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**Working Paper**

## EU banks' journey towards an enhanced capital framework

EBA Staff Paper Series, No. 3

**Provided in Cooperation with:**

European Banking Authority (EBA), Paris La Défense

*Suggested Citation:* Melis, Alessandra; Weissenberg, Katrin (2019) : EU banks' journey towards an enhanced capital framework, EBA Staff Paper Series, No. 3, ISBN 978-92-9245-501-9, European Banking Authority (EBA), London,  
<https://doi.org/10.2853/0746>

This Version is available at:

<https://hdl.handle.net/10419/299508>

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N. 3 – MARCH/2019

# EU BANKS' JOURNEY TOWARDS AN ENHANCED CAPITAL FRAMEWORK

by Alessandra Melis and Katrin Weissenberg

## ABSTRACT

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This paper outlines the development of the European Pillar 2 framework and EU banks' capital positions since 2014. Motivated by concerns that have been raised over the years about excessive levels of required capital imposed on EU banks, we provide empirical evidence on the positioning of EU banks' capital levels relative to their requirements and expectations. Taking advantage of the information gathered by the EBA through supervisory reporting and a unique dataset collected as part of the EBA's policy work on Pillar 2 guidance, we perform a descriptive analysis of the capital margins that banks held in Q3 2017. We find that EU banks generally held ample margins of capital above regulatory requirements and expectations. As expected, we observe at times substantial differences across banks and countries.

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## KEYWORDS

Pillar 2 Framework; capital requirements; P2R; P2G; capital levels; capital margins; capital composition; transparency

# 1. Introduction

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Capital requirements imposed by regulators and supervisors on banks have increased in recent years at the global level and in Europe. This has led to substantial improvements in banks' solvency positions, with average total capital ratios in Europe increasing from 16.2% to 18.8% between Q4 2014 and Q2 2018. As a result, the banking sector is overall more resilient and better equipped to withstand negative shocks.

Nevertheless, some concerns have been raised that the required levels of capital may be excessive and pose an unjustified burden on banks. In particular, the introduction of Basel III at the global level and the common framework for the supervisory review and evaluation process (SREP) in Europe in 2014 (recently revised with the introduction of Pillar 2 guidance (P2G) as an additional capital expectation in Europe) have prompted questions on whether or not these additional safety nets may have unintended consequences for the banking sector and the economy as a whole. Many studies have been conducted over recent years on the impact of stricter capital regulation on economic activity. Among the unintended consequences, some literature suggests that higher capital requirements may lead to an at times substantial decrease in lending (at least in the short term) and, as a result, a decline in economic activity.<sup>1</sup>

This paper aims to provide an overview of the specific regulatory developments observed across the European Union (EU) in recent years and banks' progress in the context of tighter regulation. Based on supervisory data, we assess the capital positions of EU banks since 2014. In particular, we focus on capital levels and their relative positioning to capital requirements that were applicable in 2017, using a unique bank-level dataset on capital requirements.

The analysis focuses on a single point in time and solely on the developments in regulatory and supervisory capital requirements and reforms to date, without discussing the implications of any regulatory changes to be introduced going forward. We are mindful that further reforms may have important implications for the results. The output floor envisaged under Basel III from 2022, for instance, will have a potentially significant effect on the risk-weighted assets (RWAs) of banks using internal ratings-based models, and consequently capital ratios, but it does not feature in the present discussion. Nevertheless, we believe the analysis sheds some light on the impact of capital requirements on banks and may provide some indication on the likeliness of unintended consequences to date.

The paper is structured as follows: section 2 provides an overview of the international standards and European Pillar 2 (SREP) framework and its developments; section 3 describes the evolution of solvency positions at European banks over recent years and the capital margins they hold above their regulatory requirements, including the recently rolled out concept of P2G; and section 4 includes a brief discourse into transparency discussions related to the capital framework in the EU.

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<sup>1</sup> See, for example, Bridges et al., 2015. While some support the idea that this effect may be explained by a negative impact of higher capital requirements on profitability (from an increase in the cost of financing due to more capital holding), another positive view is that more capital increases the monitoring effort of the bank and therefore its performance (see de Bandt et al., 2014). Some recent work looking at the negative impact of higher capital requirements on bank lending, and also gross domestic product (GDP) growth, has emphasised the positive effects that higher capital requirements may have because of the reduced risk of financial crises leading to adverse GDP events (tail risks). Over time, the welfare improvement from a reduced risk of financial crises may well exceed the loss from lower average bank lending. See Adrian et al., 2019.

## 2. The European Pillar 2 Framework

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In what follows, we take a chronological approach to describing the development of the European Pillar 2 (P2) framework and the different capital requirements and expectations introduced: Pillar 2 requirements (P2R) and macroprudential capital buffers are described in section 2.2; and the recently rolled-out P2G is introduced in section 2.3.

### 2.1 International Standards

The global capital regulation known as Basel II Accord,<sup>2</sup> as reviewed in 2004, created a structure of three pillars for strengthening the soundness and stability of the global banking system.

The first pillar encompasses the minimum capital requirements applicable to all banks, setting out the rules by which regulatory capital should be calculated for credit, market and operational risks. P2, which defines the supervisory review process, aims to ensure that — on top of the minimum requirements — each institution holds sufficient capital to protect it from the risk inherent in its specific business model and which is not covered or adequately covered by the minimum (Pillar 1) capital requirements. Potential P2 capital add-ons are aimed at creating a capital buffer in addition to banks' minimum requirements, addressing inter alia risks that are not fully covered or are not considered at all under Pillar 1 (P1), and are based on supervisory review and assessment and banks' own risk assessment of idiosyncratic characteristics.

The third pillar complements the first and second pillars and requires banks to meet disclosure requirements related to the scope of application, capital, risk exposures, risk assessment processes and hence the capital adequacy of an institution, to allow market participants to assess key pieces of information.

The financial crisis that started in 2007 brought about an overall revision of the Basel II capital framework in all three areas, recognising weaknesses in certain areas of the existing framework, in particular in the definition of capital and explicit prudential capital buffers. By 2010, a new Basel III Accord<sup>3</sup> had been developed. In the EU, the CRD IV package (comprising the Capital Requirements Regulation (CRR) and the Capital Requirements Directive (CRD)) came into force in 2013 as the European implementation of the new Basel rules.

### 2.2 Implementation of international standards in the EU

Prior to the CRD IV package, different practices existed across the EU. To increase capital levels, some Member States extended the powers of existing EU regulation when transposing it into national law, including different definitions of capital and capital add-ons imposed beyond P1. This so-called 'gold plating' of certain provisions of EU regulations at the national level not only impeded the level playing field of the single market, but could not sufficiently address the specific risks that individual banks were exposed to, it being applied to all banks within a jurisdiction. Under the Basel II framework, banks were expected to have adequate levels of capital reflecting not only the minimum set of common risk factors, but also their own idiosyncratic risks, stemming from their specific business models and markets.

Furthermore, determining capitalisation levels based on banks' own calculations (under P1) did not achieve the policy objectives set by regulators, including increasing the overall level of capital within the system while ensuring a level playing field to a reasonable degree across banks. Experience over the years has demonstrated that the capability and appetite of institutions to carry out an objective assessment (on the risks that they face

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<sup>2</sup> Basel Committee on Banking Supervision, 2004.

<sup>3</sup> Basel Committee on Banking Supervision, 2010.

and the capital that they should hold against those risks) are not always adequate from the perspectives of the sector and the economy as a whole.

With a view to increasing the level of available capital, harmonising the various approaches and creating a level playing field in the spirit of Basel, risk-by-risk quantification of capital add-ons was implemented in the EU. The CRD transformed the broader global P2 concept into a requirement, rather than a buffer, to be quantified as an outcome of the SREP. The P2 capital requirement was introduced as an additional supervisory requirement but was set on a bank-by-bank basis, depending on each bank's individual risk.

In December 2014, the EBA published its guidelines on common procedures and methodologies for SREP. These aimed to provide more detailed guidance to European supervisors on assessing banks' risks and risk management practices as part of P2. The SREP guidelines also included guidance on the application of P2R, outlining, inter alia, a risk-by-risk approach and defining the risks to be covered by P2R.<sup>4</sup>

The P2 framework also defined the stacking order of various capital requirements, which is depicted in Figure 1 below. P1 requirements and P2R form the legally binding part of capital requirements for European banks, also known as the Total SREP Capital Requirement (TSCR), given the quantification of P2R through the SREP assessment. The binding nature of the TSCR implies that, upon breach, a bank will be subject to specific supervisory intervention powers, including the potential withdrawal of authorisation.<sup>5</sup>

In addition, banks are subject to a number of capital buffers of a macroprudential nature. The level of some of these buffers is defined explicitly in the legislation (e.g. the capital conservation buffer), while others are set individually by the respective macroprudential authorities. In contrast to P1 and P2 requirements, buffers by design can be breached under certain stressed conditions. However, banks are required to gradually rebuild their capital levels should they be temporarily unable to meet macroprudential buffers. Together with a bank's TSCR, the combined buffer requirement (comprising the capital conservation buffer (CCB), the countercyclical buffer (CCyB), the systemic risk buffer and the other systematically important institution (O-SII) and globally systematically important institution (G-SII) surcharges) forms the overall capital requirement (OCR) (also see Figure 1). The OCR includes very important metrics, since EU legislation links banks' freedom to distribute dividends, determine variable pay and determine payments on Additional Tier 1 (AT1) instruments to their ability to meet this ratio. The OCR acts as a trigger for calculating the maximum distributable amount (MDA).<sup>6</sup>

## 2.3 Supervisory discussions and additional developments in the EU since 2014

Notwithstanding the significant convergence of supervisory practices in the area of P2 over recent years, exchange and discussions at the European level on this topic are ongoing. The original SREP guidelines did not sufficiently harmonise the approach to determining P2R across the EU, for instance concerning the use of outcomes of supervisory stress tests when setting additional capital add-ons. P2R is intended to be neutral to the outcomes of supervisory stress tests and does not directly incorporate any capital shortfalls revealed by such outcomes. P2R is also intended to address unexpected (unstressed) losses over a 12-month period regarding risks not covered or not adequately covered by P1 requirements, in a similar fashion to the way in which P1

<sup>4</sup> CRD Article 107 provides the EBA with the mandate to draw up guidelines for competent authorities on the SREP (EBA, 2014).

<sup>5</sup> In case of a breach of P1 plus P2R, competent authorities should consider additional intervention powers in accordance with Directives 2013/36/EU and 2014/59/EU, including the withdrawal of authorisation; and a breach of the TSCR should be considered when determining whether an institution is failing or likely to fail. See European Commission 2013b and 2014.

<sup>6</sup> According to Article 141 of the CRD, Member States should prohibit institutions that fail to meet or exceed their combined buffer requirement from distributing more than their MDA. The latter is calculated based on the quartile distance of the CET1 capital from the OCR and the institution's distributable profits. See European Commission 2013b.

requirements are intended themselves. Therefore, the guidelines were still missing an element that explicitly addressed supervisory concerns in relation to the quantitative results of supervisory stress test outcomes, to also reflect concerns covering the next 3 years, under stress conditions.

With this in mind, P2G was developed and rolled out in Europe in 2016 in such a way that P2, as applied in the EU, was split into a binding part and a non-binding part. P2G was one of the main elements added to the updated SREP guidelines issued in July 2018.<sup>7</sup>

Figure 1: Stacking order of own funds requirements and P2G

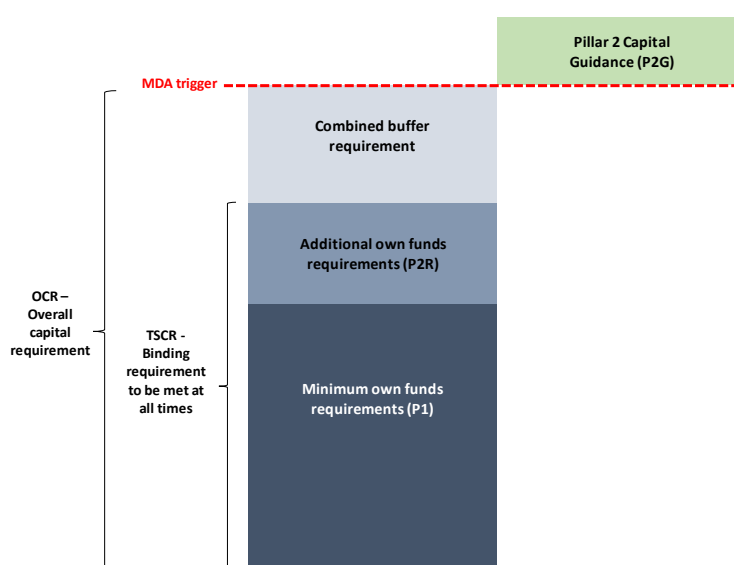


Figure 15 in the annex provides an overview of the timeline documenting when all the standards came into force.

One of the main differences between P2R and P2G is that the latter is defined as a capital expectation that sits on top of a bank's combined buffer requirement and is therefore not MDA relevant. It is to be met fully in Common Equity Tier 1 (CET1) and acts as an additional cushion to better protect banks' TSCR under stressed conditions. Actual capital levels falling below P2G do not lead to any automatic supervisory reaction, but the latter will depend on the circumstances under which such a situation occurs. This reflects the more flexible, countercyclical characteristic of P2G, aimed at making banks better prepared for stressed conditions.

Given this, P2G mirrors the more flexible nature of the Basel framework, in which the exact nature of P2 as a capital instrument is not explicitly specified but which provides the flexibility to use P2 as a softer buffer or requirement.

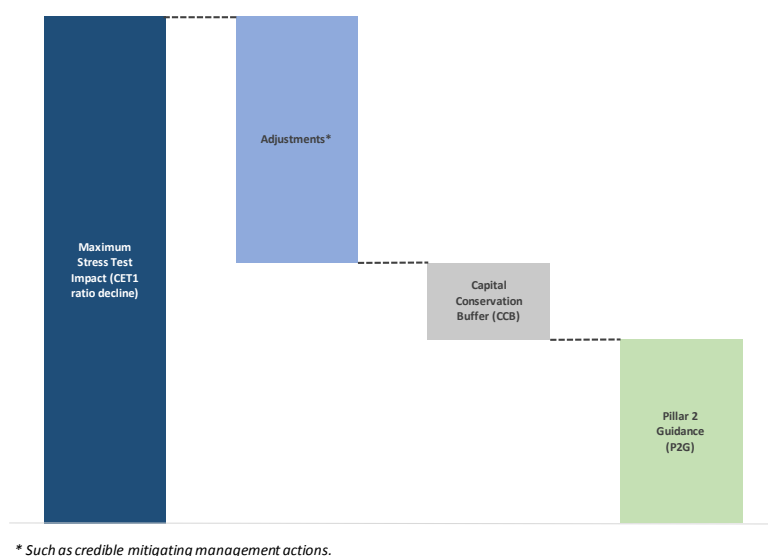
For the first time, in 2016, there was a possibility for supervisory authorities across the EU to use the results of the EU-wide stress test to set P2G. The maximum CET1 ratio decline during the worst year of stress is the starting

<sup>7</sup> EBA, 2018a.

point for the determination of P2G. As such, the concept of P2G is built around depletion amounts during the stress scenarios, rather than on a fixed threshold that an institution needs to meet throughout the stress scenario.<sup>8</sup> It is worth noting that the results of supervisory stress tests also strongly contribute to informing discussions with supervisors and individual banks, including relevant management actions (see below), such as how banks' capital planning may be affected by the stress.

Certain adjustments can be made to the quantitative stress test outcome to calibrate the final amount of capital guidance for each bank, which should be set fully in CET1. Adjustments are based on a broad set of institution specificities, such as balance sheet adjustments (given the existing constraints set by the static balance sheet assumption in some stress tests) or credible management mitigating actions. Other adjustments come from the full offsetting of the P2G against an institution's CCB, as both concepts have the same objective (the conservation of capital in times of stress), and also the CCyB in exceptional cases. The adjustment process described above is depicted in Figure 2.

Figure 2: Determination of P2G



*Note: The scale of the chart is indicative only, particularly in the context of Figure 1.*

While P2G is a significant step forward in regard to harmonising the way in which (quantitative) supervisory stress test results are incorporated into supervisory capital expectations of banks across the EU, its calibration arguably leaves room for substantial differences in treatments, not only across jurisdictions but also across banks. Furthermore, it may be argued that the merits of P2G are not always clear from the outset; not least in the context of the complexity it adds to the overall capital framework for banks, as well as the potential effects P2G may have on the markets.

<sup>8</sup> By definition of course the TSCR is a requirement to be met at all times. As such, it should be understood as a backstop for setting P2G: whenever the stress test depletion indicates a breach of the TSCR, P2G should be set in all cases. If the TSCR is not breached under the stress scenario, competent authorities may decide not to set P2G.



The explicit inclusion of stress test results in additional capital requirements has also recently been proposed in other jurisdictions (see Box 1).

#### Box 1: P2G and the US Federal Reserve's new concept of the stress capital buffer

The concept behind P2G is in some ways comparable to the US Federal Reserve's newly proposed stress capital buffer (SCB), which was announced during the summer of 2018. Both concepts provide quantitative guidance on stress test results and are calculated based on the largest capital (CET1) decrease during an adverse scenario (the severely adverse scenario in the case of the US Comprehensive Capital Analysis and Review — CCAR).<sup>9</sup>

If enacted, the SCB will replace the CCB and will be floored at the fully phased-in level of the CCB (2.5%). This is similar to the offsetting of P2G against the CCB in the EU: any P2G smaller than 2.5% will be fully offset and just the CCB of 2.5% plus any other applicable combined buffer element applies (resembling the US floor of 2.5% plus any other macroprudential buffers); in cases where P2G is larger than the CCB, the CCB plus any remaining P2G applies (resembling the SCB if the stress impact is larger than 2.5%).

One difference between the US and the EU is that in the US the outcome is one single concept (the floored SCB) that captures the stress test results (net of the CCB), as well as the CCB, and upon breach of the SCB there would be regulatory consequences in the form of distribution restrictions. By contrast, in the EU the CCB remains a separate concept and the stress test results are added on top, in the form of an additional concept of 'net' P2G (net because P2G accounts for any double counting of the CCB and any adjustments through offsetting). Falling below P2G does not trigger automatic supervisory consequences. This may explain why, according to surveys, EU banks react less to stress test results than US banks.<sup>10</sup>

## 3. The evolution of European capital Levels

### 3.1 Dataset

The paper mainly builds on EBA supervisory reporting data, ensuring a consistent dataset across banks since 2014. Figures prior to 2014 — when EBA regular supervisory data became available — reflect data from ECB reports and the EBA Risk Dashboard. EBA stress-testing data are also used.

In addition, this paper explores a unique dataset of capital requirements at the bank level, gathered by the EBA in 2017 as part of a survey for its policy work on P2. This allows an exploration of banks' position (actual capital levels) relative to applicable minimum capital requirements.

The P2 survey conducted by the EBA in 2017 was based on the sample of EBA reporting banks. The analysis in this paper looks at a subset of the original sample, created on the basis of criteria such as the availability of other data points needed for the analysis and the exclusion of outliers. The subset

<sup>9</sup> Calibrations for the SCB further take into account planned dividends.

<sup>10</sup> See Basel Committee on Banking Supervision, 2018.

consists of 146 banks from 29 countries for the TSCR and OCR margins, which represent just under 80% of total EU banking assets. For the P2G margins, the analysis looks at 124 banks from 24 countries, representing 73% of EU banking sector assets.

One drawback in the dataset used, and a limitation to the conclusions we can draw from it (but at the same time presenting a breeding ground for future analyses on the same topic), is the availability of data for only one point in time for banks' capital requirements. A longer time series on applicable capital requirements would allow a more comprehensive perspective on the evolution of banks' actual capital levels over their capital requirements (to be explored below) and how these have developed in the context of changing capital requirements. This is not possible with the currently available data.

## 3.2 EU banks' capital levels since the crisis

Capital levels in the EU have increased continuously since the crisis. Total capital (TC) ratios — that is, the sum of the capital held by a bank qualifying as Tier 1 (T1) and Tier 2 (T2) capital — increased from an EU average of 11.7% in 2008 to 19% by Q3 2018.<sup>11</sup>

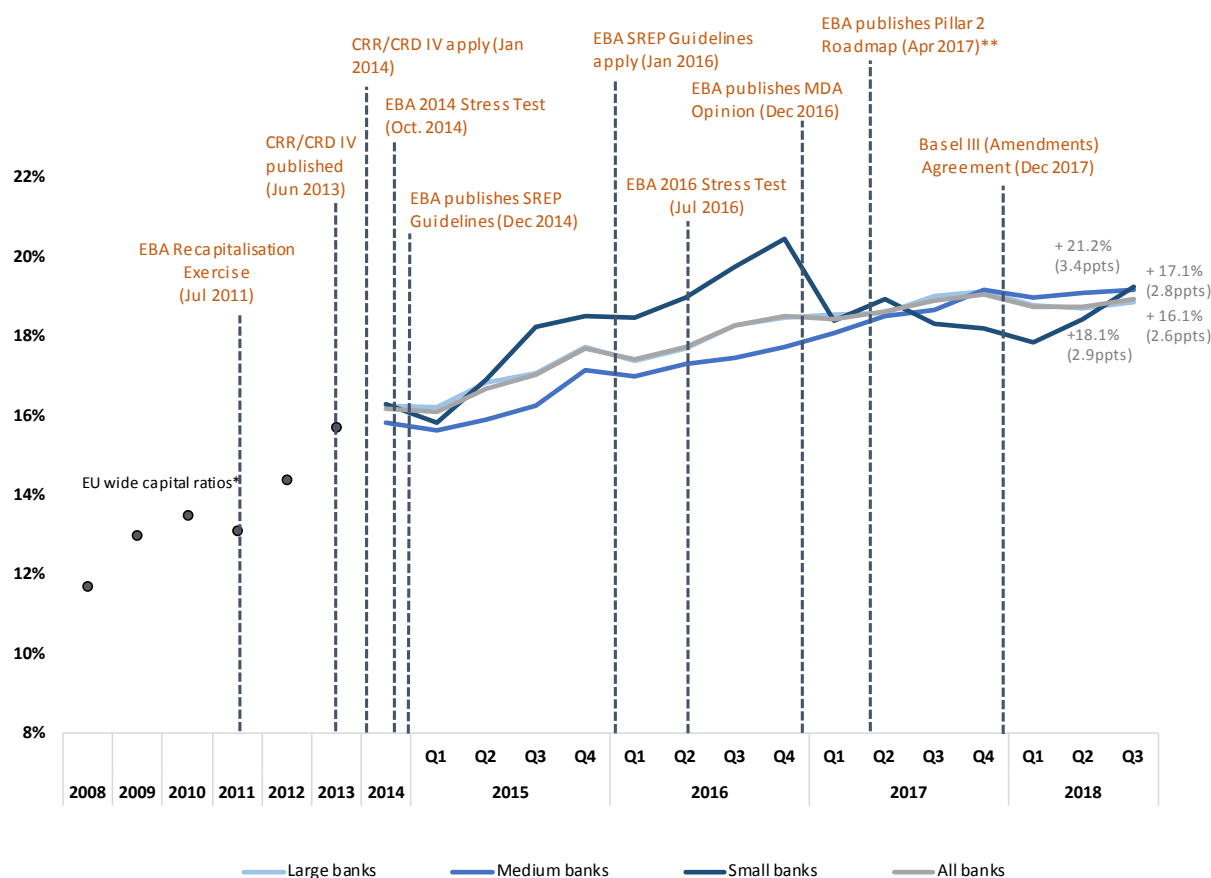
Capital positions were fairly similar among different groups of bank sizes in Q3 2018, all around 19%. Medium-sized banks show the largest increase over the period, by 21%, or 3.4 percentage points (ppts), to 19.2% in Q3 2018, although they have been trending below the other groups, since Q4 2014, for a good part of the period. Average TC ratios for the group of small banks and for large banks stood at 19.3% and 18.9%, respectively, as of Q3 2018. Large banks are driving the EU average (see Figure 3). The group of small banks saw a substantial increase to above 20% in its average TC ratio up until Q4 2016. This trend reversed somewhat in Q1 2017, but this group once again showed the largest increase during the last quarters. Until Q4 2017, the average EU TC continuously increased over the period, with a small dip experienced during the first two quarters of 2018, though this reversed again in Q3 2018. The average TC ratio increased by 17.1%, or 2.8 ppts, between Q4 2014 and Q3 2018.

Figure 3 further provides an overview of the developments in P2-related regulation, guidance and supervisory exercises since the crisis. While no particular pattern of an immediate increase in capital following a specific announcement or publication can be observed, two (not mutually exclusive) processes may arguably be behind EU banks' improved solvency positions: on the one hand, the ongoing recapitalisation and de-risking at banks, partly boosted by recapitalisation exercises and stress tests; and, on the other, the new capital requirements and regulations that may have prompted banks to gradually adapt their internal capital planning.

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<sup>11</sup> In this section, average capital ratios refer to weighted average capital ratios.

Figure 3: Capital developments in the EU 2008-2018 — TC ratios



\*\*P2G concept is introduced.

\*First COREP quarterly reporting data in Q1 2014. Data taken from the ECB's report EU Banking Sector Stability — August 2009 and the EBA Risk Dashboard used for prior annual data points.

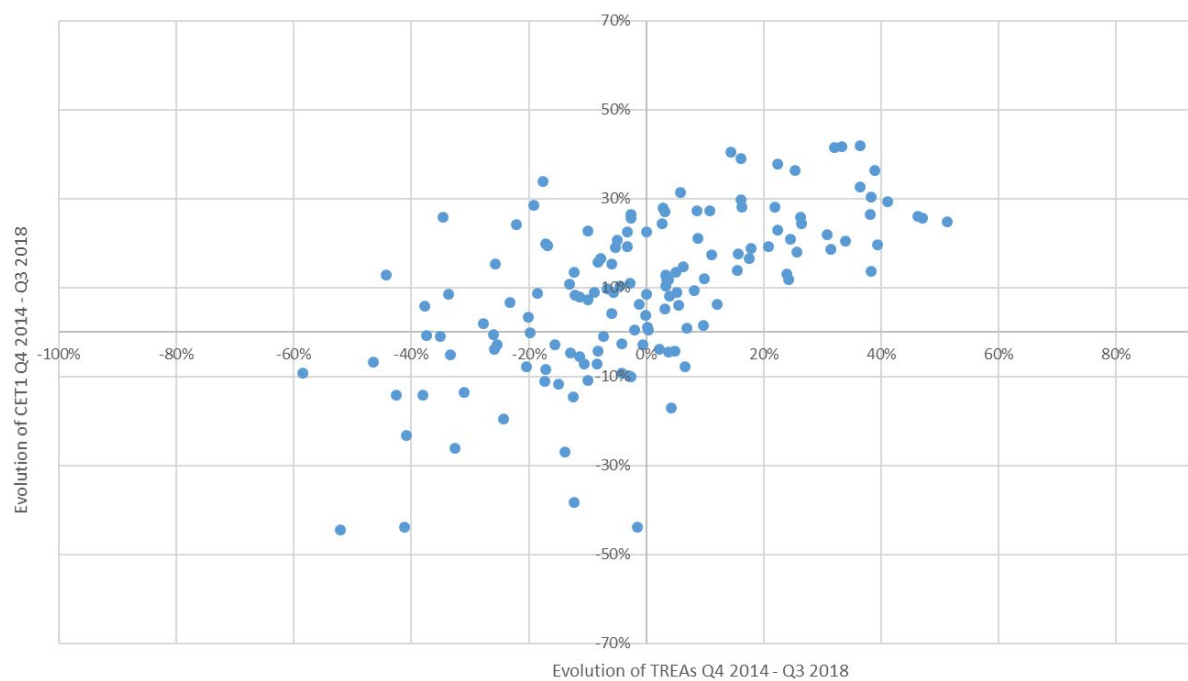
Sources: ECB 2009, EBA 2018b, EBA COREP Reporting Data.

Note: Weighted averages. Banks are classified by size class, according to their average total assets between December 2014 and September 2018. Non-FINREP banks are assigned to the bucket of small banks. The sample varies over time because the samples of reporting banks change.

To investigate how much the improved solvency positions are driven by de-risking versus actual capital increases, we performed an analysis on the total risk exposure amounts (TREAs) versus capital developments on a bank-by-bank basis. Figure 4 shows that on a bank-by-bank basis the improvement is driven by both an increase in capital and a reduction in TREAs.<sup>12</sup> An increase in CET1 capital is evident and quite consistent across EU banks (most data points are in the top quadrants).

<sup>12</sup> Note the samples in Figure 3 and Figure 4 are not exactly the same (due to reporting samples changing over time).

Figure 4: Evolution of TREAs and CET1 capital from Q4 2014 to Q3 2018



Sources: EBA Supervisory Reporting.

Note: The sample includes a subset of the wider sample of EBA reporting banks. The 143 observations included in this chart were selected based on the availability of the data.

The increase in risk amounts observed in recent years (right-hand-side quadrants) has been partially driven by an increased use of macroprudential tools, in the form of national discretions and options, which may be applied on the basis of national circumstances. These tools allow Member States to request that banks modify the risk weights or risk parameters for some asset classes based on financial stability considerations (see Articles 124, 164 and 458 of the CRR<sup>13</sup>). While all of these options and national discretions have been applied in the past years, not all of them are required to be included as a separate item in supervisory reporting. Article 458 of the CRR is so far the only one of the three tools for which supervisory reporting data are available.

The use of Article 458 of the CRR is triggered by the identification, in one specific EU Member State, of changes in the intensity of macroprudential or systemic risk in the financial system that have the potential to have serious negative consequences for the financial system and for the real economy.<sup>14</sup> This may then trigger the application

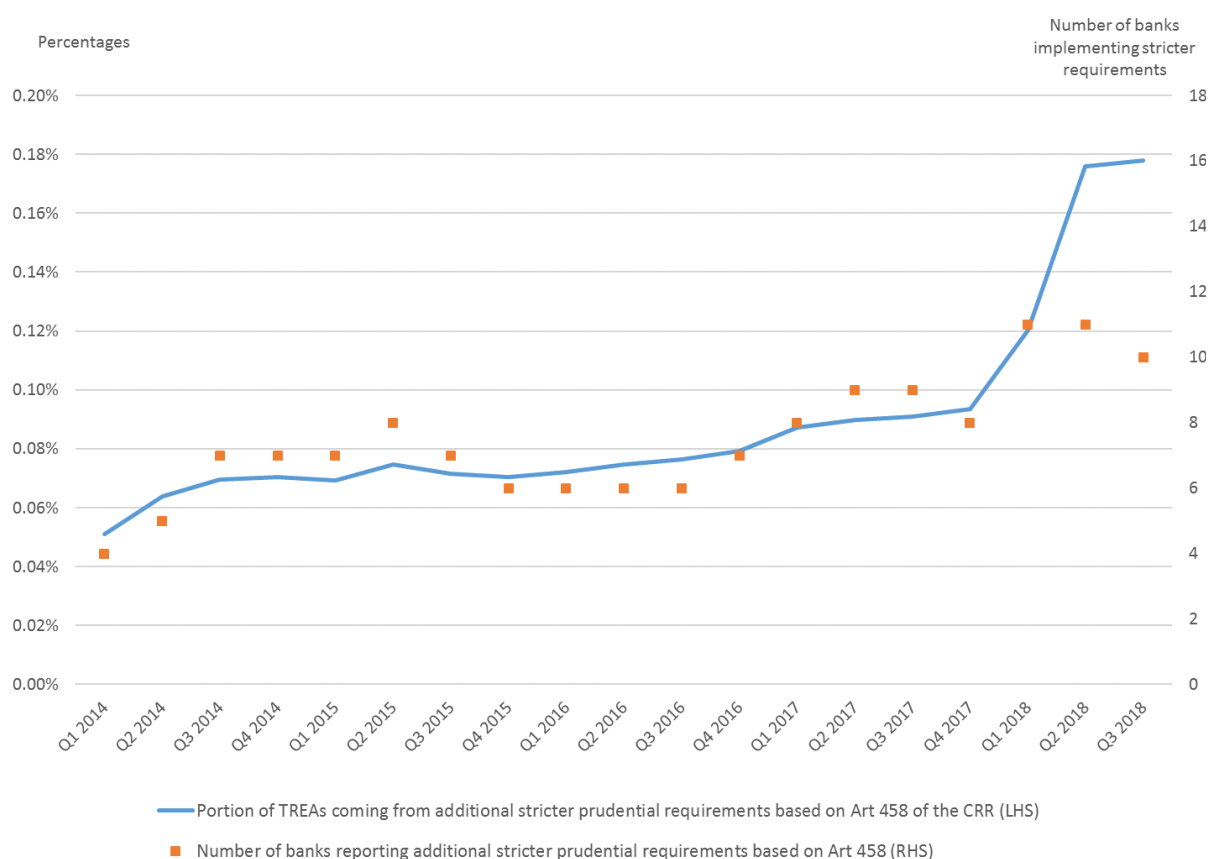
<sup>13</sup> Article 124 encompasses the possibility of applying higher risk weights (from 35% to 150%) on exposures secured by mortgages or immovable property on the basis of financial stability considerations; Article 164 permits competent authorities to make an upward revision to the minimum amounts, set by the CRR, for exposure weighted average loss given defaults for certain retail exposures secured by residential and commercial property, on the basis of financial stability considerations; Article 458 covers measures on, inter alia, risk weights for targeting asset bubbles in the residential and commercial property sector (if Articles 124 and 164 and macroprudential buffers cannot adequately address the risk identified). See European Commission, 2013a.

<sup>14</sup> Article 458(2) of the CRR. See European Commission, 2013a.

of stricter national measures on, for example, risk weights for targeting asset bubbles in the residential and commercial property sector (sometimes in the form of a floor or an add-on to the calculation of RWAs).

Figure 5 below shows how the portion of aggregate TREAs in Europe, along with the number of banks, affected by the application of Article 458 changed over time. We can see some impact of macroprudential measures on TREAs, the former accounting for 0.18% of aggregate EU TREAs in Q3 2018, up from 0.05% in Q1 2014. This appears to be a relatively limited impact, but it is still early days for countries' application of these measures. In addition, data on macroprudential measures may be incomplete, as it is a relatively new reporting requirement. Nevertheless, as both the number of banks reporting — up from four banks in Q1 2014 to 11 banks in Q2 2018 and 10 banks in Q3 2018 — and the amount of notifications provided to the EBA suggest, there has been an increase in the use of this measure. Competent authorities are becoming ever more aware of the need to recognise potential changes in the level of macroprudential or systemic risk in the financial system, to prevent the build-up of excessive risks by institutions through macroprudential measures.

Figure 5: Portion of EU TREAs for which stricter macroprudential requirements under Article 458 CRR apply (percentages) and number of banks affected since Q1 2014



Sources: EBA Risk Dashboard; EBA Supervisory Reporting.

### 3.3 EU banks' margins above capital requirements

EU banks' choice of the actual level of capital ratios to hold depends on a number of aspects. While regulatory requirements are clearly a key driver, there are additional idiosyncratic factors that influence banks' choice of internal capital 'targets'. A number of idiosyncratic elements such as a firm's strategy, business model, macroeconomic environment and aversion to risk are only some of the firm-specific factors taken into account when setting the internally desired (or 'target') capital ratio.<sup>15</sup>

However, the increased attention paid to the evolution of capital regulation in Europe could have possibly led to a shift in the way banks set their capital targets, the voluntary margins they hold above supervisory expectations and the quality of capital they hold.

Using a dataset of 146 banks from 28 EU countries plus Norway, we explore how much banks' capital levels actually sit above their capital requirements. In particular, we explore the margins above the TSCR and the OCR. Throughout this analysis, margins are calculated by using actual capital ratios in Q3 2017 and comparing them to capital requirements applicable as of Q1 2017, assuming that banks need about 6 to 9 months to adjust their target and actual capital levels following the communication of P2R.<sup>16</sup> Throughout the paper, margins are defined as the ppt difference between actual capital ratios and required capital ratios.

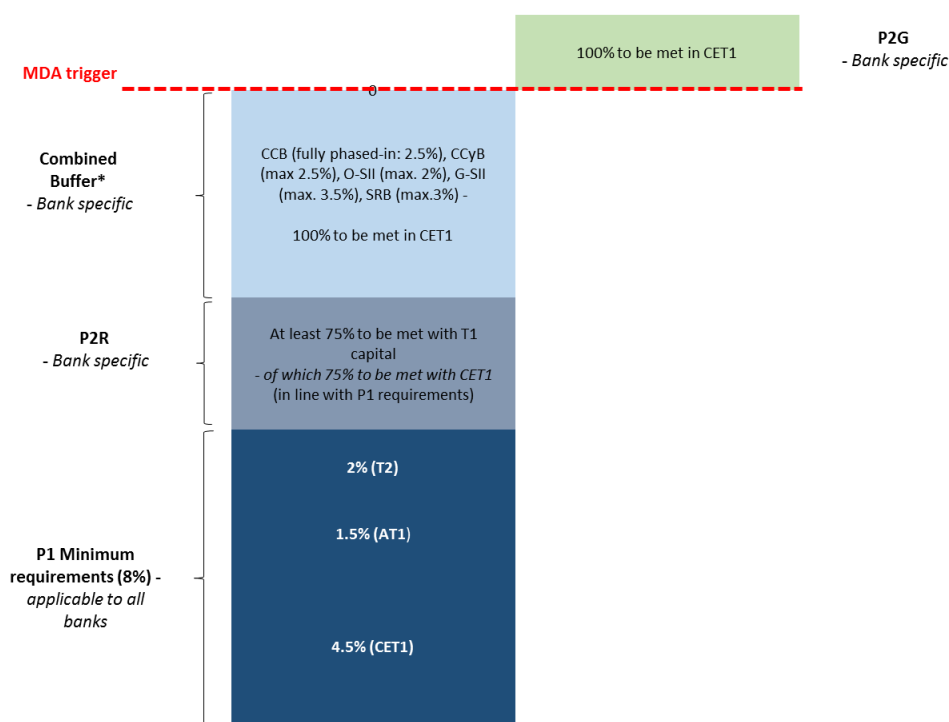
#### Box 2: Composition of capital requirements

The analysis in this section focuses on banks' ability to meet their total capital requirements, as shown in Figure 6, which replicates the stacking order presented in Figure 1 and also includes details on the size of some of the various capital requirements and buffers and the eligible capital for meeting such requirements.

<sup>15</sup> See De-Ramon et al., 2016.

<sup>16</sup> For some countries where the capital joint decision cycle implies that capital requirements change between Q1 and Q3 2017, margins have been established for Q1 2017. This approach has also been followed for those countries where the cycle was not entirely clear. However, the banks for which this approach has been followed account for only around 13% of the sample. For confidentiality reasons, countries are presented in an anonymous way.

Figure 6: Capital requirements continued: capital quality in the stacking order



*\*Note: We list all possible buffer elements. The final amount of the buffer and whether certain buffer elements are counted cumulatively or offset against each other is bank-specific and determined according to the CRD from Article 128 onwards.  
The scale is indicative only.*

Pursuant to Article 92 of the CRR, the 8% P1 own funds requirement is always to be met with at least a minimum T1 capital of 6%, of which at least 75% must be CET1 (i.e. a 4.5% minimum P1 CET1 ratio and consequently a maximum 1.5% AT1), plus 2% T2 capital.

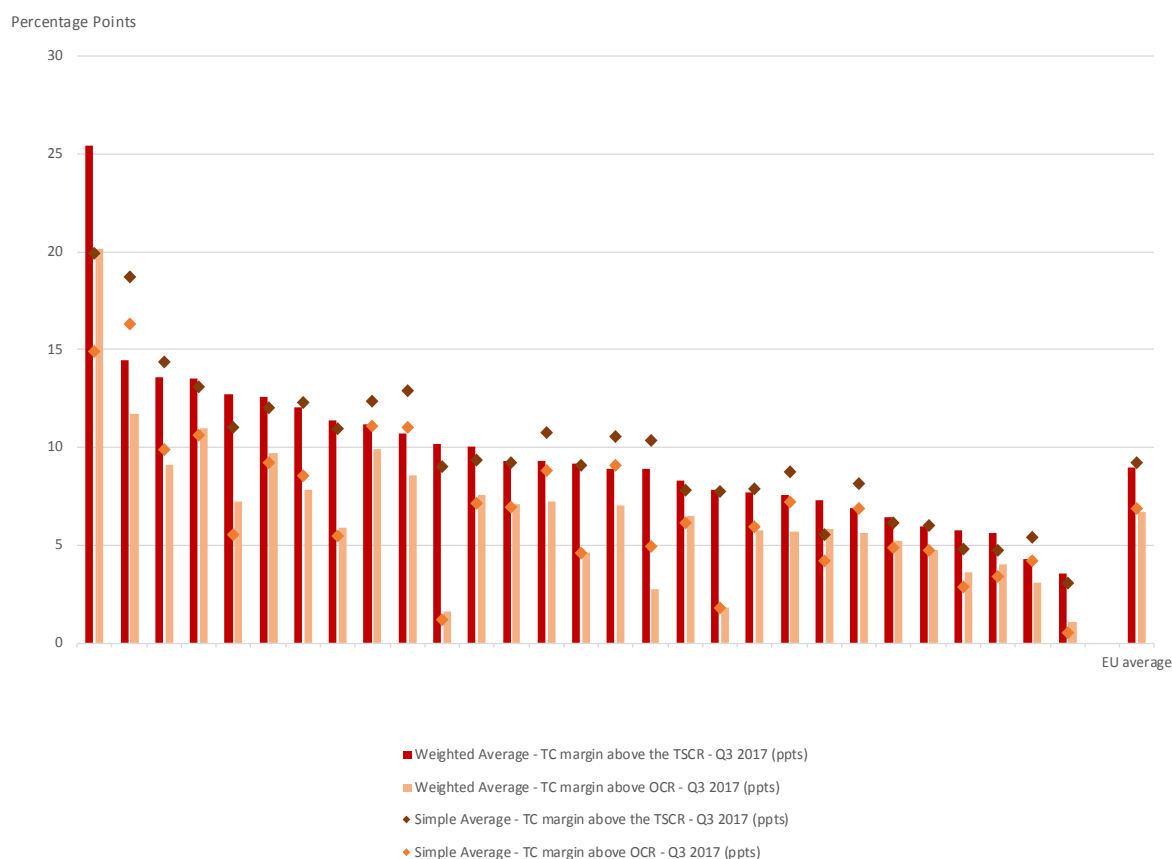
Similarly, the institution-specific P2R should also be met with at least 75% (analogous to the 6% of the 8% for P1) of T1 capital, of which again at least 75% (analogous to the 4.5% of the 6% for P1) should be met with CET1 capital, while the institution-specific combined buffer and P2G are to be fully met in CET1. No double counting of capital towards the various capital requirements is allowed, and a shortfall of lower quality capital instruments is to be filled with capital of better quality if available. This has been taken into account in our analysis below.

### 3.3.1 Total capital margins above the TSCR and the OCR

EU banks in our sample generally held capital comfortably above their TSCR and OCR requirements in 2017. The weighted average EU margin for TC ratios above the TSCR was 8.9 ppts.<sup>17</sup> As expected, at the country level the picture varies. Average country margins above the TSCR range between 3.6 ppts and 25.4 ppts. For TC margins above the OCR, the corresponding EU average is 6.7 ppts, while country averages range between 1.1 ppts and 20.1 ppts.

The simple average TC margins above the TSCR and the OCR are 9.3 ppts and 6.9 ppts, respectively. Not accounting for the size of the banks leads to somewhat higher EU averages, implying that larger banks tend to hold lower margins. At the country level, there are also cases where we observe that larger banks seem to hold higher margins (e.g. all countries for which simple averages are lower than weighted averages; see, for example, the country to the far left).

Figure 7: EU banks' margin above TC capital requirements, by country (Q3 2017)



*Note: Weighted country averages represent average margins, weighted by banks' assets within each country. Countries are sorted by the largest TC weighted average margin over the TSCR.*

*The EU weighted average is the average of banks' margins weighted by banks' assets across the entire sample.*

<sup>17</sup> Unless explicitly stated otherwise, in the following sections, the 'average margin' refers to the weighted average (by assets).



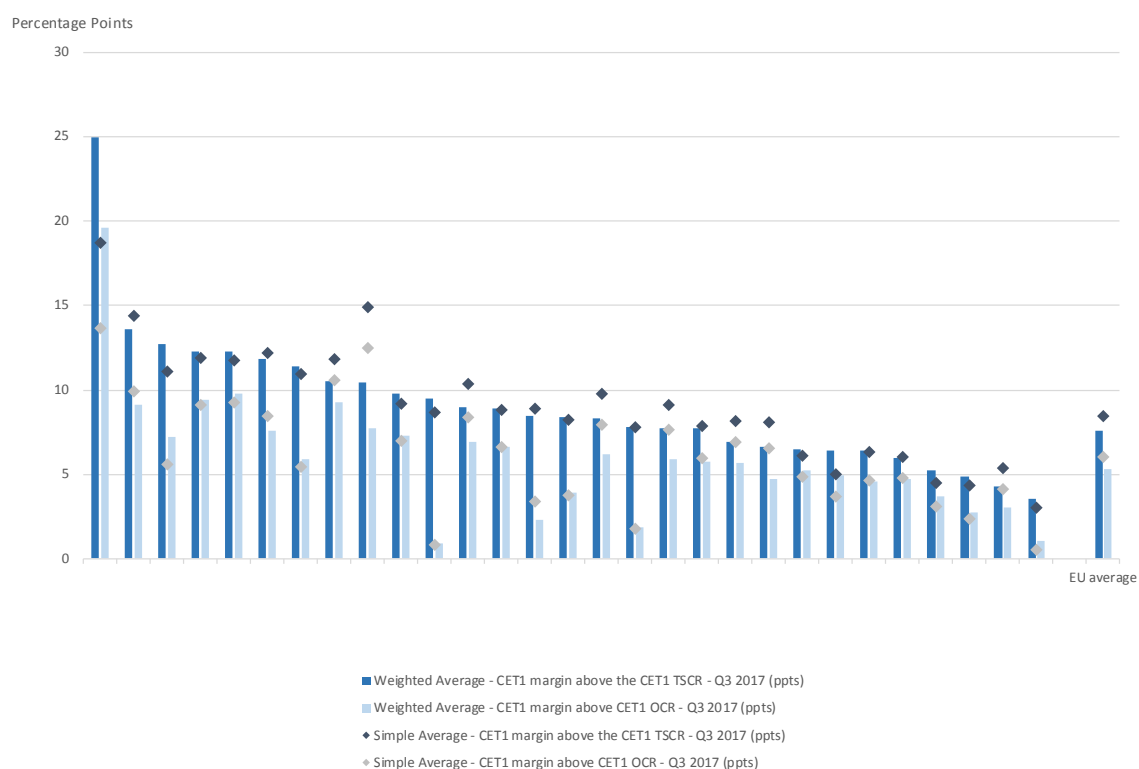
### 3.3.2 CET1 margins above the TSCR and the OCR

Since the global financial crisis, banks have been focusing in particular on the build-up of 'higher' quality capital, CET1. This is not surprising, considering the focus of the Basel III reform on capital of the highest quality and the choice to require banks to comply with several requirements and buffers exclusively holding CET1 instruments — such as the combined buffers or, as seen in some jurisdictions, to a large part, the P2R as well.

Indeed, CET1 levels are on average well above the portion of the TSCR and the OCR to be held in CET1. Average margins for the EU are 7.6 ppts and 5.3 ppts for the TSCR (in CET1) and the OCR (in CET1), respectively. Average country margins range between 3.6 ppts and 24.9 ppts for margins above the TSCR and between 1.1 ppts and 19.6 ppts for margins above the OCR.

Again, for the EU as a whole, simple averages are slightly higher than weighted averages. The simple average CET1 margins above the TSCR are 8.4 ppts and 6.1 ppts, respectively. The fact that the difference between simple and weighted averages is higher for CET1 margins both across the TSCR and the OCR would suggest that smaller banks tend to hold more of their capital in CET1. At the country level, the picture is again mixed.

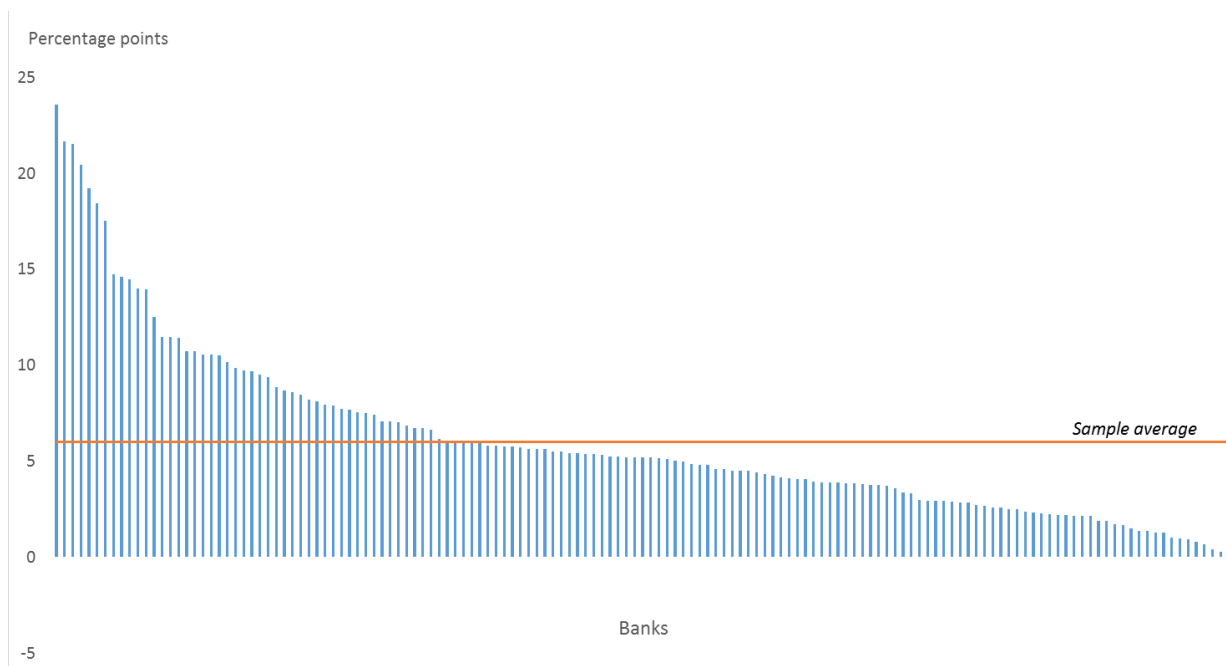
Figure 8: EU banks' margin above CET1 capital requirements by country (Q3 2017)



*Note: weighted country averages present average margins, weighted by banks' assets within each country. Countries are sorted by the largest CET1 weighted average margin over the TSCR. The EU weighted average is the average of banks' margins weighted by banks' assets across the entire sample.*

When looking at bank-by-bank data, substantial heterogeneity is observable across banks. As of Q3 2017, one bank in our sample had a negative margin of CET1 over CET1 TSCR, while two banks hit their MDA trigger (negative CET1 margins over their respective OCR in terms of CET1; see Figure 9). Negative margins were not major but still about 0.4 ppts for the TSCR and 0.2 ppts and almost 3 ppts for the OCR. The picture is the same for the number of banks falling below their TSCR and OCR in Q3 2017 in terms of TC.

Figure 9: CET1 margins over OCR requirements by bank (as of Q3 2017)



### 3.3.3 Composition of capital held by banks

Any shortfalls in AT1 and T2 are accounted for when calculating the ability to meet own funds requirements. This means, in cases where an institution's AT1/T2 capital levels are insufficient to meet the respective AT1/T2 requirements, CET1 capital is used to meet the P1 and P2 requirements of AT1 and T2, subsequently reducing the amount of CET1 available to be used for meeting the TSCR, the OCR and P2G.

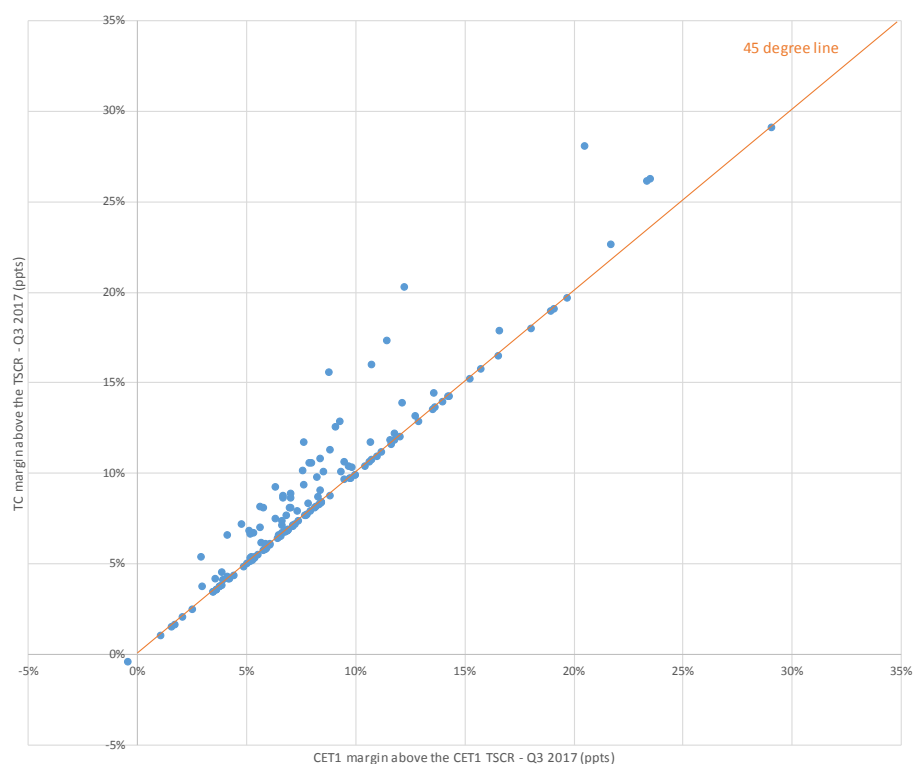
The composition of capital that banks hold determines whether there is a difference between the CET1 margins and the TC margins. The margins are the same whenever banks face an AT1/T2<sup>18</sup> or hold exactly the AT1/T2 needed for meeting the respective requirement. However, the CET1 margins differ from TC margins when a bank holds more in AT1/T2 than the AT1/T2 amounts required.<sup>19</sup>

Figure 10 shows that, for the majority of banks in our sample, the two margins are the same or very similar (that is, most banks lie on the 45-degree line or in close proximity). This confirms the picture provided in Figure 7 and Figure 8 where country averages of CET1 and TC margins were in many cases very similar or the same. This would suggest that most of the banks in our sample hold the majority of their capital in CET1.

<sup>18</sup> Either a shortfall in both AT1 and T2 or a shortfall in either AT1 or T2 only (depending on the corresponding levels of T2 and AT1, respectively). Only a small portion of banks in our sample do not present AT1/T2 shortfalls, which means they do not have to make use of CET1 capital to 'cover' AT1/T2 shortages.

<sup>19</sup> This could be a surplus in both AT1 and T2, a surplus in T2 only or a surplus in AT1 only, which is greater than any potential T2 shortfall.

Figure 10: TC and CET1 margins above the TSCR



Further analysis on shortfalls of AT1/T2 may be useful going forward to shed light on banks' internal capital targets. In other words, it would be interesting to understand how banks factor the various tiers of capital of their respective regulatory requirements into their capital planning.

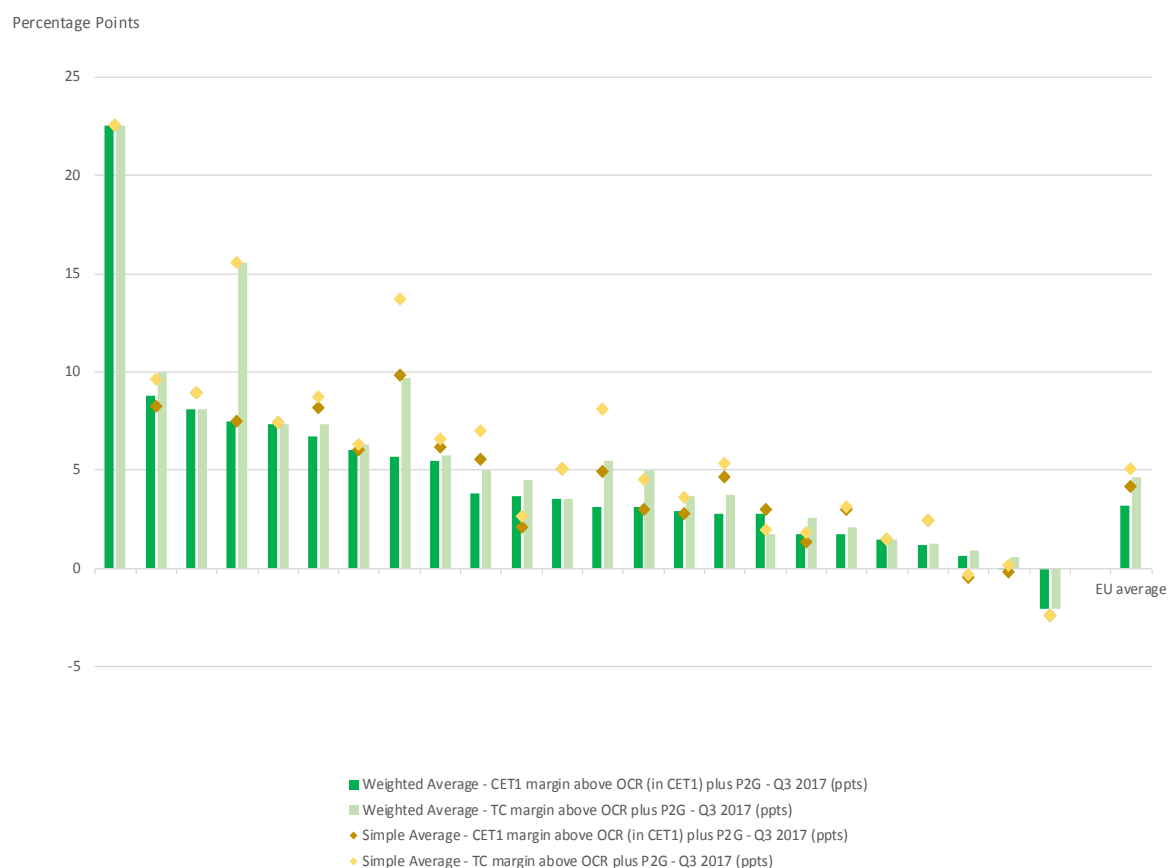
### 3.4 Banks' margins and P2G

Finally, capital positions are compared with the newly introduced concept of P2G, measured again by the margin of institutions' actual capital levels over their capital requirements and expectations. P2G has been the subject of some discussions by both banks and competent authorities. It is often argued that it presents yet another burden on institutions in an ever-increasingly regulated environment and an additional complication to the already existing layers of capital requirements.

For this analysis, the sample is smaller than for the analysis conducted in sections 3.3.1 and 3.3.2, as P2G had not yet been applied by all competent authorities in 2017.<sup>20</sup> The new sample comprises 125 banks from 24 countries. In some jurisdictions, the P2G applicable in Q1 2017 was not based on quantitative stress test results. Therefore, P2G levels are not fully comparable.

<sup>20</sup> Note that the concept of P2G is applicable as of January 2019.

Figure 11: EU banks' capital margins above P2G expectations (Q3 2017)



*Note: Weighted averages present country average margins weighted by banks' assets within each country. Countries are sorted by the largest CET1 margin over P2G. Only includes countries where P2G has been applied. For countries where P2G has been applied only to some banks, banks to which no P2G has been applied are excluded from the weighted average. Where P2G has only been applied to one bank, the figure reflects that bank's margin. The EU weighted average reflects the average of banks' margins weighted by banks' assets across the entire sample.*

The EU average of banks' capital margins above their P2G expectations was at 3.2 ppts and 4.6 ppts for the CET1 and TC margins, respectively, with more than one third of the countries in this new sample showing a distance greater than 4 ppts.<sup>21</sup> The simple averages are again slightly higher at 4.1 ppts and 5 ppts, respectively, for the TC and CET1 margins.

The fact that P2G is a capital expectation, and not a requirement, implies that falling below P2G triggers closer supervisory dialogue rather than automatic actions. It would appear that EU banks are generally well prepared for the new capital expectations, with actual capital levels as of Q3 2017 in most cases above institutions' OCR plus P2G levels.

However, 16 banks have TC levels below their P2G expectations, with the largest negative margin at 6.2 ppts, even though negative margins are less than 2 ppts in the vast majority of cases. Twenty-one banks also show a negative margin when looking at P2G expectations and actual capital levels in CET1 only (with the largest negative

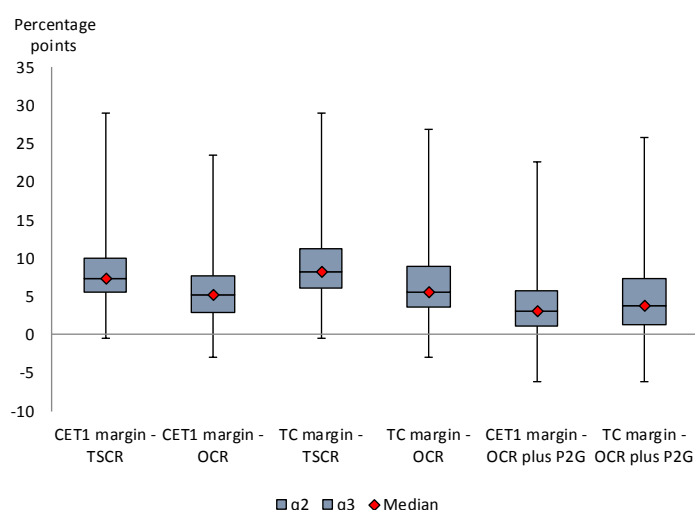
<sup>21</sup> Discrepancies observed for some countries in the differences between the average TC margins and the average CET1 margins across the OCR and the OCR plus P2G stem from the differences in samples for certain countries mentioned above.

margin at 6.2 ppts). This can be linked to the relative novelty of the concept, but it is also consistent with the less stringent nature of P2G.

As with the margins above the TSCR and the OCR, no large differences are observed for simple averages versus weighted averages for the EU as a whole. Nevertheless, in several countries margins again look more favourable when not taking into account the size of the banks, implying that larger banks tend to have a lower margin over their P2G levels in several countries.

The general picture observed at the EU level in the last sections suggests that the EU banking sector — on average — saw reasonable capital levels at the time to which the analysis refers. In addition, Figure 12 again demonstrates the heterogeneity observed across banks, with the top and bottom whiskers up to 32 ppts, apart from the P2G TC bar, implying that banks' total capital margins above P2G expectations varied by up to 32 basis points across banks.

Figure 12: Distribution of banks' margins over various capital requirements



### 3.5 Margins and banks' characteristics

In the last step, our analysis investigates whether or not banks in the sample show any common characteristics that may explain any potential similar patterns in capital margins over requirements.

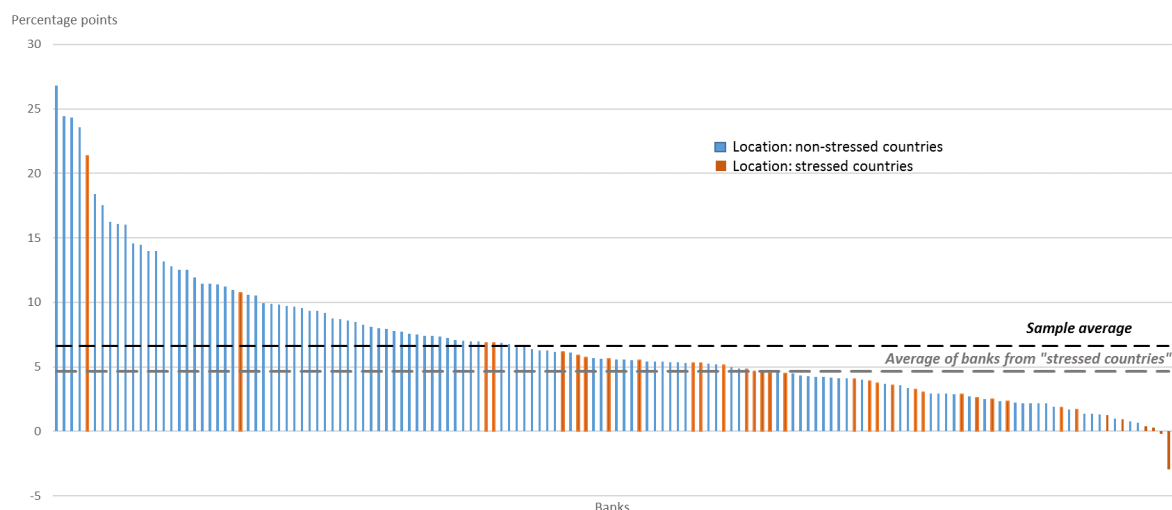
First, we look at geography, that is the geographical location of banks in the sample, sorted by their margin level.<sup>22</sup> From Figure 13, we observe that banks in the most economically distressed countries during the European debt crisis ('stressed countries'<sup>23</sup>) seem to have lower margins than banks in other EU jurisdictions.

<sup>22</sup> The margin of reference used for this analysis is the TC margin above the OCR, and the date of observation for the newly accounted variables was Q3 2017.

<sup>23</sup> The countries of Greece, Ireland, Italy, Portugal, Italy, Ireland, Greece and Spain.

This suggests that this group of banks might encounter challenges in increasing their levels of capital or might face higher capital requirements, or indeed a combination of the two.

Figure 13: TC margin above the OCR (Q3 2017) ordered by country of origin



*Note: Sample averages present average margins, weighted by banks' assets, consistent with previous charts.*

For the rest of the bank characteristics tested, we look at correlation coefficients. The purpose is not to show any causal relationships and what share of the margins can be explained by individual indicators, but to investigate whether banks with certain features are more or less likely to report higher or lower margins above capital requirements.

The rest of the variables selected are characteristics for which literature or theory suggests certain implications for capital ratios. We look at size (total assets), riskiness (non-performing loans (NPLs), RWAs density), profitability (return on equity (ROE)) and business models (net gains on financial assets and liabilities held for trading/net interest income/net fee and commission income to total net operating income, mortgage volumes and the debt-to-equity ratio).<sup>24</sup>

For instance, size is an indicator often associated with banks' capital ratios.<sup>25</sup> Some literature suggests a negative correlation between capital ratios and size, giving the following as possible explanations: the need for smaller banks to finance their long-term strategies with excess capital; the ability of larger banks to diversify and make use of better risk controls, therefore being able to afford holding lower capital ratios.<sup>26,27</sup> In our analysis, the correlation is negative, in line with the literature — even though the coefficient is very low. In addition, the

<sup>24</sup> Our analysis acknowledges that both actual capital ratios and capital requirements are driving banks' margins by definition.

<sup>25</sup> Francis and Osborne, 2012.

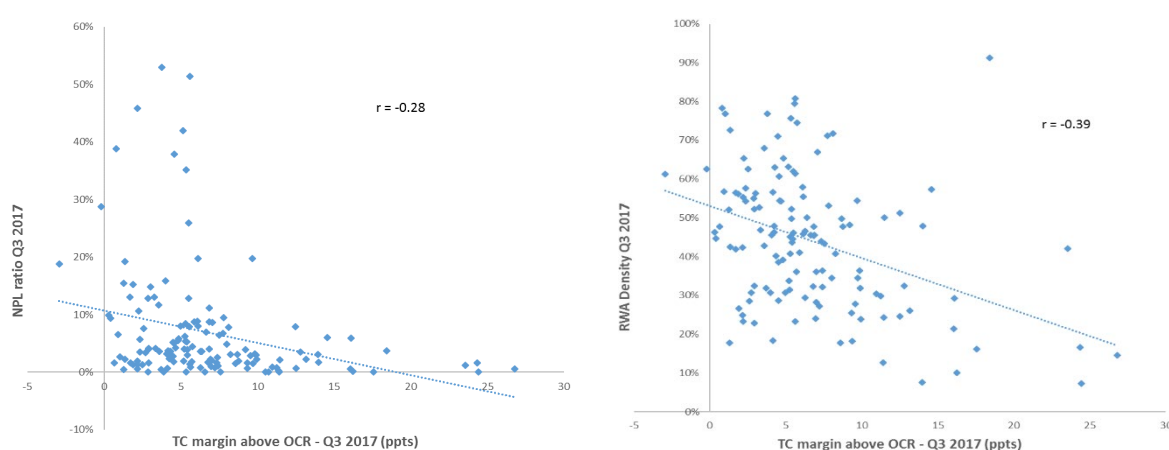
<sup>26</sup> Alfon et al., 2004; 2005.

<sup>27</sup> While it is true that larger banks may have better access to funding and are arguably in a better position to diversify, one may also expect a positive correlation between the size margin and capital margin: larger banks' better access to capital markets may be used to maintain a higher 'security buffer' above their requirements. This would, in particular, spare them from an immediate need to recapitalise when new buffers or requirements are introduced or increased.

correlation between margins and profitability (tested through banks' ROE) seems to be in line with some of the literature, showing a positive even though low correlation.<sup>28</sup>

Correlation coefficients for almost all of the tested variables are in the area of 0.2 and below. The variables showing most correlation with the capital margins are NPL ratios and RWA density, that is, the variables selected to account for the riskiness of banks, as depicted in Figure 14.<sup>29</sup> This result would suggest that — somehow in line with the findings of the country of origin analysis — riskier banks in our sample hold lower margins on average.<sup>30</sup> While the negative correlation for variables of riskiness may be driven by lower capital levels in riskier banks, possibly linked with the lower access and ability of these banks to raise additional capital, it could also be partially the result of higher capital requirements (or indeed higher RWAs) for riskier banks.

Figure 14: Correlation between TC margin above the OCR (Q3 2017) and the NPL ratio (LHS) or RWA density (RHS)



Sources: EBA Risk Dashboard; EBA Supervisory Reporting.

Overall, it seems that for our sample we cannot make any statements regarding certain variables and bank characteristics being consistently associated with banks holding higher or lower margins above capital requirements.

<sup>28</sup> See Avisoa et al., 2018: the background may come from an observation of cases in which, during the sovereign crisis, banks that were more constrained by capital requirements were likely to have less favourable market financing conditions and therefore be less able to seize investment opportunities and hence less profitable.

<sup>29</sup> However, the correlation is relatively weak. For NPLs, we find a correlation coefficient of -0.3. The highest correlation we find is between capital margins and the RWA density, with a correlation coefficient of -0.4.

<sup>30</sup> RWAs also directly affect margins.

## 4. Transparency and disclosure — a short discourse

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Discussions on P2 capital requirements and expectations always prominently feature the topic of transparency and disclosure.

Disclosure in the context of P2R comes with a set of benefits and potential drawbacks. These are mainly related to the relevance of P2R for institutions' MDA triggers and therefore for a range of capital instruments held by investors in the market. On the one hand, some have argued in favour of some caution in disclosing P2R, since this information may potentially determine self-re-enforcing, adverse effects: levels of capital too close to the MDA trigger may for example trigger reactions on the (AT1) market, which could indeed be self-fulfilling.

On the other hand, disclosure allows for more complete information access to investors and would enable market participants to assess and price capital instruments issued by banks. It would reduce information bias in the market and, in this way, promote market discipline, leading to increased levels of confidence overall. Disclosure and transparency of P2R (i.e. the TSCR and the OCR) can also arguably contribute to preventing another liquidity crisis, as seen during the financial crisis, where uncertainty was more harmful than bad news itself.<sup>31</sup>

The topic of transparency has attracted a lot of attention, also within the context of P2G, even though its non-binding nature may call for somewhat different considerations. No automatic supervisory action will follow in instances where an institution falls below its P2G expectation and, since P2G is not MDA relevant, there will be no automatic restrictions and no automatic consequences for investors if a bank falls below P2G. Many may argue that there is a danger of self-fulfilling investor reactions to capital expectations that are intended only as an additional buffer to existing requirements. At the same time, with the progress made today on bail-in regimes and banks' safety, full transparency — in the form of publishing supervisory capital expectations (P2G) alongside the stress test results on which they are based — would arguably allow investors to access all relevant information.<sup>32</sup>

Currently, no prescribed way of disclosing P2G exists across Europe, and it is likely that this will be handled differently across jurisdictions, as is the case for P2R.<sup>33</sup>

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<sup>31</sup> Enria, A., 2016.

<sup>32</sup> Enria, A., 2018.

<sup>33</sup> As this paper is being drafted, a proposal on the amendments of the current CRD IV package is being discussed by the European Parliament, the Council and the Commission in trilogue. The amendments would implement some of the recent international regulatory standards for banks, as set out in the Basel III framework. Among the proposed adjustments, the proposal may include a requirement for banks to disclose their P2R.



## 5. Conclusion

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Capital regulation and the P2 framework in particular have undergone substantial changes over recent years in Europe. The most recent introduction of new international standards has led to not only harmonisation across Member States, but also greater challenges for EU banks through additional capital requirements and expectations and a perceived decrease in performance.

This paper shows that European banks' capital levels, with a few exceptions, sat well above their capital requirements in 2017. For the CET1 TSCR requirements, no country saw an average margin below 3 ppts. On average, in Q3 2017 EU banks' capital stood at 5.3 ppts above the level at which MDA restrictions would have been triggered, that is, above their respective OCR in CET1 terms. The average margin above the CET1 OCR was below 3 ppts in only five countries and was always positive. Furthermore, EU banks' margins are also generally comfortably above the newly introduced capital expectations (P2G).

This paper acknowledges that banks' choice of capital levels is not only related to capital requirements: European banks may be holding capital levels well above requirements because their internal target capital ratio is higher than the regulatory requirements or because of other idiosyncratic factors.

While our analysis suggests that EU banks with their current margins are generally well positioned for the enhanced capital framework that has been established in Europe to date, to establish an actual link between capital ratios (and capital targets) and supervisory requirements, we would need a longer time series on the latter.<sup>34</sup> What we can say, nevertheless, is that the enhanced capital framework introduced in Europe does not appear to have posed an immediate constraint on banks' capital in 2017 for the majority of banks included in our sample. This could be either because banks have already increased capital levels sufficiently over recent years, or because requirements have not been as biting as anticipated.

Finally, supervisory expectations are evolving and may change. Future changes in regulation to fully implement the latest Basel III developments<sup>35</sup> may also imply additional changes to banks' capital requirements and margins in the future.

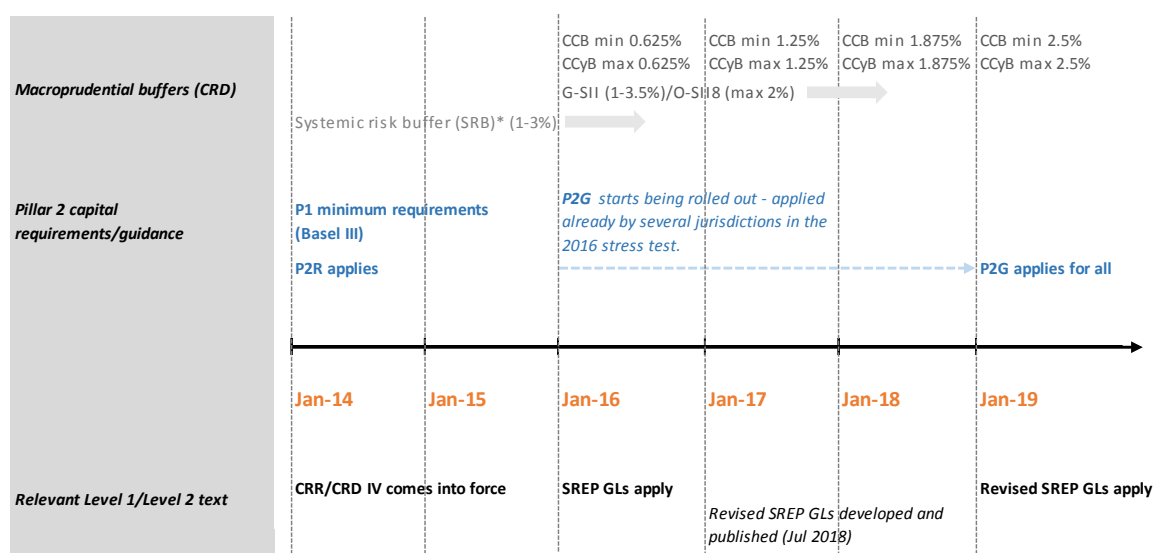
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<sup>34</sup> In a second step, with a longer time series available on capital requirements, it would be interesting to not only explore the extent to which capital margins have actually been driven by capital requirements (that is, to what extent capital levels and targets have responded to requirements), but also study the developments of capital requirements and lending activity over time.

<sup>35</sup> Basel Committee on Banking Supervision, 2017.

## 6. Annex

Figure 15: Capital requirements, expectations and buffers: timeline



Note: Specific rules apply on the SRB, O-SIFI and G-SIFI, including their cumulative nature (see CRD IV, Article 131 onwards).

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## ACKNOWLEDGEMENTS

The authors are affiliated with the European Banking Authority (EBA). The views expressed are those of the authors and do not necessarily reflect official positions of the EBA.

The authors are grateful for the valuable input from and discussions with Mario Quagliariello (EBA), as well as the useful comments from Andrea Resti (Bocconi University), Stefan Hohl (Financial Stability Institute), and Olli Castrén, Piers Haben, Angel Monzon and Oleg Shmeljov (EBA).

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ISBN 978-92-9245-501-9  
ISSN 2599-7831

DOI:10.2853/0746  
DZ-AH-19-001-EN-N

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