, resulting in added purchasing power for existing homeowners. This increases their ability to bid up house prices, and some people acquire properties in the expectation of further gains. Conversely, when house price developments revert, extra caution on the part of lenders, home buyers and property investors can contribute to amplifying an economic downturn beyond what is warranted by economic fundamentals.

**Financial initiatives targeted to the property market seek to cushion these self-reinforcing effects.** A few risky loans do not pose a threat to financial stability as such. Risky loans only have potential systemic implications when they become more prevalent.

2 Danish Financial Supervisory Authority (2014).
3 See Andersen, A. L. et al. (2016).
4 In the UK, every 10 per cent fall in commercial real estate prices is assessed to be associated with a 1 per cent decline in investment, as the possibilities of using commercial real estate as collateral to access finance for investment are reduced. See Bank of England (2016).
5 Other relevant triggers of systemic risks such as excessive maturity transformation and large exposure concentrations are not considered here. See Systemic Risk Council (2014) for a description of such mechanisms.
6 See ESRB (2013).

Prior to the financial crisis, a larger percentage of home buyers were granted large loans relative to their income – a high debt-to-income, DTI, ratio. Chart 1




Note: Home buyers are defined as all families in a given year that have moved house and still have mortgage debt. The family's total debt load is calculated relative to their gross income in the following year. The data point for 2014 is based on a projection.
Source: Danmarks Nationalbank (2016).

## 3. Potential initiatives address different property-related risks

**Relevant initiatives in the financial area include capital requirements and loan term requirements.** A number of initiatives in the can be used to address systemic risks.[7] Among these initiatives, capital requirements and loan term requirements can be targeted to the systemic risks associated with the property market as described in section 2. However, other initiatives such as restrictions on maturity mismatches and large exposures can also impact the build-up of systemic risks associated with the property market.

**The initiatives can be implemented when systemic risks are assessed to be building up or as permanent framework conditions.** Reflections on what may guide the assessment of the need for initiatives are discussed in section 4.

**These initiatives affect only the financial sector's impact on price developments in the property market.** A number of other policies such as rent legislation, tax policy and building regulation are also important elements for a stable development in the property market. Thus, financial sector initiatives are to ensure that the financial sector contributes to stable property market developments. The initiatives cannot be expected to control price developments.

### 3.1 Capital requirements increase credit institutions' buffers against losses

#### *Specific capital requirements*

**Capital requirements for credit institutions can be targeted to property exposures to prevent unexpectedly large losses on exposures from impeding the financial system's capacity to offer loans.** Additional capital requirements can be formulated to apply only to credit institutions' property

7 See Systemic Risk Council (2016a) for an overview of initiatives in the financial area.

exposures. This could be relevant if the risk of loss on such exposures is underestimated. The better the buffer against losses, the lower the risk that a drop in property prices will trigger an actual credit crunch. A credit crunch may occur if the overall lending capacity of credit institutions is constrained by low capitalisation, thus amplifying a downturn. Varieties of specific capital requirements for housing loans have been introduced in Sweden, Norway, Finland, Belgium and Switzerland.[8] Moreover, Sweden, Norway and Ireland have introduced specific capital requirements targeted to commercial property-related loans.

**The residential housing market and the market for commercial properties entail different potential risks for the financial system.** Credit institutions' housing loans to households are twice the amount of commercial property-related loans – DKK 1,600 billion relative to DKK 800 billion. But e.g. the valuation of commercial properties is more difficult, since commercial properties are far more heterogeneous.[9]

**Targeted capital requirements can be determined based on loss history supplemented by assessments of how e.g. changes in credit conditions may impact future developments.** Specific requirements can be introduced in the form of requirements for credit institutions' calculation of exposure risk, i.e. risk weights on exposures.[10] The risk weights should reflect the institutions' potential risks. Loss history (loss performance) is an informative starting point. The loss history must be supplemented by assessments of future loss developments, for instance in terms of losses in case of an unfortunate coincidence of events. Historically, Danish banks have suffered considerable losses on commercial property exposures. Losses on housing loans have been lower, but there is no guarantee that this will be the case in the future.[11] In an overall assessment, borrowers' debt levels, the prevalence of deferred amortisation and other relevant factors must also be included.

### *General capital requirements*

**A general capital requirement can counter the risk that a severe economic downturn – caused by a drop in property prices – reduces the lending capacity of credit institutions as a result of major losses.** A general capital requirement applies to all of the credit institution's exposures, not just property-related exposures. A general capital requirement can be suitable for making the financial system more resilient against an amplified economic downturn, for instance caused by property market developments. The countercyclical capital buffer is an example of a general capital requirement. Currently, the countercyclical capital buffer has been introduced in Norway and Sweden. So far, the Council has advised that the countercyclical buffer in Denmark be set at 0 per cent, based on an assessment of conditions in Denmark.[12]

## 3.2 Loan term requirements anchor credit standards

### *Down payment requirements*

**A down payment requirement reduces the borrower's and lender's exposure to future drops in property prices – and thus the risk that lower demand and credit capacity will amplify an economic downturn.** In 2015, the Danish Financial Supervisory Authority introduced a down payment requirement, which will generally be 5 per cent of the purchase price. This

8 See ESRB (2016).
9 For a detailed description of challenges in the commercial property market, see ESRB (2015b).
10 The Capital Requirements Regulation, CRR, provides various possibilities of changing risk weights or the underlying parameters included in the calculation of the risk weights. An overview of these possibilities is presented in Danish Financial Supervisory Authority (2014).
11 In Ministry of Business and Growth (2013), it is emphasised that low interest rates and new loan types helped to reduce loan impairment charges on housing-related loans during the 2008-12 financial crisis.
12 The Council's current recommendation is set out in the Council's latest press release. The Council's method for assessing the need for countercyclical capital requirements in Denmark is described in Systemic Risk Council (2016b).

means that home buyers must put down 5 per cent of the purchase price. A similar requirement does not apply to commercial properties. In general, the higher the down payment, the larger the drop in house prices it takes for the home buyer to become technically insolvent. The down payment also reduces the lender's loss if the mortgage becomes non-performing. Thus, a down payment of some size can reduce the risk that an economic downturn is amplified by e.g. household consolidation. A more stringent down payment requirement means that some households will have to turn to less expensive homes or postpone their purchase decision. Thus, in addition to reducing the exposure of homeowners and the financial system to drops in house prices, a down payment requirement can dampen housing demand – or increase demand for cheaper homes – to the extent that the borrower's savings are not sufficient to finance the desired home purchase. This applies especially in areas where house prices are high. However, for existing homeowners, a down payment requirement will have limited significance in times of rising house prices, given that the increased home equity can be used as a down payment on a new home purchase.

**While current practice for down payment requirements can provide a useful starting point, it does not necessarily take systemic effects into account.** According to the Danish Financial Supervisory Authority, a 5 per cent down payment requirement has been common practice among Danish banks. This is roughly equivalent to the costs of selling the home. However, competition may cause common practice to "slip", especially when optimism is rising. Moreover, the likelihood of a sharp drop in prices can be expected to be higher, the higher the preceding property price increases. The IMF has recommended that the down payment requirement in Denmark be raised to 10 per cent. A 10 per cent down payment requirement corresponds to the level in Finland and the recommended level in the Netherlands, while the requirement is 15 per cent in Sweden and Norway.[13] First-time buyers are offered more lenient requirements than other buyers in Ireland and Finland, but only up to a certain value of the home in Ireland. In New Zealand, the down payment requirement for property investors has been higher in the capital than in the rest of the country. Now the requirement has been harmonised for the entire country, at an enhanced level.

**Flexibility in implementation can be achieved e.g. by setting a threshold for the percentage of new loans allowed to deviate from the requirements.** In practice, some room for deviations from loan term requirements may be needed. For instance, some borrowers – with an otherwise robust financial position – could have well-founded prospects of a substantial increase in income in the near future, meaning that the loan facility will soon comply with such requirements, although this is not initially the case. In other countries, it is becoming increasingly prevalent to allow credit institutions to deviate from the requirements for a certain percentage of new loans. This is for instance the case in Norway, the UK, Ireland and Estonia.[14] In principle, this means of achieving flexibility is similar to the Danish Financial Supervisory Authority's indicator for restrictions on deferred amortisation in the supervisory diamond.

### *Debt service ability requirements*

***Debt service ability requirements* in particular can dampen the self-reinforcing effects on property prices in a growing economy**. In Denmark, the Financial Supervisory Authority has issued guidelines to credit institutions on the size of households' non-housing wealth if the loan exceeds 400 per cent of household income. These guidelines apply to mortgaging of homes in Copenhagen and environs as well as Aarhus. Moreover, loans for mortgaging commercial properties should be provided only to the extent that the property

13 In Finland, the down payment requirement can be raised by 10 percentage points. The Netherlands is gradually phasing in a down payment requirement. The Dutch counterpart of a systemic risk council has recommended that this requirement be raised to 10 per cent in the longer term.

14 See ESRB (2015a).

generates positive liquidity, cf. the Executive Order on management and control of banks etc. Debt service ability requirements are generally anchored in the borrower's income. These requirements can impose a limit on the size of the loan relative to income or the debt service burden (the LTI ratio or the debt service to income ratio (DSTI)), cf. Box 1. Given that income developments tend to be more stable than property prices in aggregate terms, debt service ability requirements may be effective in ensuring that the financial sector does not contribute to unstable property price developments. Moreover, the borrower's and lender's exposure to changes in the borrower's debt service ability is reduced – and thus the risk that the loan will become non-performing. Debt service ability requirements could mean that some households will have to turn to less expensive homes or postpone their purchase decision.

What is the most appropriate anchoring of the borrower's debt service ability? Box 1

**The simpler the measure of debt service ability, the more all borrowers are "tarred with the same brush".**


Maximum loan-to-income ratio = Limit * income

Maximum debt payments (interest payments, debt repayments and administration margin payments) = Maximum limit * income

Minimum debt service ability = Income (after tax) – total debt service – fixed and adjustable expenses

**A simple measure such as the size of the loan – or debt – relative to income (LTI) is the easiest to calculate.** This measure has been introduced, inter alia, in the UK and Ireland. However, it does not necessarily take into account that interest rates – and thus the debt service burden – change over time.

**With a debt service limit, it is possible to take the interest and amortisation profile of the loan into account.** The requirement can be designed to ensure that, for variable rate loans, the borrower is able to service the debt and maintain a reasonable standard of living, even in case of a major interest rate increase. If the limit applies to all debt, not just the specific loan, information on the interest and amortisation terms of all debt commitments must be obtained. The borrower's total debt determines what remains as disposable income, but obtaining all debt information may be difficult.

**Individualised calculations of debt service ability can allow for major differences in the required disposable incomes of individual households**, as well as their sensitivity to interest rate changes. On the other hand, individualised calculations entail far greater requirements for personal information about spending habits and leave more room for judgment unless a minimum disposable income requirement is established. Debt service ability requirements apply e.g. in Norway, the UK and Denmark.[1]

[1] In Denmark, a minimum disposable income requirement has not been established. It appears from the guiding principles of the Danish Financial Supervisory Authority that the disposable income required by a person or a family varies from person to person and from family to family and generally the bank must assess whether the disposable income is sufficient.

Source: ESRB (2015a) and Danish Financial Supervisory Authority.

**Debt service ability requirements must reflect the expected reasonable amount of disposable income required to maintain the usual standard of living.** The amount of disposable income needed varies greatly from person to person and from family to family, depending on family composition, spending habits, etc. Nevertheless, at some point, the debt service burden on a loan will become so high that the risk of default is relatively pronounced. The more expensive the home, the more likely the buyers will be to leverage themselves highly. This is reflected in the geographical dispersion of leverage, since high leverage relative to income is most prevalent around the larger cities where house prices are highest. Flexibility in the requirements can be ensured e.g. by setting a threshold for the percentage of new loans allowed to deviate from the requirements. In the UK, 15 per cent of new loans are allowed to exceed the LTI cap. This cap has been set to ensure that the requirement will not be binding if

developments in house prices are fairly stable relative to incomes. However, if the housing market gains too much momentum, the authorities expect a greater inclination to grant larger loans relative to the borrower's income. Then the requirement will become binding.

### *Mortgage amortisation requirement*

**Amortisation requirements for high LTV-mortgages have effects similar to both down payment requirements and debt service ability requirements.** The lower exposure to drops in house prices that can be ensured by a down payment requirement can alternatively be achieved over a number of years if the loan is amortised on a regular basis. At the same time, amortisation requirements can dampen the extent to which the borrower's resilience is squeezed in order to service the debt, given that resilience is reduced not only by interest payments but also by amortisation payments. Thus – like down payment requirements and debt service ability requirements – mortgage amortisation requirements may dampen housing demand and thus the risk of build-up of systemic risks. In Sweden and Norway, loans can as a starting point be obtained up to the 85 per cent LTV ratio only if 2 per cent and 2.5 per cent, respectively, of the principal is amortised annually. This requirement holds until the loan has been reduced to 70 per cent of the home value.

## 3.3 Initiatives are to reduce the likelihood of a crisis

**Several different initiatives may be needed, given that no single initiative can address all risks.** Property prices may fall, having systemic implications, even if a debt service ability requirement manages to stem an upward pressure on prices from over-optimistic debt financing. Therefore, it may be relevant to supplement the debt service ability requirement with a down payment requirement and higher capital requirements, which will, in different ways, reduce the exposure of the financial system to a downturn. Similarly, it may be necessary to supplement a down payment requirement with a debt service ability requirement in order to ensure that over-optimistic credit extension relative to the borrower's debt service ability does not become too prevalent, either among first-time buyers or existing homeowners. The aim is not to prevent credit extension in general, but to reduce the most risky portion and/or its implications. In other countries, for instance Sweden, Norway, Finland, Ireland and the UK, a combination of initiatives is the rule rather than the exception.[15]

**Signs of eventual inexpedient circumvention of the rules need to be monitored.** If different types of credit providers are not subject to the same set of rules – e.g. mortgage deed companies or Danish branches of banking groups in other countries –borrowers may gravitate towards the least restrictive option.[16] This initially relieves Danish credit institutions of losses on the specific loans. But some of the intended effects of the requirements could be reduced, for instance the aim of reducing a credit-financed pressure on property prices. Therefore, it is important to keep a keen eye on developments e.g. in the mortgage deed market and enter into close dialogue with foreign regulators to ensure that the initiatives have the intended effects.

**Preliminary evidence suggests that loan term requirements limit the prevalence of high leverage.** The desired impact of the initiatives is lower probability of a systemic crisis – or that the costs associated with a crisis are lower. The price is that some households and firms are restricted from e.g. over-leveraging themselves. Or that credit institutions incur modest additional costs when using a larger share of equity financing.[17] Measuring whether the desired

15 See ESRB (2015a).

16 The risk of this must be assumed to depend on the extent to which excessive credit growth is driven by credit institutions' credit supply in competition for lending activities or by borrowers' credit demand due to optimistic expectations for the future.

17 In Danmarks Nationalbank (2016), the additional costs for banks are assessed to have been 0.01-0.05 percentage point – measured by the weighted average cost of capital, WACC – with each percentage point the ratio of the value of equity relative to the value of equity and other liabilities increases.

impact is achieved is difficult. Moreover, the initiatives were introduced in most comparable countries only in recent years. But preliminary evidence from Norway, the UK and New Zealand suggests that loan term requirements actually do limit the prevalence of high leverage.[18] It is also assessed that the initiatives – as desired – have reduced growth in total lending and/or activity in the property market.

*Questions*

The Council is soliciting opinions on the most appropriate approach to initiatives to address systemic implications of developments in the property market. Such opinions may include:

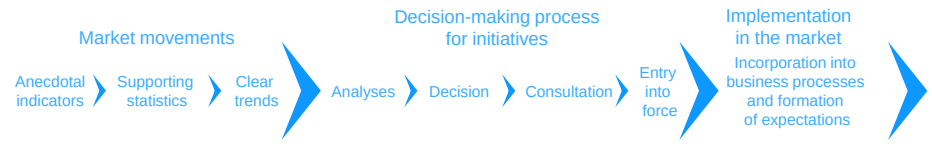
1. Which initiatives – or combination of initiatives – in the financial area are best suited to prevent that developments in the property market have considerable negative impacts on the financial system, home buyers and the real economy?
2. Should any special considerations be taken into account in a Danish context?
3. Do any of the initiatives involve significant operational challenges? How is the balance between flexibility and the aim of the regulation best achieved? What are the most important arguments for and against differentiating requirements based on, for instance, geography and price level?
4. How can potentially inexpedient implications be addressed?

## 4. The need for initiatives can be guided by indicators

**The earlier an initiative is taken, the less restrictive it will be perceived to be.** Loan term requirements should limit the riskiest lending. If such requirements are introduced at an early stage, few borrowers are likely to see the requirements as a restriction. The reason is that most borrowers and lenders, at their own initiative, tend to pursue a reasonable credit policy. However, credit standards may "slip" if over-optimism or risk appetite become prevalent, as described in section 2. The building of extra capital buffers to increase resilience should also start well before risks materialise. All else equal, for credit institutions the availability of capital is presumably greater – and the price lower – before systemic risks become evident.

**Time lags from the need arises until the initiatives take effect place requirements on indicators.** Initiatives such as loan term requirements must be taken in time for them to have a preventive effect. In practice, there will be a considerable time lag from the first indications of the build-up of risks until any initiatives taken have an impact, as illustrated by Chart 2. Initially, there will probably be few indications that over-optimism and risk appetite are becoming prevalent. Still, it may be worth considering acting rather than waiting for obvious trends to appear in the numerous indicators. The reason is that statistics tend to become available at a lag of several months. Decision-making and implementation at credit institutions also take time. Decisions based on early indications entail a risk of introducing an initiative at a time when developments do not necessarily entail systemic risks. Thus, it may be considered to phase in initiatives gradually. On the other hand, this risk must be weighed against the risk of acting too late.

A long period of time may elapse from the need for initiatives arises until the initiatives are implemented — Chart 2




18 See Danmarks Nationalbank (2014). Kuttner and Shim (2013) has one of the most detailed studies of cross-country effects. However, here only the effect on aggregate credit measures and house price developments is evaluated, while the effect on leverage is not part of the analysis.

**Developments in property prices and credit are important indicators of the need for initiatives.** The IMF points out that increased lending to households and firms and developments in house and commercial property prices internationally have proved to be a good basis for making decisions about the need for macroprudential initiatives.[19] Geographical developments and the prevalence of particularly risky loan commitments must also be included to capture any indications of over-optimism and more widespread risk-taking. The IMF emphasises the need to include all relevant information in an overall assessment.

**Technical methods can be included as indicators.** The ability of the indicators to show whether a systemic financial crisis could be building up can be assessed using various statistical methods. The European Systemic Risk Board, ESRB, has presented a range of methods for this purpose.[20] An input for such analysis could be statistical models, showing whether house price developments indicate that a house price bubble may be building.[21] However, such models can hardly stand alone, since a sharp drop in property prices may occur without a preceding price bubble.

**Alternatively, minimum loan term requirements can be introduced as permanent framework conditions.** If such requirements are introduced as permanent framework conditions, the challenge of finding the right time to implement initiatives is addressed for the future. Moreover, permanent requirements relieve financial corporations of having to change practices on an ongoing basis once the minimum requirements have been incorporated. The requirements may also have a norm-setting effect on borrowers' savings for the purchase of real estate.[22] In Sweden, Finland, the Netherlands, Estonia and Ireland, loan term requirements have been introduced as permanent framework conditions. Finland has also incorporated the opportunity to raise the down payment requirement. The requirements can be set to kick in only in periods of strong momentum in the property market, if deemed expedient. This approach is used e.g. in the UK and Estonia.

**In case of an economic downturn, the market requirements can be binding.** There may be concerns that the minimum requirements are unnecessarily binding when a market adjustment takes place. However, the financial markets often impose requirements themselves that are more stringent than the regulatory requirements in connection with a downturn. One example is the implementation of new and more stringent capital requirements under CRR/CRD4, adopted during the financial crisis. At that point, the financial markets had already tightened requirements for credit institutions' capitalisation – requirements that often exceeded the new regulatory requirements. Another example is property transactions. Prior to the financial crisis, quite a few homeowners bought a new home before finding a buyer for their old house. Credit institutions, at their own initiative, tightened their practice during the financial crisis to the effect that it was typically no longer possible for customers to obtain financing for a new home before selling their old one.[23]

**The possibility of developing indicators will be significantly improved in the coming years.** Some relevant data is not currently available, for instance information about the prevalence of high leverage against real property. The setting up of a credit register will provide an important contribution in terms of shedding light on property-related lending. Data from the register is expected to be available for use in 2019. However, the commercial property market presents a special challenge when it comes to statistics. Far fewer transactions take place

19 IMF (2014).
20 See ESRB (2015c).
21 A Danish example is described in Klein et al (2016).
22 For a review of the pros and cons of introducing the requirements as permanent framework conditions, see ESRB (2015a).
23 See the Danish Financial Supervisory Authority (2014).

in this market than in the residential property market, and the properties traded are very diverse. This makes the valuation of the properties difficult.

**A few countries have defined indicators for when initiatives should be implemented, but they emphasise the need for situation-specific assessment.** The set of indicators chosen by the UK Financial Policy Committee largely corresponds to the indicators proposed by the IMF. These indicators are typically compared with their historical averages. The Committee says that some indicators will be more important than others in a specific situation. But the Committee will be more likely to introduce or tighten loan conditions for the housing market, the larger deviations there are from historical benchmarks, or the more indicators that are pointing in the same direction, or if the indicators are supported by anecdotal information. New Zealand has also chosen a set of indicators, but has not defined specific threshold values such as historical averages. In other countries, initiatives have been introduced based on developments in the general risk outlook or as permanent framework conditions.

### *Questions*

The Council is soliciting opinions on when to implement any further initiatives. Such opinions may include:

5. Which indicators are best suited to facilitate that initiatives in the financial area in Denmark are taken in due time?
6. Are further initiatives currently needed? Why? Why not?
7. What is the best way to follow developments in the commercial property market, given the limited statistics?
8. Are some initiatives better suited to become permanent, stable framework conditions, or should they be introduced/tightened and abolished/eased with developments in the property market and lending?

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## 6. Annex A Potential systemic pass-through from a sharp drop in property prices

**Negative developments in the property market may have implications for the financial system and the economy in at least three ways.**

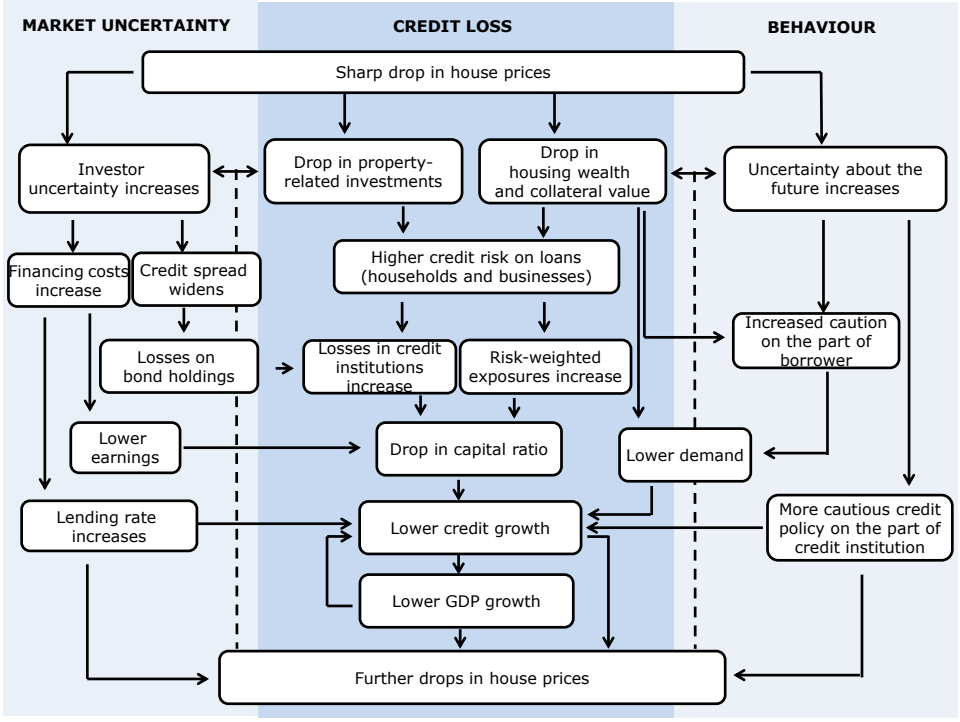
**The lending capacity of credit institutions may be reduced due to higher credit risk and losses on existing loans.** When the value of houses and other properties decreases – and with it the value of the collateral pledged for the loans – the credit risk of non-performing loans, and thus the risk of major losses, increases. Losses may be incurred on property-related loans and guarantees, but also on loans to cyclically sensitive sectors such as the building and construction industry. A lower credit supply due to increased credit risk may amplify an economic downturn.

**Increased caution on the part of households, firms and credit institutions may lead to lower demand and lending willingness.** Uncertainty as to the future and lower wealth may reduce spending and investment activities. Lower demand in the economy increases the risk of losses for credit institutions on loans to households and businesses. Similarly, a change in the risk perception in credit institutions could lead to tighter credit policy, and thus more difficult access to loans, which could reinforce economic contraction.

**Weaker market confidence could make it more difficult to finance loans and investments.** A sharp drop in property prices could weaken market confidence in credit institutions, thus making re-lending more difficult. Financing property investments may also be difficult. This could amplify an economic downturn in the property market.

**When many people change their behaviour at the same time, this could have self-reinforcing effects on the property market, the economy and the financial system,** although it could make sense for the individual borrower, lender or investor to show more restraint.

Stylised illustration: Transmission of a sharp drop in house prices Chart A.1




Note: The chart is a stylised illustration of potential macro-financial contexts that may be experienced in the wake of a sharp drop in house prices. All links between the financial system and the real economy are not completely covered in the chart.

## 7. Annex B Overview of recent financial initiatives in EU-countries

Specific capital requirements — Table 1

| Country | Year of initiative | Type of measure | Description of measure | Measure becomes active on |
|---|---|---|---|---|
| Belgium | 2014 | Art 458 – risk weights for RRE and CRE | 5 percentage point add-on to the risk weights applied by banks that use the IRB approach to mortgage loans to Belgian residents covered by residential real estate in Belgium. Continuation of a measure (but now under the CRD/CRR framework) that was already applicable from 8 December 2013 onwards. | 01-01-2014 |
| Belgium | 2015 | Art 458 – risk weights for RRE and CRE | Extension of the stricter national measure under article 458 CRR for residential mortgage loans by one year. | 28-05-2016 |
| Croatia | 2014 | Art 124 – Risk weights on RRE | Stricter definition of residential property for preferential risk weighting (e.g. owner cannot have more than 2 residential properties, exclusion of holiday homes, need for occupation by owner or tenant). | 01-01-2014 |
| Ireland | 2014 | Art 124 – Risk weights on CRE | Stricter criteria for preferential weighting residential mortgage loans: the property needs to be owner-occupied and the LTV must not exceed 75%. Minimum risk weight on commercial property lending increased from 50% to 100%. These are a continuation of previous policies in place since 2007. | |
| Luxembourg | 2013 | Risk weights (other) | Institutions using the standardised approach for credit risk need to apply a risk weight of 75% to the part of the mortgage loan exceeding 80% of the value of the real estate object. | 01-07-2013 |
| Norway | 2013 | Art 164 – LGD for retail exposures on RRE | Increase minimum EAD weighted average LGDs for retail exposures secured by residential real estate in Norway from 10% to 20%. | 01-01-2014 |
| Norway | 2014 | Risk weights (other) | Tighter requirements for residential mortgage lending models. Finanstilsynet estimates that the requirements for PD models, in combination with the LGD floor, will increase risk weights assigned to residential mortgage portfolios to around 20-25 per cent compared with previous levels of 10-15 per cent. | 01-01-2015 |
| Norway | 2014 | Art 124 – Risk weights on CRE | Higher risk weights (100%) and stricter criteria than in CRR for commercial real estate exposures of SA banks. | |
| Romania | 2014 | Art 124 – Risk weights on CRE | Higher risk weights (100%) and stricter criteria than in CRR for commercial real estate exposures of SA banks. The measure has been introduced in the national legislation starting 1/1/2007 and has been maintained by exercising the national option under CRR. Compulsory reciprocation under Art. 124(5) CRR | 01-01-2014 |
| Slovenia | 2016 | Art 124 – Risk weights on RRE | Applying stricter criteria than those set out in Article 125(2) CRR on exposures fully and completely secured by mortgages on residential property: for the purpose of Article 125(2d), the LTV ratio is set at 60%. Continuation of an existing measure, | 21-03-2016 |
| Sweden | 2014 | Pillar II | A risk weight floor of 25% (previously 15%) for Swedish mortgage loans by IRB banks. | 08-09-2014 |
| Sweden | 2015 | Art 124 - Risk weights on CRE | Continuation of practice since 2007 to apply a risk weight of 100% for exposures secured by mortgages on commercial immovable property. | 30-01-2015 |
| United Kingdom | 2014 | Art 124 - Risk weights on CRE | Application of stricter criteria for the eligibility of the 50% risk weight exposures fully and completely secured by mortgages on commercial real estate. The stricter criterion requires firms to determine whether the annual average loss rates for lending secured by mortgage on commercial real estate in the UK did not exceed 0.5% over a representative period. | 01-01-2014 |

Note: Article numbers refer to articles in the European capital requirements directive CRD IV.
Source: ESRB (2016).

| Down payment requirements or loan to value, LTV,-limits | | | Table 2 |
|---|---|---|---|
| Country | Year initiative | Description of measure | Measure becomes active on |
| Cyprus ..... | 2013 | First version: 24 November 2003<br>LTV ratio (as amended in 2013) shall not exceed:<br>(a) 80% in case the credit facility is granted for financing the primary permanent residence of the borrower.<br>(b) 70% for all other property financing cases.<br>(on 18 March 2016, the provisions on the LTV ratio were transferred from the CBC directive on loan origination to a CBC circular to banks, without any changes) | 04-12-2013 |
| Czech Republic .. | 2015 | Recommendation to have residential mortgage loans with an LTV > 90% for not more than 10% of the total amount of such loans in any given quarter. No residential mortgage loans with LTV > 100%. | 01-06-2015 |
| Denmark ..... | 2015 | Home buyers are generally required to make at least a 5 percent down payment (own financing) when purchasing a home. | 01-11-2015 |
| Estonia ..... | 2014 | All credit institutions operating in Estonia are subject to a LTV limit of 85% (90% if guaranteed by KredEx) for new housing loans. Up to 15% of the amount of new housing loans issued in a quarter are allowed to breach the limit(s). | 01-03-2015 |
| Finland ..... | 2014 | LTV of 90% (95% for first-time house buyers) by law. Cap can be tightened by 10 percentage points by Finanssivalvonta. | 01-07-2016 |
| Hungary ..... | 2014 | LTV limits for new mortgage loans, limits range from 35% to 80%. LTV limits for new vehicle loans, limits range from 30% to 75%. Limits are differentiated according to currency of loan (HUF, EUR, other currencies). (32/2014. (IX. 10.) MNB Decree). | 01-01-2015 |
| Ireland ..... | 2014 | Proportionate LTV limits of: 80% for non-first time buyers (FTBs); 90% for FTBs of properties up to €220,000; a sliding LTV limit based on property value for FTBs over €220,000. To be exceed by no more than 15% of the value of new lending for primary home | 09-02-2015 |
| Latvia ..... | 2007 | LTV cap of 90% for residential mortgage lending. The LTV requirement is set in the Law on Consumers Rights' Protection, but Latvijas Banka can issue a recommendation on the appropriate LTV level. | 01-07-2007 |
| Latvia ..... | 2014 | LTV cap of 95% for loans supported by a state guarantee under the Law on Assistance in Resolution of Dwelling Issues. | 01-07-2014 |
| Lithuania ..... | 2011 | LTV of new housing loans cannot be more than 85%. | 01-09-2011 |
| Netherlands ..... | 2012 | LTV limit for new mortgage loans decreases stepwise 1 percentage point per annum from 106% in 2012 to 100% in 2018. | 01-01-2012 |
| Norway ..... | 2015 | Regulation based on supervisory guidelines. LTV for residential mortgage loans is capped at 85%. 10% of the volume of a lender's approved loans per quarter are allowed not to meet the regulatory requirements. | 01-07-2015 |
| Poland ..... | 2013 | LTV limits:<br>Residential real estate:<br>2014 - 95%<br>2015 - 90%<br>2016 - 85% or 90% if the part above 85% is insured or collateralized with funds on bank account, government or NBP securities<br>>=2017 (target levels) - 80% or 90% if the part above 80% is insured or collateralized with funds on bank account, government or NBP securities<br>Commercial real estate:<br>since 07.2014: 75% or 80% if the part above 75% is insured or collateralized with funds on bank account, government or NBP securities. | 01-01-2014 |
| Romania ..... | 2011 | In case of housing loans, limits on the LTV ratio were imposed: 85% for local currency denominated loans, 80% to FX loans granted to hedged borrowers, 75% for EUR denominated loans granted to unhedged borrowers, and 60% for other FX loans granted to unhedged borrowers. In case of consumer loans, maximum LTV is 75%. LTV limits for loans granted through the governmental program "Prima Casă" are 95% irrespective the currency. The measure is applied to both banks and non-bank financial institutions. | 31-10-2011 |
| Slovakia ..... | 2014 | Recommendation: LTV of new loans should not be more than 100%.<br>The share of loans with an LTV ratio of between 90% and 100% should not exceed:<br>a) 25%, until 30 June 2015;<br>b) 20%, from 1 July 2015 to 31 March 2016;<br>c) 15%, from 1 April 2016 to 31 December 20 16;<br>d) 10%,from 1 January2017. | 01-11-2014 |
| Sweden ..... | 2010 | LTV of new loans should not be more than 85%. | 01-10-2010 |

Source: ESRB (2016).

| Repayment ability requirements, including debt (service) to income | | | | Table 3 |
|---|---|---|---|---|
| Country | Year of initiative | Type of measure | Description of measure | Measure becomes active on |
| Cyprus | 2013 | Stress test / sensitivity test | Credit institutions should carry out scenario analysis in order to assess the impact on debt servicing in case of increases in the loan instalment due to increases in the interest rate or any other cause. Scenarios shall also be applied to future reduction in the cash flow generating capacity of the borrower. As a minimum scenario, credit institutions shall assume that interest rates move towards their long term average level and that the cash generating capacity of the borrower is reduced by 20%. | 04-12-2013 |
| Cyprus | 2016 | Debt-service-to-income (DSTI) | Amendment of previous DSTI measure. The debt servicing amount shall be limited to 80% of the borrower's "net disposable income".<br><br>In case of loan in foreign currency, the total debt servicing amount should be limited to 65% of the "net disposable income". | 18-03-2016 |
| Estonia | 2014 | Debt-service-to-income (DSTI) | All credit institutions operating in Estonia are subject to a DSTI limit of not more than 50% of borrower's net income for new housing loans. The DSTI ratio is calculated using either the interest rate in the loan contract (base rate plus margin) plus 2 percentage points, or an annual rate of 6%, whichever is higher. Up to 15% of the amount of new housing loans issued in a quarter are allowed to breach the limit(s). | 01-03-2015 |
| Hungary | 2014 | Debt-service-to-income (DSTI) | PTI (Payment-to-income) limits, going from 10% to 60% covering all types of credit and loan operations. The limits are differentiated according to the currency of the loan (HUF, EUR, other currencies) and the net income of the borrower (<=, > HUF 400,000). De minimis exception for very small loans. (32/2014. (IX. 10.) MNB Decree). | 01-01-2015 |
| Hungary | 2016 | Debt-service-to-income (DSTI) | Amendment of the requirements related to payment-to-income (PTI) and loan-to-value (LTV) ratios. Raising the de minimis line on no debt-cap small loans from HUF 200,000 to HUF 300,000. Allow lenders to apply one credit line increase per year without checking PTI ratios, subject to limits on the size of the increase. Differential treatment of mortgages with interest fixation periods of at least five years: monthly debt service of such loans has a lower weight when calculating the PTI ratios for borrowers. Lastly, various technical amendments. | 01-05-2016 |
| Ireland | 2012 | Stress test / sensitivity test | Lenders must assess whether borrowers can still afford their mortgage loans on the basis of a minimum 2% interest rate increase above the offered rate. | 01-01-2012 |
| Ireland | 2014 | Loan-to-income (LTI) | Proportionate LTI limit: new housing loans with LTI greater than 3.5 should not be more than 20% of aggregate value new housing loans. | 09-02-2015 |
| Lithuania | 2011 | Debt-service-to-income (DSTI) | DSTI of not more than 40% of borrower's net income. | 01-09-2011 |
| Lithuania | 2015 | Debt-service-to-income (DSTI) | DSTI of not more than 40% of borrower's net income. A credit institution can apply a DSTI of more than 40% of the borrower's income, but overall capped at 60%, for the amount of housing loans that is not higher than 5% of the total value of new housing loans granted by that credit institution during the calendar year. (amendment of previously introduced measure) | 01-11-2015 |
| Norway | 2015 | Stress test / sensitivity test | Regulation based on supervisory guidelines. When assessing a borrower's debt-servicing ability, the lender needs to make allowance for an interest rate increase of 5 percentage points. 10% of the volume of a lender's approved loans per quarter are allowed not to meet the regulatory requirements. | 01-07-2015 |
| Poland | 2013 | Debt-service-to-income (DSTI) | Removal of strict DSTI levels, for creditworthiness assessment bank should take into consideration broad set of indicators and set their internal DSTI limits. Applies to all loans to households. | 01-07-2013 |
| Poland | 2013 | Debt-service-to-income (DSTI) | Removal of strict DSTI levels, for creditworthiness assessment bank should take into consideration broad set of indicators and set their internal DSTI limits. The PFSA can challenge these limits. Banks should pay particular attention to loans for which DSTI ratios exceed 40% (for borrowers with incomes below the average salary in the region) and 50% (for other borrowers). In such cases the client should be informed about heightened risk of such a transaction. Applies to newly originated housing loans. | 01-01-2014 |
| Romania | 2011 | Debt-service-to-income (DSTI) | In the case of consumer loans, when establishing the maximum level of DSTI, the credit institutions have to take into account the foreign currency risk, interest rate risk and income risk. The values for these risk factors are explicitly specified in the regulation: a) for foreign currency risk, the depreciation scenarios of the local currency to be incorporated are: 35.5% for EUR denominated loans, 52.6% for CHF denominated loans and 40.9% for USD denominated loans, b) for interest rate risk: 0.6 percentage points increase in interest rate and c) for income risk: 6% reduction in income. The measure is applied to both banks and non-bank financial institutions. | 31-10-2011 |

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|---|---|---|---|
| Romania .....2012 | Stress test / sensitivity test | Credit institutions must ensure stricter criteria for debt servicing capacity in case of FX loans granted to unhedged non-financial firms even in cases of a severe depreciation of the local currency or increases in interest rates. In establishing the debt servicing capacity they should take into account the foreign currency and interest rate shocks defined for consumer loans: (a) for foreign currency risk, the depreciation scenarios of the local currency to be incorporated are: 35.5% for EUR denominated loans, 52.6% for CHF denominated loans and 40.9% for USD denominated loans and (b) for interest rate risk: 0.6 percentage points increase in interest rate. The measure is applied to both banks and non-bank financial institutions. | 18-12-2012 |
| Slovakia .....2014 | Stress test / sensitivity test | Recommendation: Set and adhere to an internal limit for the indicator of customer repayment ability. The limit should be met also in the case of an interest rate increase.<br>Banks should verify their customers' income. | 01-03-2015 |
| Slovakia .....2014 | Debt-service-to-income (DSTI) | Recommendation: Bank's internal systems should include an indicator containing household income, standard household living costs, and total debt servicing requirements. | 01-03-2015 |
| United Kingdom .2014 | Loan-to-income (LTI) | Proportionate LTI limit: new residential mortgage loans with LTI greater than 4.5 should not be more than 15% of aggregate volume new residential mortgage loans. De minimis exception for lenders with mortgage lending up to GBP 100 million per annum or extending fewer than 300 mortgages. Implemented as a Pillar II measure. | 01-10-2014 |
| United Kingdom .2014 | Stress test / sensitivity test | Mortgage lenders need to assess whether borrowers can still afford their mortgage loans if the Bank of England's rate were 3 percentage points higher over a 5 year period than at origination of the loan. | 01-06-2014 |

Source: ESRB (2016).

| Mortgage amortisation requirements | | | | Table 4 |
|---|---|---|---|---|
| Country | Year of initiative | Type of measure | Description of measure | Measure becomes active on |
| Estonia ..... | 2014 | Loan maturity | All credit institutions in Estonia are subject to a maturity limit of 30 years for new housing loans. Up to 15% of the amount of new housing loans issued in a quarter are allowed to breach the limit(s). | 01-03-2015 |
| Lithuania ..... | 2015 | Loan maturity | Maturity of new housing loans should not be more than 30 years. | 01-11-2015 |
| Netherlands ..... | 2013 | Loan amortisation | New mortgage loans are only tax deductible when they are amortised within 30 years. | 01-01-2013 |
| Norway ..... | 2015 | Loan amortisation | Regulation based on supervisory guidelines. Residential mortgage loans with an LTV greater than 70% need to be amortising. 10% of the volume of a lender's approved loans per quarter are allowed not to meet the regulatory requirements. | 01-07-2015 |
| Poland ..... | 2013 | Loan maturity | Banks should recommend to their clients loans of maturity not longer than 25 years, and if clients ask for loans of longer maturity banks are recommended to grant loans of maturity of maximum 35 years and assess the creditworthiness assuming maturity of 25 years. | 01-07-2014 |
| Romania ..... | 2011 | Loan maturity | Consumer loans with a maturity of more than 5 years are not allowed. The measure is applied to both banks and non-bank financial institutions. | 31-10-2011 |
| Slovakia ..... | 2014 | Loan amortisation | Recommendation: Loans with (partial) deferred payment of interest or principal should not be granted. Specified exceptions are allowed. | 01-03-2015 |
| Slovakia ..... | 2014 | Loan maturity | Recommendation: Maximum maturity for new housing loans should be 30 years with no more than 10% of new loans exceeding this limit. Maximum maturity for other new loans is 9 (ultimately 8) years.<br>Date of application: Housing loans: 1 March 2015.<br>Other loans: 9 years from 1 March 2015 to 31 December 2015; 8 years from 1 Janauary 2016 onwards. | 01-03-2015 |
| Sweden ..... | 2016 | Loan amortisation | New mortgages with an LTV above 70% must be amortised by at least 2% of the original loan amount each year. Loans that have an LTV below 70% must be amortised by a minimum of 1% annually until the LTV has reached 50%. For existing mortgages raised before 1 June 2016, additional loans may be paid either in accordance with the basic rule or over a period of ten years. | 01-06-2016 |

Source: ESRB (2016).