A. Macroprudential policy

The purpose of the Bank's activities in performing its macroprudential mandate is to safeguard overall financial stability. The Bank fulfils part of that responsibility jointly with the ECB, which was given a number of powers concerning macroprudential policy under the single supervisory mechanism (SSM).

During the year under review, the Bank maintained its watch on the risks concerning residential property, continued monitoring the adequacy of the policy measures introduced, and took new steps to address the vulnerabilities found. The Bank also has to take a number of recurrent macroprudential decisions. That concerns the quarterly fixing of the countercyclical capital buffer rate applicable to credit exposures in Belgium, and the annual preparation of the list of domestic systemically important banks. The Bank also contributed to the creation of a level playing field at macroprudential level in Europe via a framework providing for the recognition of macroprudential rules imposed by foreign authorities.

The macroprudential framework is still being developed. In the third quarter of the year under review, the European Commission published a consultation document on revision of the macroprudential element of the EU regulations. On this subject, the Bank advocates greater flexibility for the national macroprudential authorities, more specifically via extension of the instruments serving macroprudential purposes and simplification of the procedures for using those instruments. The consultation document refers in particular to the vulnerabilities and risks in the non-financial sector and to the new regulations for containing them. In 2016, the Bank continued developing its analysis framework in anticipation of the possible extension of macroprudential policy to the non-bank sphere.

1. Residential property

The strong expansion of mortgage lending contributed to the continued rise in the Belgian household debt ratio, which exceeded the euro area average for the first time. That happened against the backdrop of a new surge in property prices in 2015 and, to a lesser extent, in 2016. The strong growth of mortgage debt reflects, in particular, the large proportion of recent new mortgage business comprising loans with a high loan-to-value ratio – which compares the amount of the mortgage loan with the value of the property financed – and a high debt-service-to-income ratio, which relates the monthly debt repayment to the borrower's income. Furthermore, the favourable trend previously evident towards tightening of credit standards seems to have come to an end in 2015 and 2016. In the face of a less favourable picture on the Belgian housing market, the riskier segments of the mortgage loan portfolios could be a source of higher loan losses than the banks had expected, especially if competition on the market encourages banks to take insufficient account of the said risks when setting their commercial margins.

In recent years, the Bank has kept a close eye on the risks associated with these general market trends, more particularly in the riskier sub-segments (1). In their analyses of the risks to financial stability in Belgium, the OECD, the IMF, the ECB and the ESRB once again drew attention to developments on the housing market. During the course of the year, a detailed horizontal study by the ESRB on the risks associated with the residential real estate market in all European Union Member States led to a warning addressed to eight Member States, including Belgium. On the basis of an analysis of the medium-term risks, that

(1) See the Bank's Macroprudential Report 2016.

warning calls on the Belgian authorities to be vigilant over the increasing vulnerabilities associated with mortgage lending and household debt ratios. According to the ESRB estimates, the steps already taken by the Belgian authorities are appropriate, but could be insufficient to overcome these risks altogether.

In 2016, with the agreement of the European authorities and in accordance with Article 458 of the Capital Requirements Regulation (CRR [1]) and Article 5 of the Single Supervisory Mechanism Regulation (SSM Regulation [2]), the Bank extended the 2013 macroprudential measure by one year [3]. That measure, in force until 28 May 2017, provides for a flat-rate, 5 percentage point increase in the risk-weighting coefficients applicable to Belgian mortgage loans for which the own funds requirements are calculated using internal models. It strengthens the ability of the market and credit institutions to withstand any unexpectedly large losses on Belgian mortgage loans in the event of certain specific risks materialising. Box 8 presents an analysis of the impact of the measure on the pricing of mortgage loans. In June, as there was nevertheless still no further reduction in certain vulnerabilities in the market – such as the significant proportion of new mortgage loans with a high loan-to-value ratio –, the Bank announced its intention to introduce an additional measure aimed more specifically at the risky loan sub-segments. This new macroprudential measure would lead to the formation of an additional capital buffer of around € 600 million comprising common equity Tier 1 capital (CET 1). The size of that buffer would be calculated by applying higher minimum loss given default (LGD) values to loans with indexed loan-to-value ratios of more than 80 % at the time of formation of the buffer. The aims of this measure are therefore twofold: to make the sector more resilient to any shocks on the Belgian mortgage market, and to discourage new lending with a loan-to-value ratio of over 80 %. If the competent European institutions approve this measure, it should take effect in May 2017.

(1) Regulation (EU) No. 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No. 648/2012.
(2) Council Regulation (EU) No. 1024/2013 of 15 October 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions.
(3) This measure originally entered into force via a Bank Regulation approved by the Royal Decree of 8 December 2013, then implemented in 2014 for a two-year period pursuant to Article 458 of the CRR.

Box 8 – Impact of the flat-rate increase in the risk weightings applicable to Belgian mortgage loans

This box assesses the impact of the introduction of the five percentage point increase in the risk-weighting coefficient on the margins on Belgian mortgage loans granted by banks which use internal ratings-based models to calculate the own funds requirements applicable to those loans (internal ratings-based banks: "IRB banks") [1]. Although the effects of this measure in terms of additional capital are evident immediately, there could also be indirect effects on the provision of credit: as the higher capital requirements increase the banks' funding costs, the banks could decide to pass on that higher cost to their customers by widening the margins on loans. In order to analyse the latter effect, a "difference-in-difference" estimation method was applied to the data on thirteen Belgian banks, eight of which use internal models to calculate the risk weightings for mortgage loans and therefore fall within the scope of the macroprudential measure (which does not concern the other five institutions).

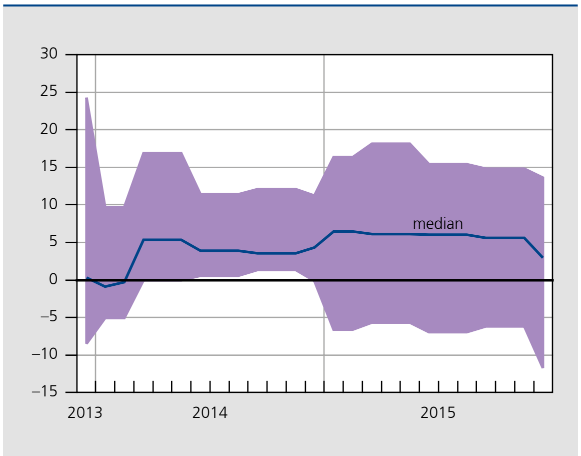
The results show that, on average, the increase in the risk weightings had no impact on the pricing of mortgage loans by IRB banks: the average estimated effect of approximately 5 basis points is not statistically significant. However, the results suggest that the impact of the increased risk weightings on the margins on mortgage loans varies from one IRB bank to another. More specifically, the IRB banks on which the macroprudential measure has a greater impact, i.e. those subject to more substantial minimum capital requirements, introduce bigger increases in their margins on mortgage loans. Conversely, the increase in the margins is smaller in IRB banks that voluntarily maintain a larger buffer and therefore have more latitude for meeting the additional own funds requirements resulting from the higher risk-weighting coefficients. The chart indicates the dispersion between the minimum and maximum impact as predicted by the statistical model in the two years following introduction of the measure. Although the effect of the measure varies for each IRB bank taken individually, its impact is generally relatively

(1) A first version of this analysis was presented at the Bank's 2016 international conference "The transmission mechanism of new and traditional instruments of monetary and macroprudential policy" on 13 and 14 October 2016 and published as NBB Working Paper No. 306.

small. The measure thus achieves its aim of strengthening the banks' resilience without major implications in terms of a reduction in lending.

DISTRIBUTION OF THE IMPACT OF THE INCREASE IN THE RISK-WEIGHTING COEFFICIENTS

(in basis points)



Source : NBB.

Note : The shaded area represents the dispersion between the minimum and maximum impact of the higher risk-weighting coefficients on the margin applicable to mortgage loans for IR banks taken individually, as predicted by the statistical models.

2. Countercyclical capital buffer

Once a quarter, the Bank has to set the countercyclical capital buffer (CCyB) rate applicable to credit exposures on counterparties located in Belgian territory. The aim of the CCyB is to support sustained lending during the cycle by strengthening the banks' resilience in the event of an increase in the cyclical systemic risks (e.g. in the case of excessive credit growth). On the basis of a wide range of information, including a vast array of indicators considered

TABLE 24 T24 COUNTERCYCLICAL BUFFER RATES IMPOSED BY FOREIGN AUTHORITIES

(in %)

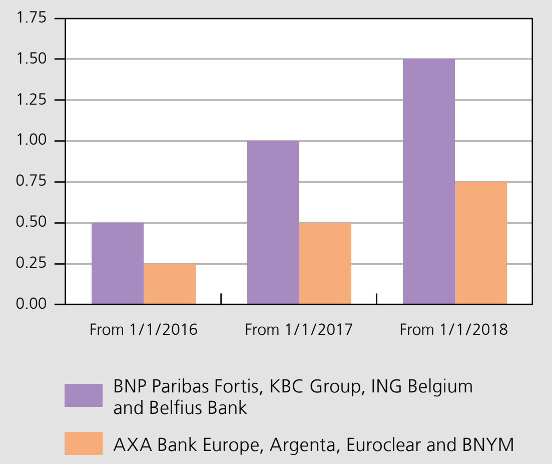
Country	Current buffer rate		Future buffer rate	
	Percentage	Entry into force	Percentage	Entry into force
Hong Kong	0.625	01-01-2016	1.25	01-01-2017
Sweden	1.50	27-06-2016	2.00	19-03-2017
Norway	1.50	30-06-2016	unchanged	
Czechia			0.50	01-01-2017
Slovakia			0.50	01-08-2017

Sources : BIS, ESRB.

relevant for signalling the rise in cyclical systemic risks [1], it seemed that neither credit developments nor the other indicators used implied any increase in the systemic risks during the year under review. The countercyclical buffer rate applicable to credit exposures on counterparties located in Belgium was therefore held at 0 % during that period. Each decision on the countercyclical buffer rate is submitted to the ECB and published every quarter on the Bank's website together with a selection of key indicators.

Belgian banks also have to apply the buffer rates imposed by foreign authorities on their credit exposures in those countries. The table above gives an overview of the current and future countercyclical buffer rates. During the year under review, in response to the ESRB's recommendation on recognising and setting countercyclical buffer rates for exposures to third countries, the Bank identified three third countries where those exposures were material (Turkey, the United States and Switzerland) and defined a framework for monitoring cyclical systemic risks in those countries.

CHART 102 LEVEL OF THE CAPITAL SURCHARGE FOR BELGIAN O-SIIS
(in % of the risk-weighted assets)



Source: NBB.

3. Domestic systemically important banks

Domestic systemically important banks (D-SIBs or "O-SIIs") [2] are banks whose failure could have a significant impact on the domestic financial system or on the country's real economy. In the fourth quarter of the year under review, on the basis of the methodology of the European Banking Authority (EBA), the Bank confirmed the list of eight Belgian O-SIIs drawn up in 2015. BNP Paribas Fortis, KBC Group, ING Belgium, Belfius Bank, Euroclear, AXA Bank Europe, Bank of New York Mellon (BNYM) and Argenta therefore retain their status as O-SIIs.

The first five banks were automatically designated as O-SIIs on the basis of their quantitative systemic importance score [3]. AXA Bank Europe, BNYM and Argenta were classed as O-SIIs according to information obtained from supplementary indicators. The supplementary indicators taken into account are the banks' share in deposits and loans in Belgium, in debts and claims with Belgian financial counterparties, and assets under custody. The choice of these supplementary indicators is justified because indicators which are national in scope are considered more appropriate for designating domestic systemically important institutions than European or global indicators. Moreover, the indicators imposed by the EBA do not always reflect the specific character of the business model, as in the case of BNYM, for example. The updated list of Belgian O-SIIs was published on the Bank's website.

The capital surcharges announced in 2015 for these O-SIIs and the phased introduction period still apply [4]. The high economic and social costs that failure of these institutions would entail are the reason for boosting their resilience by means of additional capital requirements. In 2017, the capital surcharge is 0.5 % of the risk-weighted assets for Argenta, AXA Bank Europe, BNYM and Euroclear, and 1 % for Belfius Bank, BNP Paribas Fortis, ING Belgium and KBC Group.

4. Recognition of macroprudential policy measures

The new ESRB framework on the voluntary reciprocity of macroprudential policy measures came into force during the year under review [5]. The macroprudential policy measures that a given country adopts generally concern

(1) See "Setting the countercyclical buffer rate in Belgium: A policy strategy" (www.nbb.be).
(2) In the EU legislation, the D-SIBs are called other systemically important institutions ("O-SIIs").
(3) That score is calculated as an aggregate of the mandatory indicators relating to the size, complexity, interdependence and substitutability of the banks, the indicators being assigned fixed weighting factors. When a bank's systemic importance score exceeds a certain threshold, the institution is automatically classified as an O-SII. Nevertheless, the authorities can use other indicators or apply different weighting factors to the indicators stipulated by the EBA to designate additional banks as O-SIIs. For a more detailed description of the EBA methodology, the reader is referred to the "Annual publication on the designation of Belgian O-SIIs and the capital surcharge to be imposed on them (1 December 2016)" (www.nbb.be)
(4) See the "Annual publication on the designation of Belgian O-SIIs and the capital surcharge to be applied (1 December 2016)". (www.nbb.be).
(5) ESRB Recommendation of 15 December 2015 on the assessment of cross-border effects of and voluntary reciprocity for macroprudential policy measures.

the banks of that same country. Conversely, they do not apply to branches of foreign banks established in the European Economic Area (EEA), nor to direct lending by foreign banks (via freedom to provide services). Reciprocity implies that the macroprudential policy measures of a given Member State apply equally to branches of foreign banks and to direct lending by foreign banks in that country.

The Bank adheres to this ESRB framework and issued a Regulation on that subject in 2016 [1], introducing a flexible recognition procedure for three types of macroprudential measures if the ESRB recommends their recognition. They are (1) national measures targeting macroprudential or systemic risk, adopted on the basis of Article 458 of the CRR; (2) countercyclical capital buffer rates in excess of 2.5 %, and (3) systemic risk buffers (if not specifically targeting systemically important institutions). During the year under review, the Bank thus recognised the 1 % systemic risk buffer applicable to positions on Estonia incurred via branches located in Estonia or by direct lending in that country. The Bank's decisions on the recognition of macroprudential measures adopted by other countries are published on its website.

5. Monitoring of the shadow banking sector and asset management

It is widely acknowledged that the shadow banking sector offers substantial benefits in leading to a diversification of funding sources for the economy, investment opportunities for investors and income sources for banks, as well as sharing of the direct risks among multiple investors. But the financial crisis demonstrated that if non-bank financial intermediation has characteristics comparable to banking activities, including maturity transformation and liquidity transformation, and leverage, it may become a source of risk. To be more specific, owing to connections with other financial institutions and with the real economy, adverse events in the shadow banking sector may lead to systemic risks.

In that context, it is necessary to provide a comprehensive overview of the shadow banking system in Belgium and the associated potential risks. The Bank was closely involved in the work at European level, and in 2016 it took part in the annual monitoring exercise concerning the shadow banking sector conducted by the Financial Stability Board (FSB). In the specific case of Belgium, the interconnections between shadow banking entities and the other financial and real sectors of the economy were studied. An internal working group was also set up jointly with the Financial Services and Markets Authority (FSMA), in order to comply with the recommendations of the High-Level Expert Group (HLEG) on the monitoring of (systemic) risks relating to the shadow banking system and the asset management industry. Subjects covered by the Bank's analyses include the contractual and non-contractual links between asset management vehicles and Belgian financial institutions, and the way in which they are treated for the purposes of risk management. The work will also lead to the devising of a framework for the regular monitoring of developments in the shadow banking sector and the asset management industry.

During the year under review, the shadow banking sector was delineated in accordance with the FSB methodology, which defines it as credit intermediation involving activities and entities (fully or partially) outside the regular banking system and for which there is therefore no formal safety net. It should be noted that this definition does not imply that the shadow banking sector is not subject to regulatory requirements; it is regulated differently and to a lesser degree than "traditional" banks. The FSB subsequently narrowed that definition by referring to a system of non-bank credit intermediation posing bank-like risks for the financial system. Those bank-like risks concern maturity transformation and liquidity transformation, leverage and credit risk transfer.

At the end of 2015, non-bank financial intermediation in Belgium amounted to € 1 219 billion, while bank assets totalled € 1 078 billion. The narrow measure of the Belgian shadow banking sector, as defined by the FSB methodology, stood at € 404 billion at the end of 2015, corresponding to 99 % of GDP and 37 % of bank assets. The narrow measure of the Belgian shadow banking sector consists largely of investment funds (€ 118 billion at the end of 2015), more specifically money market funds and other funds – with the exception of equity funds – which are almost all open-ended and therefore face the risk of sudden, large-scale unit redemptions, and investment by Belgian nationals in foreign funds (€ 179 billion at the end of 2015). This last category has been included in the Belgian shadow banking sector [2] since 2013 (no data are available for earlier years), as foreign funds are frequently offered by Belgian banks and are therefore closely linked to the Belgian banking world.

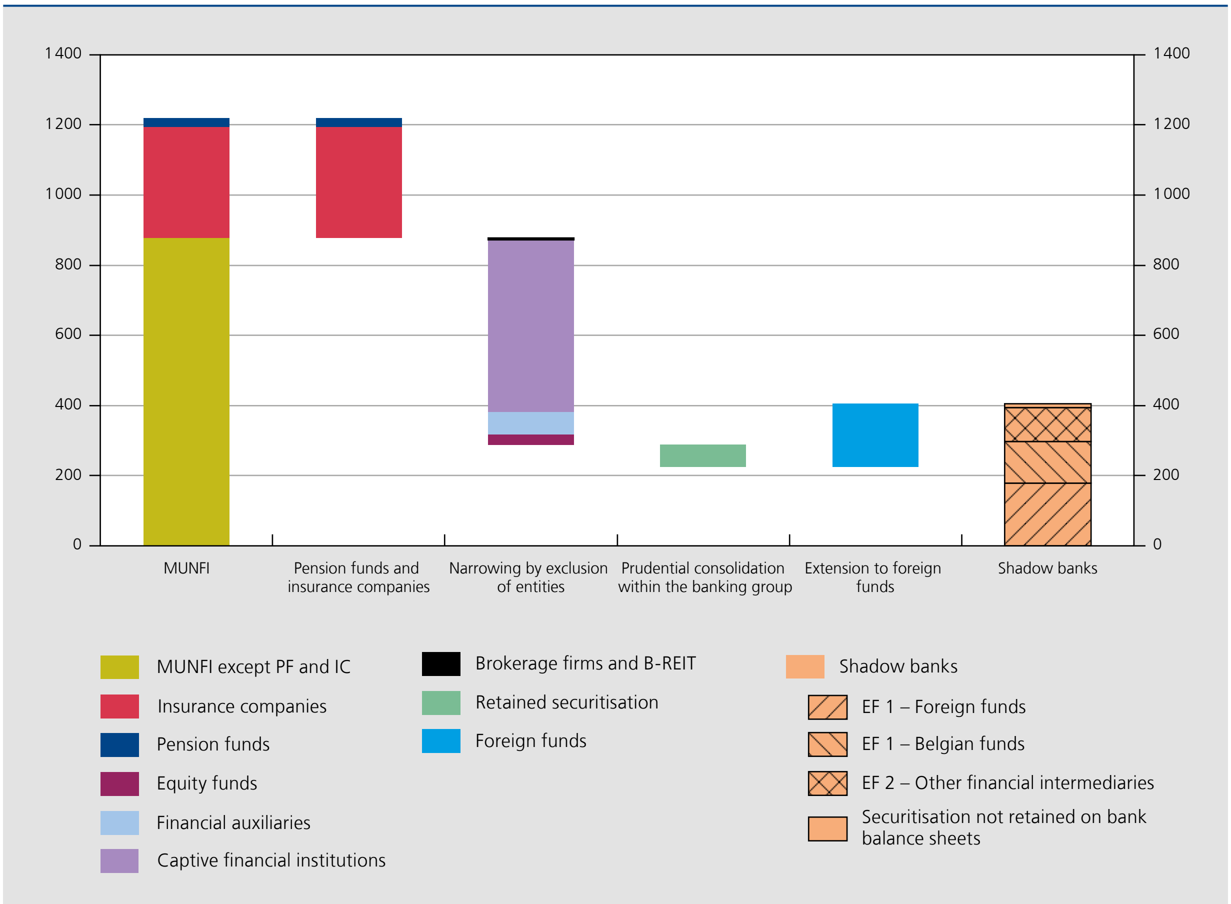
The second most important category of shadow banking system entities comprises other financial intermediaries

(1) National Bank of Belgium Regulation of 24 February 2016 on the recognition of macroprudential measures, approved by the Royal Decree of 20 May 2016. For more information, the reader is referred to the article "Reciprocity of macroprudential measures: general framework and application in Belgium" (www.nbb.be).

(2) It should be noted that this conforms exactly to the FSB definition of offshore funds: established abroad, managed/offered within the country.

CHART 103 DEFINITION OF THE BELGIAN SHADOW BANKING SECTOR ACCORDING TO THE NARROW FSB CRITERION

(at the end of 2015, in € billion)



Source: NBB.
MUNFI (Monitoring Universe of Non-bank Financial Intermediation)
PF: pension funds
IC: insurance companies
B-REIT: Belgian real estate investment trusts
EF: economic function

such as leasing and factoring companies, commercial credit companies, and mortgage lenders (worth € 97 billion at the end of 2015). This category has to be subdivided to isolate genuine shadow banking activities and distinguish non-consolidated entities [1]. Pending the completion of the statistical work, it was decided – out of prudence – to include them all in the narrow measure of the shadow banking sector. The third and final category of shadow banking activities covers securitisation not retained on the balance sheets of Belgian banks (€ 10 billion at the end of 2015) [2].

As already mentioned, as well as the monitoring of the risks associated with the shadow banking sector, the HLEG's recommendations also concern the asset management sector. That partly overlaps with the shadow banking sector, but the two concepts should not be considered interchangeably. While Belgian funds – except for equity funds – and investment by Belgian nationals in foreign funds are included in the Belgian definition of the shadow banking sector at € 118 million and € 179 billion respectively (in 2015), the total value of the asset management sector is estimated at around € 500 billion on the basis of a broad approximation, taking account of various links between Belgium and the different forms of asset management. In fact, asset management does not consist solely of funds and hence the collective management of assets, but also includes discretionary management and investment advice, as well as assets invested directly in

(1) Entities consolidated in a banking group for prudential purposes should be excluded from the shadow banking sector since they are already subject to regulation and appropriate supervision.
(2) Securitisation retained on bank balance sheets should be disregarded. Retained securitisation vehicles take loans from a bank and turn these into debt securities which are given back to the same bank for use as collateral for accessing central bank funding.

financial instruments on the basis of that advice. To arrive at an estimate of this sector's importance for Belgium, it was decided to interpret the link with Belgium in the broadest possible way; for example, for the funds concerned, that implies that the definition includes both funds under Belgian law and funds held by Belgians or managed in Belgium. For completeness, it should be noted that – apart from the direct inclusion of part of the asset management sector in the definition of the Belgian shadow banking system – an additional amount can also be included indirectly, since shadow banking entities entrust (part of) their assets to the asset management sector.