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Subject: Submission of additional analysis for the Call for Advice for the purposes of revising the own fund requirements for credit, operational, market and credit valuation adjustment risk

Dear Mr Berrigan,

On 4 May 2018, the EBA received from the Commission Services a Call for Advice on the impact and implementation in the EU of the final Basel III standards agreed by the Group of Governors and Heads of Supervision (GHOS) in December 2017 and the Basel standards on the market risk framework published in January 2019.

The EBA submitted its advice in two parts, on 5 August 2019 and on 4 December 2019, respectively. The first part covered the areas of credit risk, operational risk, securities financing transactions and output floor. The second part covered the areas of market risk and credit valuation adjustment risk standards, as well as a macroeconomic impact assessment (which was carried out in cooperation with the ECB). The advice included a detailed quantitative impact assessment and a set of policy recommendations.

On 15 July 2019, the EBA has received a request from the Commission to provide additional analysis in the areas of application of the output floor at all levels, increased risk sensitivity in the equity exposure class (including the impact on intra-group equity exposures), increased risk sensitivity for specialised lending, as well as an estimation of the minimum requirements for own funds and eligible liabilities (MREL). The additional analysis on specialised lending and MREL were submitted to the European Commission on 25 February 2020.

It is my pleasure to submit to you today the additional analysis on the output floor and the equity exposure class, the main findings of which are enclosed in this letter. The Annex to this letter provides supplementary results along with a description of the sample and methodology used for the analysis

of the data collection exercise, as well as the list of questions used in the fact finding exercise on the characteristics of banks' equity holdings. The results should be interpreted with caution, taking into account data quality and several simplifying assumptions described in Box 1.

Box 1 Sample and data limitations

The output floor and equity analysis are based on a reduced sample of institutions compared to the original sample used in the CfA analysis (189 institutions). [1] All standalone institutions as well as some banking groups that participated in the 2018 data collection did not participate in the data collection for the additional CfA analysis. Other banking groups were excluded due to data quality issues specific to each analysis. As a result, the output floor analysis is based on a sample of 221 institutions belonging to 51 banking groups, while the equity analysis is based on a sample of 150 institutions that correspond to 44 banking groups.

The scope of the data collection is defined as follows: For each banking group that participated in the data collection, the data covers all entities that ***apply*** CRR/CRD capital requirements at individual level. In addition, it also includes those sub-consolidated entities for which all the solo entities within their sub-consolidation perimeter are waived from the application of CRR/CRD capital requirements.

Therefore, the following entities are not in the scope of the data collection:

- Individual and sub-consolidated entities located outside the EU (around 9% of individual total assets[2], and around 20% of the individual RWA[3]; 6% of individual RWA are stemming from non-EU entities using internal models for which the application of the output floor at solo level could be relevant);
- Individual and sub-consolidated entities within EU that are not subject to CRR/CRD capital requirements (around 8% of individual total assets);
- Individual and sub-consolidated entities within EU that are subject to CRR/CRD capital requirements but are waived from their application at individual level (around 1% of individual total assets);
- Sub-consolidated entities within EU that do not have all of the solo or sub-consolidated entities within their scope waived from CRR/CRD capital requirements.

[1] See CfA analysis at consolidated level at https://eba.europa.eu/eba-advises-the-european-commission-on-the-implementation-of-the-final-basel-iii-framework and https://eba.europa.eu/eba-updates-estimates-impact-implementation-basel-iii-and-provides-assessment-its-effect-eu-economy

[2] The banking groups in the analysis were requested to provide aggregate data on the total assets of all individual entities within the scope of prudential consolidation of the group irrespective of whether they are subject to capital requirements on an individual basis or are waived. Out of the 51 banking groups, 42 submitted good quality data. The statistics on total assets in this and following bullet points are based on this sample.

[3] The banking groups in the analysis were requested to provide aggregate data on the RWA on an individual basis for all individual entities within the scope of prudential consolidation of the group. Out of the 51 banking groups, 50 submitted good quality data. The statistics on RWA in this bullet point are based on this sample.

With respect to output floor analysis, to ensure a minimum data quality and comparability between solo and consolidated results, the analysis includes only those banking groups that have provided data for solo/sub-consolidated entities covering at least 90% of the RWA of the sum of RWA of all the entities within the scope of the data collection. The final sample thus covers on average 97.0% of the total RWA in the scope of the data collection. The simple average of the RWA coverage across banking groups in the sample is 98.7%.

The results of both the output floor and equity exposures analyses should also be interpreted with caution due to the use of simplifying assumptions. Banking groups were asked to report specific data on how they would implement standards that are not yet in place, with a high required coverage across their individual and sub-consolidated entities. Given the complexity of the exercise, it is likely that banks had to use a number of approximations, assumptions and shortcuts in order to provide this data. The expectation is that, when in doubt about specific elements of the revised standards or the interpretation of the instructions, institutions may have made conservative reporting choices, leading to a potential overestimation of the impact. These results should also be read in conjunction with a set of conservative assumptions underlying the assessment. Mainly, the lack of any adjustment carried out by banks or authorities in response to the implementation of Basel III. Banks' balance sheets are assumed to be static, meaning that banks will not alter their current exposures and all maturing assets are expected to be replaced by similar instruments. With regards to the output floor analysis, Pillar 2 and macro-prudential requirements (expressed in percentage of risk weighted assets) are also assumed to remain unchanged. This adds a significant degree of conservatism.

More details of the differences between the sample and methodology in this report and the earlier CfA analysis are included in Annex 4.

Output floor analysis

The analysis is based on a sample of 221 institutions belonging to 51 banking groups. The results should be interpreted with caution, taking into account data quality and several simplifying assumptions described in Box 1 and Annex 4.

The analysis shows the impact of application of the output floor in two ways. First, it shows the overall impact due to the application of the output floor on individual/sub-consolidated entities. Second, the analysis shows the additional capital requirements and shortfalls for the banking groups due to the application of the output floor at all levels, in comparison to the application of the output floor at consolidated level only.

The implementation of the final Basel III standards is expected to increase Tier 1 minimum required capital (T1 MRC) at **individual or sub-consolidated level** on average by 16.2% (Table 1). The output floor explains around a quarter of the total impact (+4.7%).

The total average impact of the Basel III reform on **the same sample of banking groups on a consolidated level** is higher than the average at individual and sub-consolidated level. The reform is

expected to increase T1 MRC at consolidated level on average by 20.7%. The output floor explains over one third of the total impact (+7.8%).[4]

Table 1 Percentage change in T1 MRC (relative to current T1 MRC), sample weighted average

	RWs	LR	OF	TOTAL
Individual or sub-consolidate entities	13.2%	-1.73%	4.7%	16.2%
Consolidated banking groups	13.0%	-0.1%	7.8%	20.7%

Sources: EBA 2019-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 221 individual and sub-consolidated banks and 51 banking groups. RWs, total risk-based requirements; LR, leverage ratio; OF, output floor.

The lower average T1 MRC increase due to the output floor for the sample of individual or sub-consolidated entities may look counterintuitive, but can be explained by the following non-exhaustive list of factors:

- The existence within the banking group of entities that are not subject to CRR/CRD capital requirements at individual level or entities that have been waived from CRR/CRD capital requirements at individual level.
- The use of standardised approaches at individual and sub-consolidated level, when internal models are applied at the consolidated level.
- The limitations of the analysis as a consequence of the scope of the exercise and the inclusion of slightly less than 100% of the individual entities of the group (see Annex 4).

For a better understanding of the results in Table 1, **Error! Reference source not found.** compares the relative T1 MRC increase due to the output floor at consolidated level with the T1 MRC increase due to the output floor at individual/sub-consolidated level.

Table 2 Percentage change in T1 MRC due to the output floor at consolidated level vs sum of individuals and sub-consolidated entities (relative to current T1 MRC)

Impact of output floor	Number of banking groups	% change in T1 MRC due to output floor on consolidated level	% change in T1 MRC due to output floor on individual/sub-consolidated level
No output floor impact	30	0	0
Output floor impact on consolidated level only	1	Not disclosed*	Not disclosed*
Output floor impact on individual/ sub-consolidated level only	6	0	2.3
Output floor impact on individual/ sub-consolidated > output floor impact on consolidated level	5	1.1	5.4
Output floor impact on individual/ sub-consolidated < output floor impact on consolidated level	9	23.9	9.9

Sources: EBA 2019-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 51 banking groups. The banking groups are grouped based on the comparison between % change in T1 MRC due to output floor at consolidated level and weighted average of % change of T1 MRC due to output floor at individual and sub-consolidated levels. The results in the table are presented as weighted averages of % change in T1 MRC. * the figures have not been disclosed due to the number of banking groups below the minimum of three necessary to ensure confidentiality.

The table shows that 30 out of 51 banking groups, including 18 SA groups, have no impact from the output floor application neither at consolidated nor at individual/sub-consolidated level. These

[4] As a reminder, the earlier CfA analysis at consolidated level for the full sample (189 institutions) also showed that output floor accounts for approximately 1/3 of the T1 minimum required capital increase.

banking groups are constrained either by the leverage ratio or risk-based requirements both at individual/sub-consolidated and consolidated level.

The table also shows that 21 out of 51 banking groups are constrained[5] by the output floor either at consolidated or individual/sub-consolidated level:

- Out of 21 banking groups, 1 banking group[6] is constrained by the output floor only at consolidated level. 14 banking groups are constrained by the output floor at all levels; and 6 are constrained only at individual/sub-consolidated level.

- Among the 14 banking groups with impact of output floor at all levels level, 5 have the individual/sub-consolidated level T1 MRC increase due to the output floor higher than the same increase at consolidated level. The remaining 9 banking groups show a consolidated level T1 MRC increase due to the output floor that is higher than the same increase at individual/sub-consolidated level.

In absolute terms, the additional application of the output floor at individual/sub-consolidated level would increase the T1 MRC due to the output floor by EUR 6.8 billion. The increase in T1 MRC is driven by banking groups that are constrained by the output floor at individual level only and banking groups that are constrained by the output floor at all levels and for which the T1 MRC increase due to the output floor at individual level is higher than the same increase at consolidated level. [7]

The impact of the reform is heterogeneous across institutions operating under different business models (Figure 1). The contribution of the output floor to this impact varies across business models too.

In particular, **the highest impact on total T1 MRC is seen in automotive and consumer banks (23.1%) and private banks (21.6%).** The main driver of the impact for both business models is the risk-based requirements as per the revised Basel III framework, and, in both cases, output floor has close to zero contribution to the impact. High impact on T1 MRC is also observed in the sample in cross-border universal banks, local universal banks, leasing and factoring. The main driver of the impact for these groups of institutions is again the risk-based requirements. For all these business models, the output floor had some impact on capital requirements, although significantly lower than the risk-based requirements.

The contribution of the output floor is highest for mortgage banks, merchant banks and for co-operative banks, although the overall impact of the reform on individual and sub-consolidated level on these business models is below average. Mortgage banks have an impact of 14.3%, mostly driven by risk-based requirements (11.1%) and output floor (8.9%) and partially offset by the negative effect of the leverage ratio (-5.7%). For saving and loan association and co-operative banks, although the net

[5] A requirement is called constraining if it imposes the largest amount of MRC among the requirements under consideration (risk-based, leverage ratio and output floor).

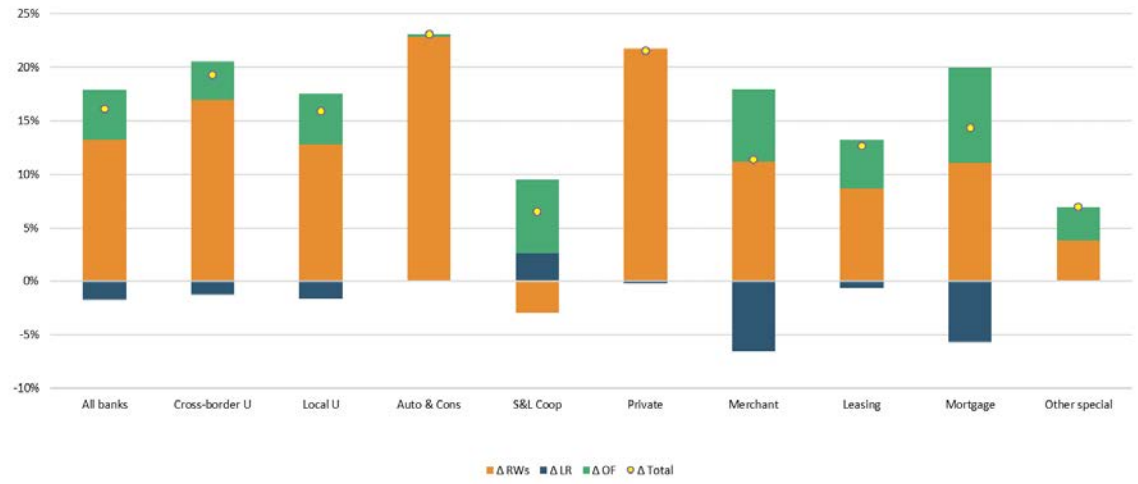
[6] For this banking group the impact cannot be disclosed due to the number of banking groups below the minimum of three necessary to ensure confidentiality.

[7] See Figure 3 in the Annex for detailed banking group – by – banking group results. Please note that an additional capital requirement arising at individual or sub-consolidated level should not be interpreted as an automatic one-to-one external capital cost for the group.

impact is low compared to the other business models (6.5%), output floor accounts for most of the gross increase in T1 MRC (6.9%).[8] Merchant banks have a total T1 MRC impact of 11.4% of which 6.8% is due to the output floor.

Overall, it can be concluded that the impact of applying the output floor at the individual level does not seem to be particularly high, except for co-operative banks, for which the output floor is the main driver, but for which the overall impact of the reform is the lowest.

Figure 1 Percentage change in T1 MRC (relative to current T1 MRC), by business model of individual or sub-consolidated entity



Sources: EBA 2018-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 221 banks: Cross-border U (26), Local U (121), Auto & Cons (7), Building Soc* (1), S&L Coop (29), Private (7), CCP* (1), Merchant (4), Leasing (3), Public Dev* (1), Mortgage (18), Other special (3).
RWs, total risk-based requirements; LR, leverage ratio; OF, output floor.
* Not shown in the chart because fewer than three entities in the cluster.

Box 2 Reminder: EBA Recommendation on the Scope of application of the output floor

As a reminder, according to Recommendation OF 8 "Scope of application of the output floor", from the EBA report "Policy Advice on Basel III Reforms – Output Floor", the EBA states that "the output floor requirement should generally apply at all levels, just like other prudential requirements. Competent authorities should consider the impact of the implementation of the output floor at different levels and consider neutrality in respect of business models in their waiver policy."

The aggregate output floor is expected to have a different impact depending on whether it is applied at both consolidated and individual levels — as it is the case for most Basel III prudential standards transposed in the EU — or only at consolidated level. In banking groups where individual entities are authorised to use internal approaches and carry out specific business models, the cumulative impact of the output floor implemented at solo level on all the entities of the group could be somewhat higher than the impact of the output floor measured — for the same group — at the highest level of consolidation in the EU. This is mostly due to the following reasons: i) at individual

[8] The fact that the total impact is lower than the impact of the output floor reflects the fact that the impact from changes in risk weights is negative, which in turn is more than compensated by the output floor backstop.

level, the impact of the floor on specific business lines/portfolios might not be offset by the inclusion in the aggregate calculation of business lines/portfolios that are less or not at all affected by the output floor (i.e. no dilution effect in the aggregate output floor calculation); ii) at solo level the output floor also acts on intra-group exposures that are, instead, mostly netted out at the highest level of consolidation. The materiality of these effects depends on the specific structure of each banking group and whether capital at subsidiary level is raised internally or externally.

It should be noted that all the existing capital requirements in the CRR are applied at individual level, including the leverage ratio, which similarly to the output floor is a backstop requirement. A decision to apply the output floor only at consolidated level would represent a departure from the current application of capital requirements in the EU. Application of the output floor solely at consolidated level may potentially result in economic risks present at individual level not being covered by sufficient amounts of regulatory capital.

Furthermore, it could be argued that applying the output floor also at individual level would help achieve the objective of addressing undue RWA variability across entities at the individual level, and would enhance the level playing field between institutions operating as subsidiaries within large groups and medium/small institutions operating as standalone entities, i.e. not as part of large groups.

In terms of the ability of competent authorities to waive the application of the output floor on an individual level, there is the general capital requirement waiver of Article 7 of the CRR as well as that of Article 10 of the CRR for credit institutions permanently affiliated to a central body. These waivers would, however, waive not only the output floor requirement but also the whole capital requirement and leverage ratio requirement. In addition, these waivers would not be available in situations where the individual institution and its parent institution are established in different Member States.

Please refer to the EBA report "Policy Advice on Basel III Reforms – Output Floor" for a more detailed analysis underpinning this recommendation.

Capital shortfalls

With the introduction of the final Basel III standards as of 2027 — without taking into account any transitional measures — the sample of individual and sub-consolidated entities is expected to incur a total capital shortfall of approximately EUR 25.9 billion. EUR 7.2 billion of this shortfall is due to the application of the output floor at individual and sub-consolidated level (Table 3). By comparison, the capital shortfall due to the application of the output floor at consolidated (group) level for the same sample of banking groups is higher, EUR 17.6 billion.

Table 3 Capital shortfalls (in EUR billion)

	CET1		T1		TC	
	Total shortfall	Of which OF add-on	Total shortfall	Of which OF add-on	Total shortfall	Of which OF add-on
Individual or sub consolidated entities	6.8	4.6	20.3	4.4	25.9	7.2
Consolidated banking groups	19.2	11.3	28.2	15.2	37.5[9]	17.6

Sources: EBA 2018-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 221 individual and sub-consolidated entities and 51 banking groups. Tier 1 and total capital shortfalls include the shortfall incurred by institutions constrained by the leverage ratio in the revised framework.

Table 3 compares the capital shortfalls arising from the application of the output floor at consolidated level only versus the capital shortfalls arising from application of the output floor at individual/sub-consolidated level only.

To assess the shortfall required at individual level *in addition* to the consolidated requirements, we also compared the capital shortfalls arising from the application of the output floor at all levels at the same time. The additional shortfall due to the output floor at individual/sub-consolidated level is EUR 4.3 billion (not shown in the table).[10] The increase in shortfall is driven by 7 banking groups, for which the output floor applied at individual/sub-consolidated levels results in higher shortfalls than on consolidated level.

However, it has to be noted that a mere comparison of the absolute amounts of shortfalls at consolidated level with the sum of shortfalls at individual and sub-consolidated level across CRR/CRD group entities should be interpreted with caution.

The differences between the shortfalls at consolidated and individual levels can partly be explained by differences in calculation of capital requirements at individual and consolidated levels. Calculation of capital requirements at consolidated level includes some elements that are not included at individual level and vice versa. For example, the sum of individual and sub-consolidated capital requirements include intra-group exposures, potentially leading to higher shortfall at individual level due to either changes in risk weights or output floor. At the same time, if an individual entity uses standardised approach, while the group applies IRB approach, the same assets may be included at consolidated level using IRB approach and at individual level using standardised approach. This could lead to lower shortfalls due to the output floor when measured at individual level. Additionally, the capital requirements that apply at consolidated and individual level might not be the same. The minimum common equity tier 1, tier 1 or tier 2 pillar I requirements apply equally at consolidated or individual level, nevertheless the application of additional buffers or pillar II requirements could differ (i.e. the G-SIIs buffer only applies at consolidated level). Overall, the differences in capital shortfalls at consolidated and individual level cannot be fully explained without a deeper analysis of each individual group and its structure, also including the entities that are not strictly subject to CRR/CRD capital requirements.

It also has to be kept in mind that a shortfall (arising either from the application of the output floor or any other element of the reform) at individual and sub-consolidated level does not automatically generate a capital cost for the group. Regulatory capital shortfalls arising at individual or sub-

[9] The EBA report "Basel III reforms: impact study and key recommendations" published in August showed a EUR 135 billion shortfall for a sample of 189 banks.

[10] See Figure 4 in the Annex for detailed banking group – by – banking group results

consolidated entity level would require the group to take measures to recapitalise the entity.[11] Such measures do not necessarily mean that the group needs to raise capital, however. For example, the parent company could reallocate the capital within the individual entities in a different way or issue debt to fund its investment in the additional equity that is issued by the subsidiary to cover its shortfall. At consolidated level, the regulatory position of the group would then remain unchanged. In those cases where the parent company is waived from applying capital requirements at individual level (some parent companies are waived from individual requirements), such operation would have no impact on the individual position of the parent company either, and the costs would only be reflected in the cost of lending of additional funds.[12] In this sense, the additional capital requirement arising at individual or sub-consolidated level should not be interpreted as a one-to-one capital cost for the group.

Finally, the data coverage of the data collection should again be taken into account. This caveat renders the absolute amounts of both capital requirements and shortfalls less comparable. In particular, the following data limitations should be considered:

- The population of individual and sub-consolidated entities does not include all of the entities that are subject to capital requirements, because the entities with capital requirements in non-EU countries are missing.

- Within the EU population, not all entities subject to capital requirements are included, due to scope of data collection (see Annex 4 for more details on the scope) and data quality issues (see Annex 4 for exclusion criteria due to data quality).

Box 3 Summary of in-depth case studies of two French co-operative banking groups

This box summarises the qualitative results from two in-depth investigations of two co-operative banking groups in France that volunteered to participate in this exercise. It cannot be excluded that there are other banking groups in France or other EU countries with similar features and challenges. However, given that no other banking groups volunteered to participate in the exercise, it is not possible to make any extrapolations of these results to other business models and/or countries.

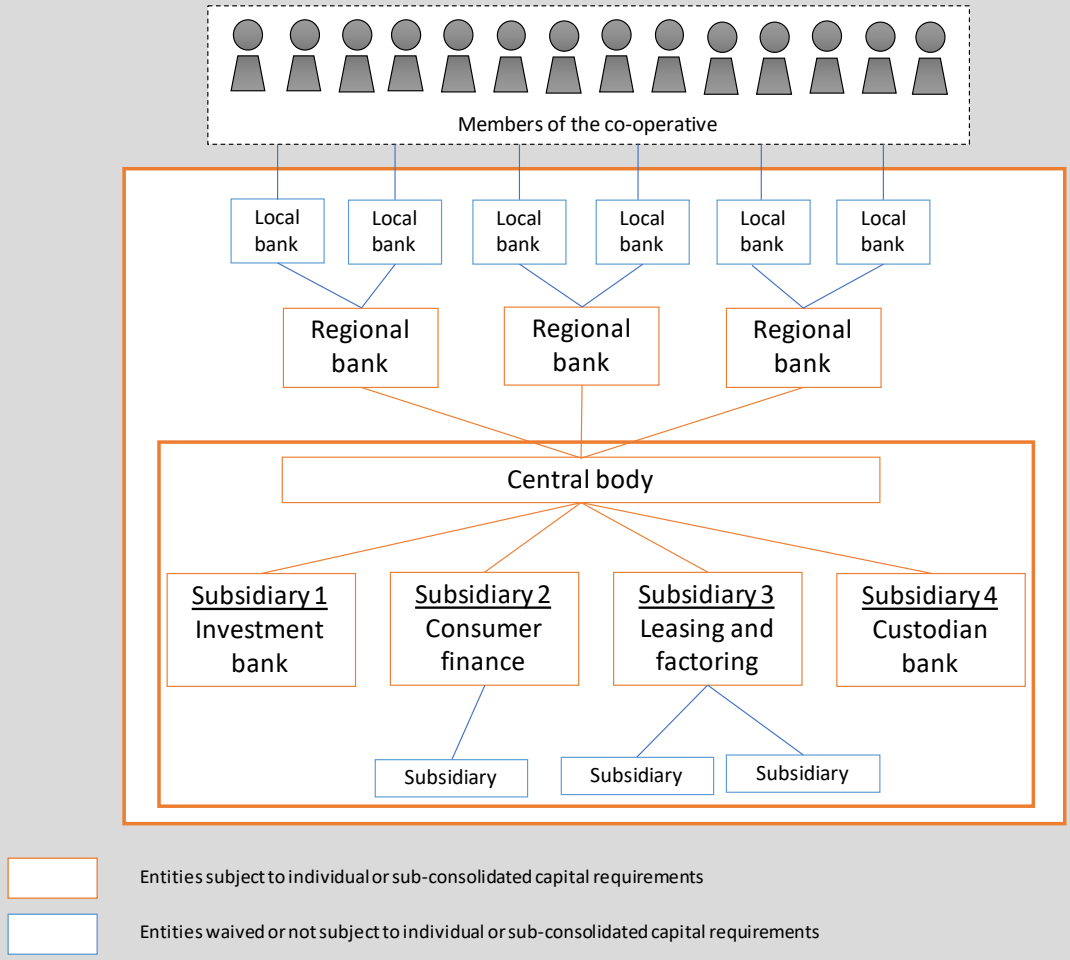
The main features of the two banking groups participating in the in-depth investigations are:

- **Reverse ownership structure.** These banking groups feature an organisational model whereby a co-operative structure is combined with a traditional corporate group structure. **Figure 2** provides a stylised example of such a co-operative banking group. Regional banks, owned by members of the co-operative (individuals), own a single central body. The central body in turn sits on the top of the corporate structure with subsidiaries. Each of the regional banks and subsidiaries is a legal entity, which may have its own capital requirements.

[11] Recapitalisation could also take place with the aim to maintain the entity at an unchanged regulatory capital ratio (if that is the group's target), even when there is no regulatory capital shortfall.

[12] The parent company support is not always viable. For example, if an entity is partially held by minority interests or other market participants, the banking group may need to involve the other owners or the resort to the market for additional capital in order to comply with the new requirements.

Figure 2 Stylised example of a co-operative banking group



- **Solidarity mechanism.** All co-operative banking groups in France are bound by a "solidarity mechanism"[13] that applies to all "affiliates"[14] as per French banking law[15]. Should any affiliate of the group prove to be insufficiently funded, then other affiliates of the group would have to provide their financial support to this entity. According to French law the central body shall oversee the application of the laws and regulations to the respective "affiliates" and it shall exercise administrative, technical and financial control over the organisation and management of the network. The "solidarity mechanism" is envisaged for exceptional circumstances involving the incapacity of an affiliate to fulfil its capital requirements.

- **Application of capital requirements at individual/sub-consolidated level**. In the French co-operative banking groups, traditionally supervision and capital requirements apply to (i) regional banks (sub-consolidated level), (ii) subsidiaries (individual or sub-consolidated level), (iii) the "small group" (sub-consolidated level), and (iv) the "large group" (consolidated level). As a result, the Basel III reform would have an impact at each of these levels.

In the context of application of Basel III reform, and in particular its application at individual and sub-consolidated level, the main challenges of these banking groups are:

- **Application of capital requirements at individual and sub-consolidated level and the impact of the organisational structure**. The application of the Basel III output floor at individual and

sub-consolidated level is one of the main driver of the total T1 MRC increase of the cooperative groups. The combination of the high number of entities and specialised subsidiaries is one of the main reasons for the high output floor impact on cooperative banking groups.

- **Implications on the "solidarity mechanism".** Due to increase in capital as a result of Basel III, more capital will be locked at local level, thus making less capital available for reallocation in cases when the solidarity mechanism will have to be deployed.

The equity exposure class

Additional risk sensitivity in the equity exposure class

The revised Basel III framework significantly amends the regulatory treatment of subordinated debt, equity and other capital instruments by i) requiring that all such exposures be treated under the Credit risk SA (including exposures in this class currently treated under the IRB approach) and ii) amending the risk weight (RW) treatment to better reflect the degree of risk associated with instruments in this exposure class. It is the EBA's recommendation to overall align the prudential treatment of equities (see recommendations CR 4 and CR-SA 13 to 20 in the document Policy Advice on Basel III reforms: Credit risk), as both the intrinsic nature of these exposures as well as the implications of holding them on the allocation of banks' own funds do not justify any downwards adjustments to the calibration of the RWs.

It is however acknowledged that the impact of the alignment with the final Basel III framework is significant across the board: for SA banks, the initial QIS[16] results show that the RWA for total equity exposures increases by 2.8% as a result of the final Basel III calibration. The largest increase in RWA comes from 'other equity exposures' (1.3%), followed by holdings in own funds instruments in insurance companies (0.8%) and 'high-risk items' (0.7%). There is however, some relief on the IRB side (i.e. a decrease of 15% of the RWAs for the equity exposure class under IRB), where the significant decrease in own funds requirements is registered on account of the migration of the equity exposure class to SA. In accordance with the current IRB approach, equity exposures are currently risk weighted in one of three ways: i) the simple RW approach, set out in Article 155(2) of the CRR, currently used for around 80% of equity exposures – one of the man factors for the significant RWA decrease is the use of this approach for equity exposures under Article 49 of the CRR; ii) the PD/LGD approach, as described in Article 155(3) of the CRR, currently used to compute the RWA for around 20% of equity

[13] Solidarity is a technique which avoids the division of debts and claims for a creditor, as per French civil law. It offers a creditor the opportunity to request full payment from a single debtor. Each debtor is personally bound with said creditor and has to fulfil the payment obligation of the other debtors. Each debtor can thereafter exercise its payment right against one another.

[14] Note that an entity of such banking group can be an affiliate or not i.e. non-affiliated to the cooperative network.

[15] Art L. 511-31 of the French Monetary and Financial Code, in a non-official English translation: "The central bodies represent the credit institutions affiliated with them in relation to the Banque de France and the Autorité de Contrôle Prudentiel. They are responsible for ensuring the cohesiveness of their network and the correct functioning of the institutions affiliated with them. To this end, they shall take all necessary measures to ensure the liquidity and solvency of each said institution and of the entire network. They may also decide to prohibit or limit the distribution of dividends to the shareholders or the remuneration of the shares of the credit institutions or investment firms affiliated with them".

[16] This additional risk sensitivity analysis in the equity exposure class has been carried out on a sample of institutions at consolidated level. The impact described in this paragraph (e.g. 2.8% of SA RWAs increase due to the equity portfolio), refers to this sample of 189 institutions included in the CfA analysis published in August and therefore, reflects an impact at consolidated level. As opposed to this, results in Table 6 show the impact on 150 individual or sub consolidated entities.

exposures – based on the fact-finding exercise, the RWs used based on this method are in close range to the newly proposed SA RW; iii) the internal models approach, described in the CRR Article 155(4), currently used to compute the RWA for less than 1% of equity exposures.

Following the letter received on 15 July 2019, the EBA proceeded to set up a fact finding exercise based on bilateral talks with a small sample of banks having taken part in the initial CfA QIS exercise (see list of questions addressed in Annex 2). Eventually, 13 banks were selected based on considerations regarding i) business models (i.e. 1 automotive and consumer credit bank, 1 building society, 2 cross-border universal banks, 1 leasing entity, 2 local universal banks, 1 mortgage entity, 2 other special banks, 1 private bank, 1 public development bank, 1 S&L cooperative entity), and ii) impact of the equity reform (full spectrum of CfA impacts, from outliers in SA impact – impact equal to or higher than an increase of 150% of RWAs for the equity exposure class – to 'winning' IRB banks – impact equal to or lower than a decrease of 15% of RWAs for the equity exposure class).

The outcome of the fact-finding exercise has not identified any elements that would justify amending the EBA's policy recommendations regarding the revised Basel III framework for the equity exposures class, as the proposed calibration is still considered to strike a good balance between the SA and the IRB for credit risk, as well as a good balance between the calibration of the credit risk framework as compared to the market risk framework. There are, however, a series of elements that would require further clarifications ahead of their implementation in the EU regulatory framework. The main findings of the exercise are presented below, in some cases together with considerations on the potential further actions needed.

First of all, banks' main interests in acquiring equity exposures are either i) the consolidation of the position on the market, via geographical diversification and/or services diversification (e.g. acquisitions of smaller/locally-present entities carrying out either similar or connected services) or ii) the diversification of income sources (ensuring a steady stream of income different from the traditional banking activity):

i. Banks part of financial conglomerates have strategic participations mostly in insurance companies, while banks that are part of 'cooperative' structures and/or institutional protection schemes (IPS) have a structure of their equity holdings that reflects a high degree of interconnectedness. Other types of holdings reflect the 'external stakeholder' characteristic of some business relationships, such as banks owning stakes in entities involved in the NPL business or entities in non-banking sectors etc.

ii. The equity holdings represented by private equity exposures in the banking book are part of an income stream diversification strategy, with banks investing either in direct private equity holdings (i.e. the banks take stakes directly in corporates and/or financial institutions) or indirectly via funds specialising in private equity investments (with banks getting involved at different levels of the activity, from simply choosing already-established fund to work with to taking an active part in the creation of the fund). There are also some banks investing in venture capital, though this is a rather rare choice in terms of investments, except for cases where this type of investment is the declared aim/mandate of the bank.

Furthermore, the final Basel III criteria for allocating the risk-weights appear to be quite clear overall, with several specific remarks concerning:

i. Speculative investments – in line with the discussions had with banks, but also based on the feedback received during the main QIS exercise, the definition of speculative investments, and the notion of long-term in particular (i.e. footnote 30 in the final Basel III text for CR SA), seems to lend itself to a number of interpretations, banks providing different 'limits' for the distinction between short term and long term. In the EBA's view, this could result in a heterogeneous application of the rules text, thus there is a merit in providing further clarifications on these aspects, also because equity instruments are quite different in nature from loans.
ii. Speculative investments – in the case of some long-term equity exposures (e.g. 90%-100% stakes), the bank holding them is actively involved in the decision-making process of the held entity; similarly, in the cases where the bank is involved in creating the fund investing in equity, there is some degree of involvement with the decision-making process. This aspect (i.e. involvement in the decision-making process) is used across the board as a justification for the allocation to the lower RW value of 250%.
iii. 'Internal' vs. 'external' stakeholders – with respect to equity holdings in entities inside a specific structure (e.g. cooperative banks, IPS), there is a high degree of interconnectedness which, in all evidence, may have repercussions with regards to the sharing of the potential losses of one or more of the participants to the structure, despite the high degree of involvement of the participants in the decision-making process as compared to 'external' stakeholders (i.e. holding participations in entities that are not part of a specific structure).
iv. Intragroup exposures – with respect to equity holdings in entities part of the same banking group, the holdings of this type of equity is a direct consequence of banks strategies for consolidating their market position.
v. Sufficiently diversified portfolios – in deviation to the Basel framework, the CRR currently allows for the application of a lower RW under the A-IRB simple method in case of significant diversification of the investments. While it is clear that the criteria for identifying these exposures are heterogeneous and might hinder a level-playing field, it would appear that banks, even under the SA, consider using this notion as a justification for using the lower RW (i.e. 250%) under the final Basel III framework for CR-SA.
vi. National legislated programs – it has been acknowledged that EU programs do not comply with the definition of this notion in the final Basel III framework

Additional analysis at solo and sub-consolidated level of banks' intragroup equity holdings

The analysis is based on a sample of 150 institutions that correspond to 44 banking groups. The results should be interpreted with caution, taking into account data quality and several simplifying assumptions as described in Box 1 and Annex 4).

The CfA analysis at consolidated level showed that the equity portfolio under the standardised approach was one of the portfolios most impacted by the implementation of the Basel III framework. In contrast, the equity portfolio under the IRB approach appeared to have a negative impact. The impact of the implementation of the revised Basel III framework on intra-group equity exposures was not analysed in the aforementioned report as those exposures are netted out at consolidated level.

Results of the additional data collection carried out at individual and sub-consolidated entity level show that the majority of the equity exposures held by individual or sub-consolidated entities are equity holdings in entities within the perimeter of consolidated supervision (Table 4). Equity exposures represent 3.3% of the total exposure under the standardised approach and most of it is intragroup equity exposure (2.8%). Under the IRB approach, equity exposures represent 5.2% of the total exposure, and also most of it is intragroup equity exposure (4.4%).

Table 4 Percentage of exposures to equity and exposures to equity intragroup (over total exposure), by approach

	SA		IRB	
	Equity exposure	**Of which: Equity intragroup exposure**	**Equity exposure**	**Of which: Equity intragroup exposure**
Total	**3.3%**	2.8%	**5.2%**	4.4%

The increase in equity RWAs under the standardised approach (SA) in individual and sub-consolidated entities due to the implementation of the revised Basel III rules relative to the current equity SA RWAs is 136.2% (Table 5). This impact is clearly higher than the impact on equity SA RWAs for the same banking groups at consolidated level (55.4%). For individual and sub-consolidated entities in the sample, the increase in intra-group equity RWAs is 145.5% whereas the increase for all other equity RWAs is 99.3%.

For equity exposures under the IRB approach, the increase in IRB RWAs on individual and sub-consolidated entities of the implementation of the revised Basel III rules is 3.3% relative to the current equity RWAs (Table 5). This impact is lower than the impact on the same banking groups for the same portfolio at consolidated level (13.0%). The impact for the intra-group equity portfolio is 6.7% whereas the impact for all other equity exposures is negative (-12.2%).

Table 5 Percentage change in equity RWA (relative to current equity RWA by approach), by equity sub-type

Approach	Equity, of which:	Equity intragroup	Equity other than intragroup
SA	**136.2%**	145.5%	99.3%
IRB	**3.3%**	6.7%	-12.2%

The contribution of the equity portfolio to the increase in total SA RWAs due to the implementation of the Basel III framework for the individual and sub-consolidated entities in the analysis is 15.7% (Table 6). This impact is significantly higher than the contribution on the same banking groups for the same portfolio at consolidated level (1.5%). This higher contribution is driven by the higher increase in equity RWAs for individual and sub-consolidated entities and the higher weight of equity RWAs over total SA RWAs of these type of entities.[17] Most of the impact arises from intra-group equity exposures (13.4%).

For equity exposures under the IRB approach, the contribution of the equity portfolio to the increase in total IRB RWAs due to the implementation of the Basel III framework for the individual and consolidated entities is 1.1%. This impact is slightly lower than the impact on the same banking groups

[17] For individual and sub-consolidated entities, the percentage of equity RWAs over the total SA RWAs is 11.5%. For the same banking groups, the percentage of equity RWAs account for 2.8% of the total SA current RWAs.

for the same portfolio at consolidated level (1.3%). Within the equity contribution to the increase of IRB risk-weighted assets, 1.8% arises from intra-group equity exposures.

Table 6 Percentage change in equity RWA (relative to total current RWA), by approach

	SA		IRB	
	Equity exposure	**Of which: Equity intragroup exposure**	**Equity exposure**	**Of which: Equity intragroup exposure**
Total	**15.7%**	13.4%	**1.1%**	1.8%

Overall, it can be concluded that the impact of the implementation of the Basel III framework to equity exposures at the individual and sub-consolidated level has a significantly higher impact than at consolidated level and it is mainly driven by intra-group equity exposures.

However, it has to be noted that a direct comparison of the RWAs increases at consolidated level with the RWAs increases at individual and sub-consolidated level across CRR/CRD group entities should be interpreted with caution due to differences in calculation of RWAs requirements at individual/sub-consolidated and consolidated levels, arising from several reasons:

- Intra-group exposures at individual and sub-consolidated entity level are netted out at consolidated level.
- The use of IRB approach to calculate equity RWAs at consolidated level, when the SA approach is used at individual/sub-consolidated level.
- The interaction with the thresholds deductions makes a direct comparison not possible. Equity holdings in financial sector entities are deducted above a certain threshold and risk-weighted at 250% below this threshold. The specific thresholds and the amounts of equity holdings in financial sector entities to consider are not the same at individual/sub-consolidated and consolidated level.
- The limited data coverage of the data collection should again be taken into account.

I remain at your disposal for any additional question.

Yours sincerely,

José Manuel Campa

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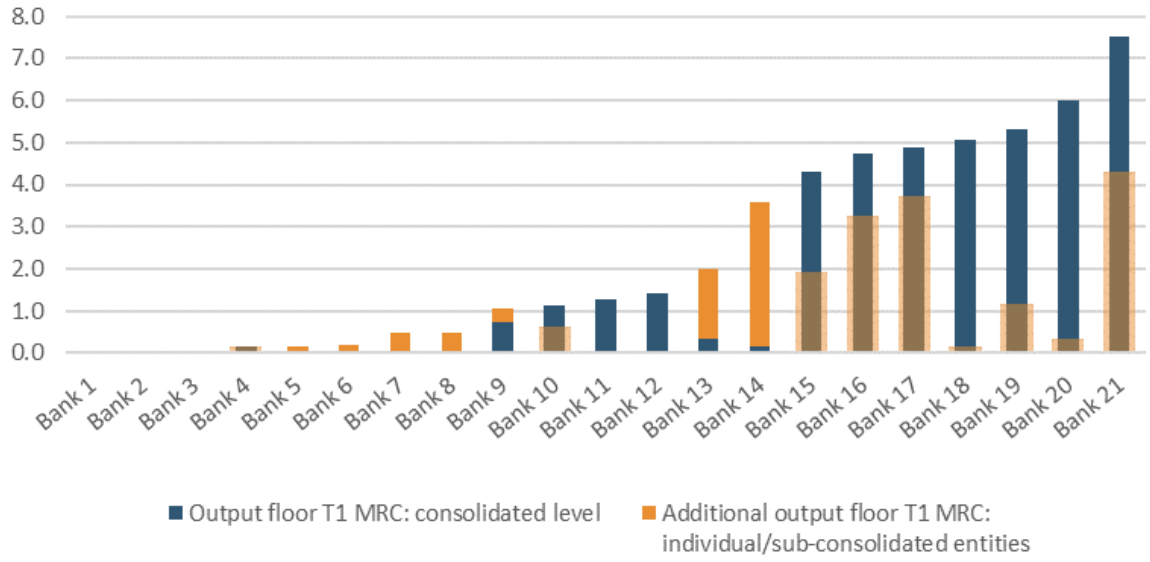
Encl:
Annex 1: Additional results on output floor
Annex 2: List of questions used in the fact-finding exercise
Annex 3: Additional results at solo and sub-consolidated level of banks' intragroup equity holdings
Annex 4: Sample and methodology

Annex 1: Additional results on output floor

This section of the annex provides additional details of the analysis of the impact of the output floor on individual and sub-consolidated level.

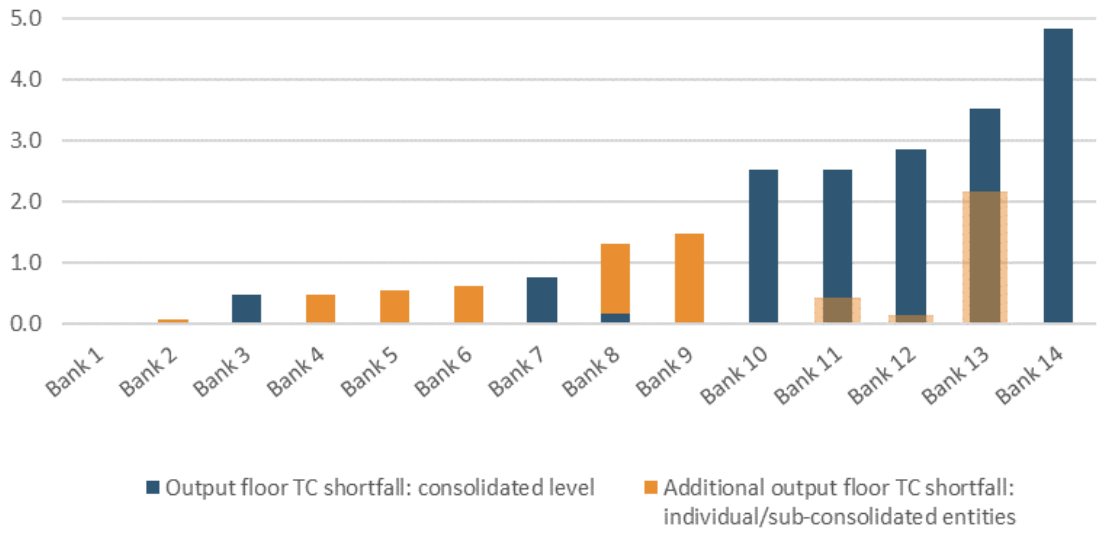
Banking group – by – banking group results

Figure 3 T1 MRC due to the output floor at consolidated level vs sum of individuals and sub-consolidated entities (in EUR billion)



Sources: EBA 2019-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 51 banking groups. The graph includes the 21 banking groups out of 51 that have an impact due to the application of the output floor either at individual/sub-consolidated or consolidated level.

Figure 4 Total capital shortfalls due to the output floor at consolidated level vs sum of individuals and sub-consolidated entities (in EUR billion)

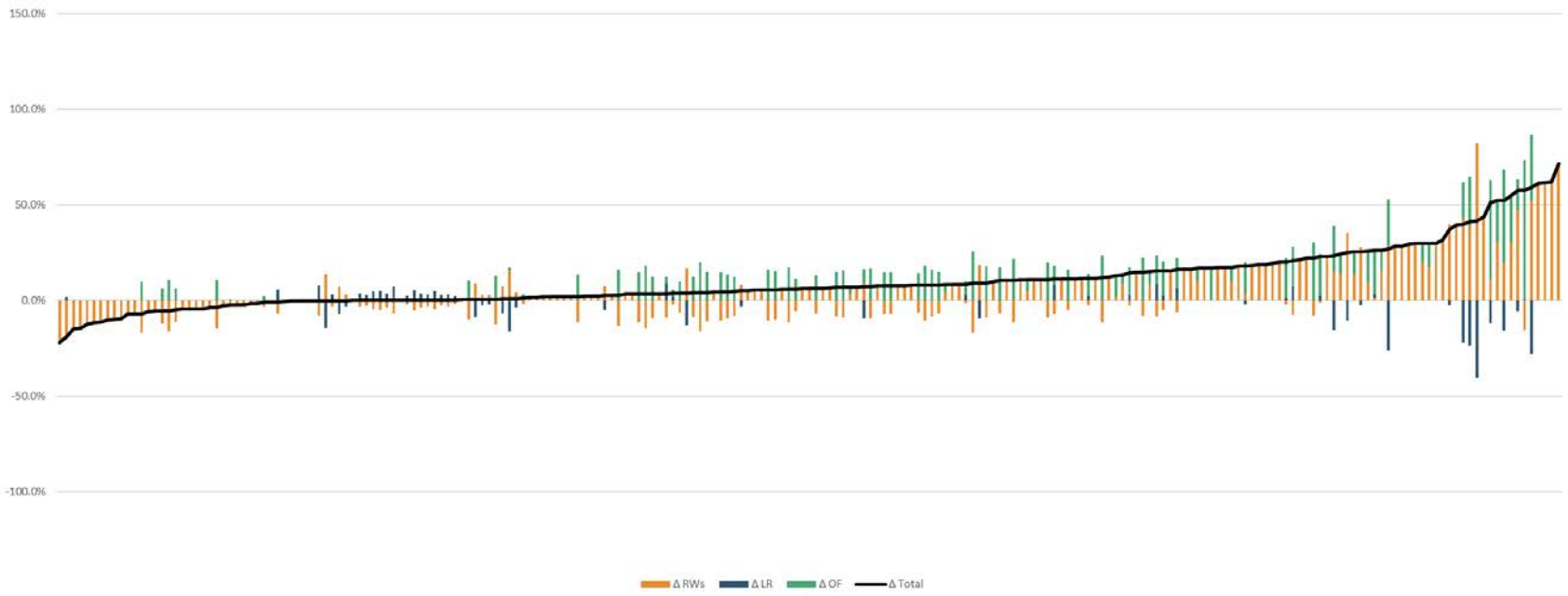


Sources: EBA 2019-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 51 banking groups. The graph includes the 14 banking groups out of 51 that have a capital shortfall due to the application of the output floor either at individual/sub-consolidated or consolidated level.

Distribution of T1 MRC impact

The T1 MRC impact is very heterogeneous across the sample of participating institutions (Figure 5). In the left tail of the impact distribution, several institutions experience an overall decrease in the T1 MRC. This result is in most cases driven by a decrease in the T1 MRC related to risk-based requirements. In the right tail of the distribution, the risk-based requirements remain the key driver of impact, except for a few cases where the output floor drives the impact fully or partially.

Figure 5 Percentage change in T1 MRC (relative to current T1 MRC), entity-by-entity data



Sources: EBA 2018-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 221 individual/sub-consolidated entities.

Analysis by business model

The impact of the reform is heterogeneous between institutions operating under different business models (Figure 1Figure 1). In particular:

- The highest impact on T1 MRC is seen in automotive and consumer banks (23.1%) and private banks (21.6%). The main driver of the impact for both business models is the risk-based requirements. The main driver of the impact for automotive and consumer finance banks is the risk weights under standardized approach, while for private banks the impact is equally driven by the risk weights under standardized approach and operational risk. In both cases, output floor has close to zero contribution to the impact.

- High impact on T1 MRC closer to average (+19.3%) is seen in cross-border universal banks, and local universal banks (+15.9%). The main driver of the impact for this group of institutions is again the risk-based requirements component of capital, with standardized approach risk weights accounting for most of the increase in the case of cross-border universal banks and IRB risk weights in the case of local universal banks. For both business models, the output floor had some impact on capital requirements, although significantly lower than the risk weighted assets: 3.6% and 4.8% respectively.

- High impacts, but below the overall weighted average, were detected for mortgage banks (14.3%), leasing (+12.6%) and merchant banks (+11.4%). For these business models, the impact is driven by risk-based requirements: credit risk for mortgage and leasing, and market risk for merchant banks. Output floor the three cases also account for part of the impact 8.9%, 4.6% and 6.8 % respectively.[18]

- For saving and loan association and co-operative banks, although the impact is quite low compared to the other business models (6.5%), output floor accounts for most of the increase in T1 MRC (6.9%).

Some differences in impact of the output floor by business model could be driven by the fact that some business models are more likely to use models and hence be affected by the output floor. Table 7 below shows the number of standardised and internal model institutions, as well as the share of SA and IRB RWA by business model.

Among business models, leasing and factoring has the highest share of IRB risk weighted assets – 80%. Cross-border universal banks, local universal banks, co-operatives, merchant banks, mortgage banks all have a high share of IRB RWA - between 55 and 70%. Private banks, CCPs and public development banks (not shown in the figure due to low number of entities) have zero IRB risk-weighted assets in the sample.

[18] To be noted, in the case of leasing, merchant and mortgage banks, the negative offset effect of the leverage ratio indicates that the leverage ratio backstop requirement is less binding when implementing the final Basel III framework. The same effect is also observed for local universal and cross-border universal, although it is much lower for these business models.

Table 7 Standardised and internal model entities, SA and IRB RWA, by business model

Business model	Number of SA entities	Number of IRB entities	% RWA SA	% RWA IRB	% RWA other
Cross-border U	5	21	22%	70%	8%
Local U	32	89	36%	55%	9%
Auto & Cons	3	4	72%	20%	8%
S&L Coop	1	28	36%	54%	10%
Private	6	1	87%	0%	13%
Merchant	1	3	21%	55%	25%
Leasing	0	3	17%	80%	3%
Mortgage	2	16	29%	61%	10%
Other special	1	2	23%	52%	25%
All	53	168	31%	59%	10%

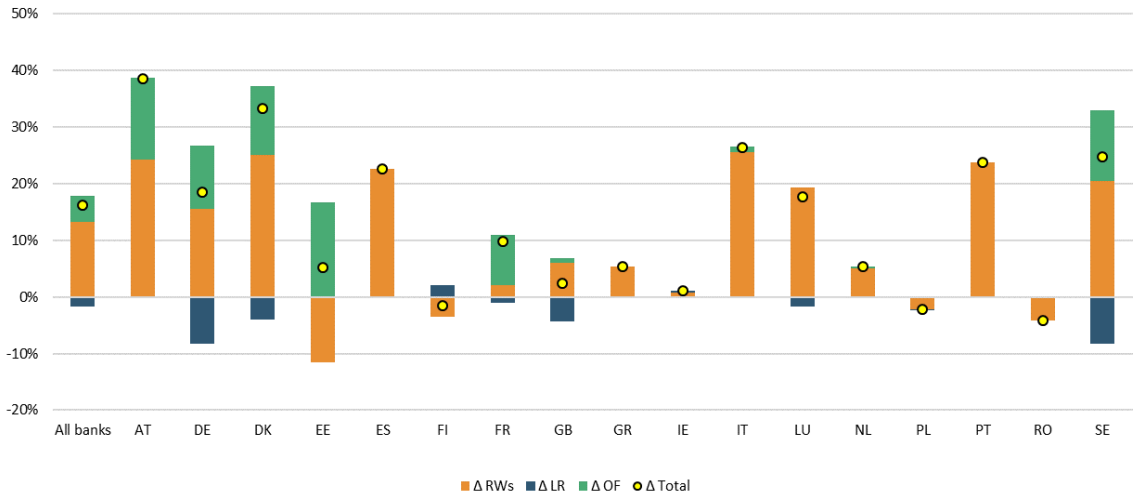
Sources: EBA 2018-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 221 banks: Cross-border U (26), Local U (121), Auto & Cons (7), Building Soc* (1), S&L Coop (29), Private (7), CCP* (1), Merchant (4), Leasing (3), Public Dev* (1), Mortgage (18), Other special (3).
RWs, total risk-based requirements; LR, leverage ratio; OF, output floor.
* Not shown in the chart because fewer than three entities in the cluster.

Analysis by country of individual or sub-consolidated entity

The impact of the reforms, and specifically the output floor, also varies between countries (Figure 6). The highest impact is measured in relation to the Austrian and Danish samples with impacts of 38.6% and 33.3% respectively. In both cases, the impact is driven mostly by the risk-based requirements (24.2 p.p. and 25.04 p.p. respectively), while the output floor accounts for around one third of impact. Italy and Sweden[19] follow with an impact of 26.4% and 24.8% respectively, with both having their impact mostly from risk-based requirements.

[19] In December 2018, the Swedish FSA changed the method used to apply the current risk weight floor for Swedish mortgages through Pillar 2 by replacing it with a corresponding requirement under Article 458 of the CRR, which will be included in the Pillar 1 requirements. The data reported in this report, with reference date June 2018, include the reduction in Pillar 2, however, do not reflect the increase in current RWAs due to the higher Pillar 1 requirements. As a result the impact for Swedish banks is overestimated. This methodology is consistent with the methodology published in the Basel III CfA reports. Updated results for the Swedish institutions on consolidated level, including the RWA floors for mortgages can be found here: https://www.fi.se/en/published/news/2019/clarification-on-the-impact-for-swedish-banks-from-revised-basel-standards/

Figure 6 Percentage change in T1 MRC (relative to current T1 MRC), sample weighted average, by country of individual or sub-consolidated entity



Sources: EBA 2018-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 221 individual/sub-consolidated entities: AT (4), BE*(2), BG*(2), CY*(2), CZ*(1), DE (7), DK (7), EE (3), ES (7), FI (3), FR (81), GB (6), GR (4), HR* (1), HU* (1), IE (9), IT (37), LT* (2), LU (4), LV* (2), NL (5), PL (9), PT (4), RO (3), SE (14), SI* (1). RWs, total risk-based requirements; LR, leverage ratio; OF, output floor.
* Not shown in the chart because fewer than three entities in the cluster.

Table 8 Standardised and internal model entities, SA and IRB RWA, by country of entity

Country of entity	Number of SA entities	Number of IRB entities	% RWA SA	% RWA IRB	% RWA other
AT	3	1	44%	49%	7%
DE	2	5	23%	65%	12%
DK	-	7	22%	71%	8%
EE	1	2	30%	61%	9%
ES	2	5	29%	64%	7%
FI	1	2	57%	27%	16%
FR	4	77	32%	56%	12%
GB	3	3	36%	51%	13%
GR	2	2	76%	16%	7%
IE	2	7	41%	48%	10%
IT	14	23	40%	51%	10%
LU	3	1	57%	36%	8%
NL	2	3	6%	86%	8%
PL	7	2	81%	10%	9%
PT	-	4	27%	64%	9%
RO	2	1	45%	46%	9%
SE	-	14	21%	67%	12%
All	53	168	31%	59%	10%

Notes: Based on a sample of 221 individual/sub-consolidated entities: AT (4), BE*(2), BG*(2), CY*(2), CZ*(1), DE (7), DK (7), EE (3), ES (7), FI (3), FR (81), GB (6), GR (4), HR* (1), HU* (1), IE (9), IT (37), LT* (2), LU (4), LV* (2), NL (5), PL (9), PT (4), RO (3), SE (14), SI* (1). RWs, total risk-based requirements; LR, leverage ratio; OF, output floor.
* Not shown in the chart because fewer than three entities in the cluster.

Constraint analysis

To shed some light on the importance of the output floor at the consolidated level versus the individual/sub-consolidated level, the impact of the output floor on an individual/sub-consolidated entity is compared with the impact of the output floor at the consolidated level (Table 9). Out of 221 individual and sub-consolidated entities, 88 (or 39.8 %)[20] are constrained by the floor. Out of these, 78 individual and sub-consolidated entities (or 35.3% of the total sample) belong to groups that are also constrained at the consolidated level.

Table 9 Number of institutions constrained by each regulatory metric, group versus individual/sub-consolidated entity

		Individual/sub-consolidated entity constraint		
		RWs	**LR**	**OF**
Group constraint	**RWs**	33.0%	4.1%	4.1%
	LR	0.5%	0.5%	0.5%
	OF	12.7%	9.5%	35.3%

Sources: EBA 2018-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 221 individual and sub-consolidated entities and 51 banking groups.

Out of a sample of 51 banking groups, 15 are constrained by the output floor (meaning that their minimum capital requirements is defined by the floored risk weighted assets), while 36 are not constrained by the output floor. The banking groups not constrained by the output floor include 18 standardised banking groups.

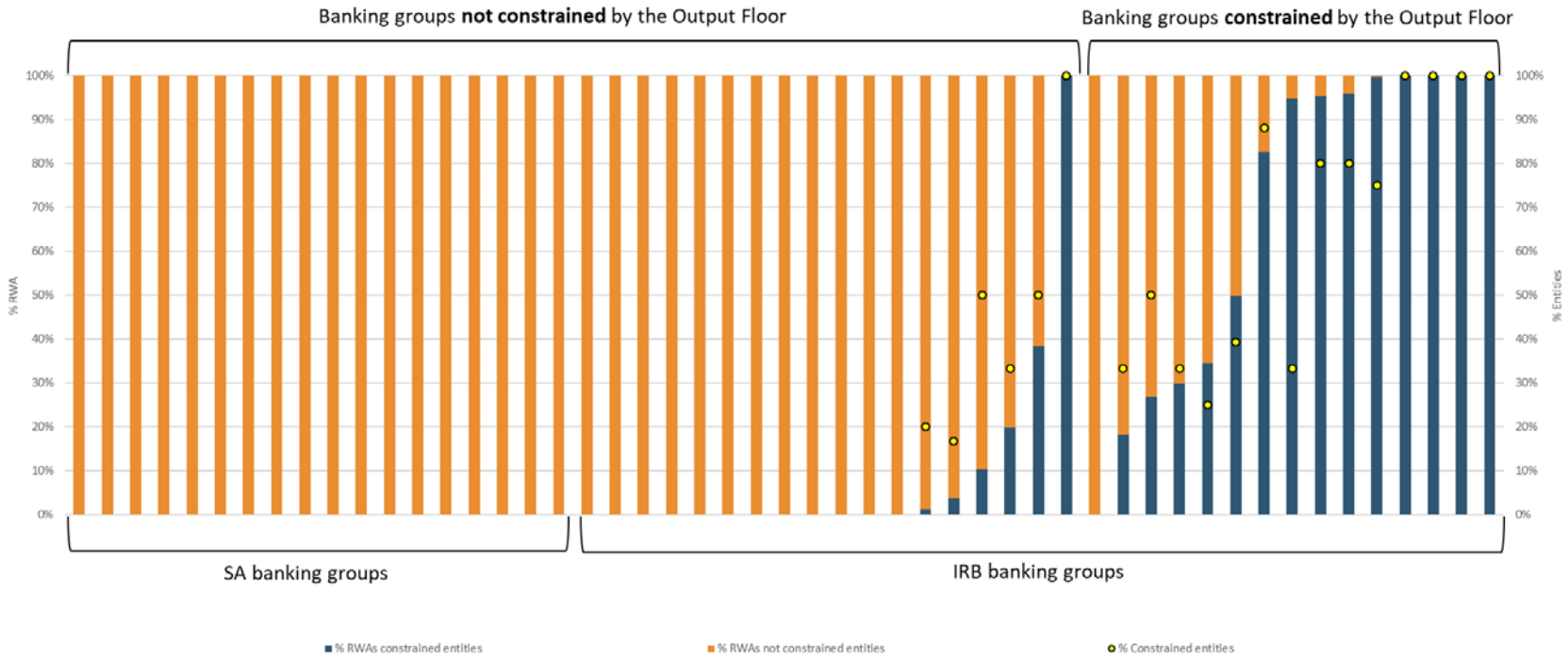
Within the sample of 36 banking groups that are not constrained by the output floor, most banking groups have all of their individual and sub-consolidated entities that are included within the scope of this data collection also unconstrained by the output floor (Figure 7). Six out of these 36 banking groups have some of their entities constrained by the output floor, and one banking group has all of its entities constrained by the output floor.

Within the sample of 15 banking groups that are constrained by the output floor, one banking group has all of its individual and sub-consolidated entities that are included within the scope of this data collection unconstrained by the output floor (Figure 7). The remaining 14 banking groups have some or all of their entities constrained by the output floor. Five banking groups have less than 50% of their RWA in entities constrained by the output floor.[21] Finally, four banking groups have all of their entities, and hence all their RWA constrained by the output floor.

[20] This compares to 25.4% based on the results of the qualitative questionnaire on subsidiaries published in the August 2019 CfA report.

[21] When referring to RWA in this context, we mean the sum of RWA at individual and sub-consolidated level of the entities that have been included in this analysis after the application of data quality checks.

Figure 7 The costraints of individual and sub-consolidated entities by constraint of banking groups



Sources: EBA 2018-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 221 individual and sub-consolidated banks and 51 banking groups.

Annex 2: List of questions used in the fact-finding exercise

For all banks:

1) Is there a change in the scope of the equity portfolio between the CRR and the final BIII frameworks? If yes, what are differences?
2) What is the structure of your equity holdings (as share of the total equity)?
3) Regarding the nature of your equity holdings:
    a. What are the types of instruments you hold and what are the main risk drivers for each type?
    b. What are the types of issuers of your equity holdings (e.g. corporates, banks, etc.) and what are the main risks each type poses?
    c. What is the share of intragroup equity holdings? – How did you reflect these holdings in the CfA QIS?
    d. What is the intention behind holding equity (e.g. strategic investments, speculative (venture capital or private equity) investments, etc.) and the average time for holding these equity investments (if possible, distinguished by type of equity investment)?
4) Do you also grant loans to the issuers of your equity holdings? If yes, what is the reason for buying equity from and granting loans to the same counterparty?
5) What are the average RWs you currently apply to equities that in the final Basel III framework would be in the 250% and the 400% RW categories?
6) What are the criteria you used to distinguish between equity holdings that will be risk-weighted at 250% and those risk-weighted at 400%?
    a. Are the criteria in Basel III clear enough to apply them?
    b. Do you have the necessary information to apply the final Basel III criteria for categorization?

For banks using the IRB Approach:

7) What method for equities do you use: SA, simple risk weight approach, PD/LGD approach, internal models approach?
8) If you are applying the simple risk weight approach under the A-IRB, what are the criteria applied to identify private equity exposures in sufficiently diversified portfolios:
    a. How do you define the notion of portfolio, and
    b. How do you determine what is sufficiently diversified?

Annex 3: Additional results at solo and sub-consolidated level of banks' intragroup equity holdings

Equity exposures under the Standardised approach

Results of the additional data collection carried out at individual and sub-consolidated entity level, show that the majority of the equity exposures held by individual or sub-consolidated entities are equity holdings in entities within the perimeter of consolidated supervision. Equity exposures represent 3.3% of the total exposure under the standardised approach and most of it is intragroup equity exposure (2.8%).

Automotive and consumer credit banks (20.9%) and Cross-border universal banks (8.3%) are the business models with a higher share of equity exposures. For automotive and consumer credit banks, nearly 100% of the equity exposure corresponds to equity intra-group. For cross-border universal banks more than 86% of the equity exposure is intra-group

Table 10 Percentage of exposures to equity and exposures to equity intragroup under SA (over total SA exposure)

	% Equity	Of which: % Equity Intragroup
Total	**3.3%**	**2.8%**
Cross-border U	8.3%	7.1%
Local U	1.6%	1.2%
Auto & Cons	20.9%	20.9%
S&L Coop	0.1%	0.0%
Private	1.4%	1.2%
Merchant	2.3%	1.5%
Mortgage	0.1%	0.0%
Other special	0.2%	0.0%

Sources: EBA 2018-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 150 banks: Cross-border U (17), Local U (61), Auto & Cons (8), Building Soc* (2), S&L Coop (30), Private (9), CCP* (1), Merchant (3), Leasing* (2), Public Dev* (0), Mortgage (12), Other special (5). * Not shown in the chart because fewer than three entities in the cluster.

To evaluate the impact of the revised Basel III rules for the SA equity portfolios is important to take into account that most exposures are currently risk-weighted at 100% (with higher risk up to 250% weights if specific conditions apply) and will be risk-weighted at 250% in the revised framework within the 'other equity' sub-category. A different risk-weight applies to the newly created sub-categories Speculative Equity (risk weight 400%) and Equity under National Legislated Programmes (risk weight 100%).

Table 11 Percentage change in equity SA RWA (relative to current equity SA RWA), by equity sub-type

	% Equity, of which:	% Equity Intragroup	% Equity No Intragroup
Total	**136.2%**	**145.5%**	**99.3%**
Cross-border U	138.4%	146.3%	101.5%
Local U	123.8%	132.8%	105.3%
Auto & Cons	148.6%	148.6%	80.6%
S&L Coop	150.0%	150.0%	150.0%
Private	202.8%	250.2%	4.4%
Merchant	105.5%	150.0%	49.0%
Mortgage	126.7%	-	126.7%
Other special	150.0%	-	150.0%

Sources: EBA 2018-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 150 banks: Cross-border U (17), Local U (61), Auto & Cons (8), Building Soc* (2), S&L Coop (30), Private (9), CCP* (1), Merchant (3), Leasing* (2), Public Dev* (0), Mortgage (12), Other special (5). * Not shown in the chart because fewer than three entities in the cluster.

Table 12 Percentage change in equity SA RWA (relative to total current SA RWA), by BM

	% Equity	Of which: % Equity Intragroup
Total	**15.7%**	**13.4%**
Cross-border U	32.5%	28.3%
Local U	6.8%	4.9%
Auto & Cons	36.0%	36.0%
S&L Coop	0.6%	0.1%
Private	12.4%	12.3%
Merchant	19.3%	15.3%
Mortgage	0.7%	-
Other special	0.6%	-

Sources: EBA 2018-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 150 banks: Cross-border U (17), Local U (61), Auto & Cons (8), Building Soc* (2), S&L Coop (30), Private (9), CCP* (1), Merchant (3), Leasing* (2), Public Dev* (0), Mortgage (12), Other special (5). * Not shown in the chart because fewer than three entities in the cluster.

The increase in equity RWAs under the SA on individual and sub-consolidated entities due to the implementation of the revised Basel III rules (relative to the current equity RWAs) is 136.2%. For individual and sub-consolidated entities in the sample, the increase in intra-group equity RWAs is 145.5% whereas the increase for all other equity RWAs is 99.3%. Across the majority of business models, the increase in equity RWAs appears higher for intra-group equity exposures.

The contribution of the equity portfolio to the increase in total SA RWAs due to the implementation of the Basel III framework for the individual and consolidated entities in the analysis is 15.7%. Most of the impact arises from intra-group equity exposures (13.4%). The business models that present higher contributions of the equity and intra-group equity portfolio to the increase in total SA RWAs are Cross-border universal banks (32.5% and 28.3% RWAs increase) and Automotive and consumer credit banks (36% RWAs increase), which are also the business models with a higher proportion of equity and intragroup equity exposures.

Equity exposures under the IRB approach

Results show that the majority of the equity exposures held by individual or sub-consolidated entities, are equity holdings in entities within the same group. Under the IRB approach, Equity exposures represent 5.2% of the total exposure and most of it is intragroup equity exposure (4.4%).

Local universal banks (8.3%) is the business model with a higher share of equity exposures. 93% of the equity exposure corresponds to intra-group equity exposures for this business model.

Table 13 Percentage of exposures to equity and exposures to equity intragroup under IRB (over total IRB exposure)

	% Equity	Of which: % Equity Intragroup
Total	**5.2%**	**4.4%**
Cross-border U	4.0%	3.7%
Local U	8.3%	7.7%
Auto & Cons	0.0%	0.0%
S&L Coop	4.1%	1.8%
Mortgage	1.6%	1.5%

Sources: EBA 2018-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 98 banks: Cross-border U (15), Local U (35), Auto & Cons (3), Building Soc* (2), S&L Coop (28), Merchant* (2), Leasing* (2), Mortgage (9), Other special* (2).
* Not shown in the chart because fewer than three entities in the cluster.

The current framework distinguishes different approaches to calculate risk-weighted assets associated with equity exposures under the IRB approach:

a. The simple risk-weight approach applies specific risk weight to the exposure value. The applicable RW depends on the type of equity exposure:

    i. equity exposures in sufficiently diversified portfolios get a 190% risk weight,

    ii. exchange-traded equity exposures get a 290% risk weight,

    iii. all other equity exposure get a 370% risk weight.

b. The PD/LGD approach, under which risk-weighted assets associated with equity exposures are calculated using the same capital formulas as for exposures to corporates, institutions and central governments and central banks but applying equity specific risk parameters.

c. The internal models approach calculates equity risk-weighted assets as the potential loss for the institution using value-at-risk models.

The revised Basel III standards states that all equity exposures are subject to the SA, and the IRB approach is no longer an option under the revised Basel III framework for this type of exposures. This means that equity exposures that are currently risk-weighted using one of the aforementioned methods will be subject to the standardised risk weights (400%/100%/250%) under the revised standards.

Table 14 Percentage change in equity IRB RWA (relative to current equity IRB RWA), by equity sub-type

	% Equity, of which:	% Equity Intragroup	% Equity No Intragroup
Total	**3.3%**	**6.7%**	**-12.2%**
Cross-border U	-15.5%	-13.9%	-29.8%
Local U	24.8%	24.7%	25.6%
Auto & Cons	0.0%	0.0%	0.0%
S&L Coop	-1.2%	59.3%	-21.7%
Mortgage	-30.8%	-32.4%	-15.0%

Sources: EBA 2018-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 98 banks: Cross-border U (15), Local U (35), Auto & Cons (3), Building Soc* (2), S&L Coop (28), Merchant* (2), Leasing* (2), Mortgage (9), Other special* (2).
* Not shown in the chart because fewer than three entities in the cluster.

Table 15 Percentage change in equity IRB RWA (relative to total current IRB RWA), by BM

	% Equity	Of which: % Equity Intragroup
Total	**1.1%**	**1.8%**
Cross-border U	-5.1%	-4.1%
Local U	9.3%	8.6%
Auto & Cons	0.0%	0.0%
S&L Coop	-0.4%	4.7%
Mortgage	-8.6%	-8.2%

Sources: EBA 2018-Q2 QIS data and EBA calculations.
Notes: Based on a sample of 98 banks: Cross-border U (15), Local U (35), Auto & Cons (3), Building Soc* (2), S&L Coop (28), Merchant* (2), Leasing* (2), Mortgage (9), Other special* (2).
* Not shown in the chart because fewer than three entities in the cluster.

Annex 4: Sample and methodology

Data collection and process governance

The EBA collected a limited number of data related to the application of the final Basel III framework at individual and sub-consolidated level as well as intra-group exposures from all the banking groups that participated in the June 2018 Basel III Call for Advice QIS.

As described below, the scope of the exercise was limited to individual entities and a specific subset of subconsolidated entities. Information on the remaining sub-consolidation structures was not collected, as this could have led to double counting; for example in cases where a group has multiple levels of consolidation including the same entities. To avoid such instances, detailed and group-specific information would had to be collected to identify the levels of sub-consolidation along with the entities involved, which was considered too burdensome given the timeline of the data collection.

Against this background, the EBA opted to study in-depth a limited number of case studies with the purpose of better understanding the impact of the output floor at the subconsolidated level. In addition, the case studies were used to collect additional qualitative information on potential indirect costs of the application of the output floor at all levels that were not covered by the data collection.

Participation in the case studies was voluntary. The EBA aimed to achieve a diverse sample of cases studies in terms of group structure and business model; however only two french cooperative banks have volunteered to participate.

Sample

The impact analysis derived from this data collection aims to supplement the evidence published by the EBA in the August and December 2019 CfA report in response to the CfA from the European Commission. For this reason, the report covers the same banking groups that participated in the CfA QIS.[22]

The classification of the banks by business model is the same as in the "Basel III reform: impact assessment and key recommendations", published in August 2019. However, unlike the August 2019 report, the banks were not classified by size, as the size classification applies only to institutions at consolidated level.

Consolidation

As the impact analysis focuses on the implementation of the final Basel III framework at individual and sub-consolidated level within a banking group, institutions participating in the data collection exercise were asked to report:

[22] Standalone banks participating in previous data collection did not have to submit additional data.

a) **Capital requirements on an individual basis** for each and every **entity located in the EU/ EEA**, falling in the banking group's highest scope of prudential consolidation in the EU/ EEA that:

- is subject to CRR/CRD capital requirements on an individual basis (including the ultimate parent undertaking of the group), and
- has not been waived from applying the capital requirements on an individual basis, in accordance with the CRR;

b) **Capital requirements on a sub-consolidated basis** for each and every **entity located in the EU/ EEA**, falling in the banking group's highest scope of prudential consolidation in the EU/ EEA that:

- is subject to CRR/CRD capital requirements on a sub-consolidated basis; and
- All its subsidiaries or affiliates are not subject to capital requirements on individual and sub-consolidated basis or have been waived from such requirements.

Output floor and equity analysis sample

Comparison with sample in previous CfA report

A total of 189 banking groups participated in the previous CfA analysis. Among these 189 banking groups, 74 are standalone banks. Out of the 115 banks that were expected to participate in the additional data collection at individual and sub-consolidated level, 76 submitted the relevant templates. Table 16 and Table 17, show the comparison between both samples distinguishing by business model, country and size.

The differences between the number of banking groups that submitted the relevant templates and the banking groups finally included in the analysis, lie on additional restrictions that were set to ensure a minimum level of data quality. Restrictions at individual and sub-consolidated entity level, include additional data quality criteria, such as reporting both current and revised RWA figures that are different from each other.

Moreover, the sample for the output floor analysis is also restricted to all the banking groups for which the total RWA coverage is deemed sufficiently high.: The individual and sub-consolidated entities reported with enough data quality pass the exclusion criteria, and represent more than 90% of RWAs of all the individual and sub-consolidated entities of the group within the scope of the data collection. The restrictions at group level are applied to allow for a meaningful comparison with the consolidated figures.

Table 16 Comparison between participation in previous CfA and additional data collection at individual and consolidated level by business model.

	Number of banks participating in previous CfA			Number of banks participating in the additional CfA data collection		
	Total Number of banks	Of which: Standalone institutions	Of which: Banking groups	Total number of EU banking groups	of which: Banking groups included in the output floor analysis	of which: Banking groups included in the equity analysis
Total	**189**	**74**	**115**	**76**	**51**	**44**
Cross-border U	**40**	2	38	29	19	18
Local U	**52**	14	38	29	23	18
Auto & Cons	**7**	3	4	2	2	1
Building Soc	**6**	5	1	1	0	0
S&L Coop	**34**	23	11	5	2	3
Private	**8**	4	4	0	0	0
Custody	**7**	6	1	1	0	0
CCP	**1**	1	0	0	0	0
Merchant	**5**	3	2	2	2	0
Leasing	**1**	0	1	0	0	0
Public Dev	**10**	5	5	1	1	0
Mortgage	**8**	3	5	4	1	2
Other special	**10**	5	5	2	1	2

Table 17 Comparison between participation in previous CfA and additional data collection at individual and consolidated level by country.

	Number of banks participating in previous CfA			Number of banks participating in the additional CfA data collection		
	Total Number of banks	Of which: Standalone institutions	Of which: Banking groups	Total number of EU banking groups	of which: Banking groups included in the output floor analysis	of which: Banking groups included in the equity analysis
Total	**189**	**74**	**115**	**76**	**51**	**44**
AT	**15**	9	6	3	1	1
BE	**7**	4	3	0	0	0
DE	**40**	21	19	8	3	5
DK	**8**	5	3	3	3	3
EE	**2**	0	2	2	1	0
ES	**10**	0	10	10	6	5
FI	**5**	0	5	2	1	1
FR	**14**	4	10	5	3	2
GR	**4**	0	4	4	4	3
HU	**1**	0	1	1	0	0
IE	**8**	5	3	3	3	2
IT	**24**	4	20	11	10	8
LU	**6**	5	1	1	1	0
MT	**1**	0	1	1	0	1
NL	**12**	6	6	5	5	2
NO	**6**	4	2	2	0	1
PL	**9**	3	6	5	4	3
PT	**6**	1	5	4	1	4
SE	**11**	3	8	6	5	3

Table 18 Comparison between participation in previous CfA and additional data collection at individual and consolidated level by size

	Number of banks participating in previous CfA			Number of banks participating in the additional CfA data collection		
	Total Number of banks	Of which: Standalone institutions	Of which: Banking groups	Total number of EU banking groups	of which: Banking groups included in the output floor analysis	of which: Banking groups included in the equity analysis
Total	**189**	**74**	**115**	**76**	**51**	**44**
Large	**104**	21	83	62	43	39
Other	**61**	33	28	10	6	4
Small	**24**	20	4	4	2	1

Sample of individual and sub-consolidated entities for output floor and equity analysis

A total of 76 banking groups participated in the additional CfA analysis. The participating banking groups reported data for 313 entities within the scope of their prudential consolidation.

Out of the 313 individual and sub-consolidated entities for which data was reported in the additional CfA analysis QIS data collection exercise, 221 had data of sufficient quality to be included in the sample for the output floor analysis and 150 had sufficient quality to be included in the equity sample.

Table 19 Output floor and equity analysis samples, by country of banking group

Country of banking group	Number of solo or sub-consolidated entities reported by participating banks	Of which: Solo or sub consolidated entities with sufficient data quality to be included in the OF analysis	Of which: Individual entities with sufficient data quality to be included in the equity analysis
AT	5	2	2
BE	0	0	0
DE	21	4	10
DK	12	11	11
EE	1	1	0
ES	16	16	11
FI	3	1	2
FR	98	80	32
GR	8	8	4
HU	11	0	0
IE	9	9	5
IT	56	50	42
LU	1	1	0
MT	2	0	1
NL	11	9	3
NO	16	0	5
PL	9	5	3
PT	11	5	9
SE	23	19	10
Total	**313**	**221**	**150**

Methodology

The methodology used in this letter is the same as in the August 2019 report "Basel III reforms: impact study and key recommendations" (see section 2.4 of that report for more details).

The metrics used in this analysis are the same as in the August 2019 report. The analysis of the impact of the application of the output floor at solo and consolidated levels has been done in terms of T1 MRC and shortfalls only. The change of MRC from the baseline to the final Basel III framework takes into account the interaction between the RWA-based metric of T1 capital and the leverage ratio-based T1 metric of capital. More specifically, the T1 capital for the baseline scenario is the higher of the current RWA-based metric of T1 capital and the current leverage ratio-based metric of T1 capital. The revised T1 capital for the central reform scenario is the higher of the revised RWA-based metric of T1 capital and the revised leverage ratio-based metric of T1 capital. The RWA metric is not used because it does not reflect the interaction with leverage ratio.

Caution should be taken when comparing the results of consolidated data and individual or sub-consolidated data. Depending on individual circumstances and groups' structures, capital requirements are applied at multiple levels of consolidation: individual, sub-consolidated and consolidated. Capital requirements applied at different consolidation levels within a banking group are parallel requirements, i.e. they must all be met at any point in time. Own funds held by a given individual entity within the group to meet its individual capital requirement could also count to meet the requirements at higher levels of consolidation. In this sense, capital requirements (and by analogy capital shortfalls) referring to different levels of consolidation within a group are not additive and depend on the specific ownership structure of the group as well as the methods of prudential consolidation used.

In addition, it should be kept in mind that given the limited scope of the exercise, individual or sub-consolidated data do not cover 100% of the total assets of the banking group, allowing only for a partial comparison with consolidated data.