EBA/RTS/2020/07

14 October 2020

Final Report

Draft Regulatory Technical Standards on the prudential treatment of software assets under Article 36 of Regulation (EU) No 575/2013 (Capital Requirements Regulation – CRR)

amending Delegated Regulation (EU) 241/2014 supplementing Regulation (EU) No 575/2013 of the European Parliament and of the council with regard to regulatory technical standards for own funds requirements for institutions

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1. Executive summary

As part of the Risk Reduction Measures (RRM) package adopted by the European legislators, Article 36(1)(b) of the Capital Requirements Regulation (CRR) has been amended, introducing, inter alia, an exemption from the deduction of intangible assets from Common Equity Tier 1 (CET1) items for 'prudently valued software assets the value of which is not negatively affected by resolution, insolvency or liquidation of the institution'. In order to ensure prudential soundness in the application of the revised prudential treatment of software, a new paragraph 4 has been added to Article 36 of the CRR, giving the EBA a mandate to develop draft regulatory technical standards (RTS) 'to specify the application of the deductions referred to in point (b) of paragraph 1, including the materiality of the negative effects on the value which do not cause prudential concerns'. The EBA is fulfilling this new mandate by amending the existing RTS on own funds requirements for institutions.[1]

In developing these draft RTS, consideration has been given, inter alia, to (i) the differences in the valuation and amortisation of software assets and to the value realised from their sale; (ii) the international developments and the differences in the regulatory treatment of investments in software; (iii) the different prudential rules that apply to insurance undertakings and (iv) the diversity of the financial sector in the Union, including non-regulated entities such as financial technology companies. As part of its mandate, the EBA has investigated quantitative and qualitative aspects related to the amount of software assets held by EU institutions; their valuation and expected useful life and amortisation methodology in particular in the case of resolution, insolvency or liquidation; and the implications of a change in the regulatory treatment.

The EBA aimed to achieve an appropriate balance between the need to maintain a certain margin of conservatism/prudence in the treatment of software for prudential purposes, especially given its limited value in a gone concern scenario, and the acknowledgement of the relevance of software assets from a business and an economic perspective, in the context of an increasingly digital environment.

In the EBA's opinion, a prudential treatment of software assets based on their amortisation for prudential purposes is deemed to strike an appropriate balance between those objectives. In addition, it reflects the fact that the recoverable value of software is expected to decrease over time. The proposed approach is designed to be simple to implement and applicable to all institutions in a standardised manner, as is the case today with the deduction treatment. Based on feedback received from stakeholders, the EBA has calibrated the proposed approach on a 3-year time frame.

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[1] Delegated Regulation (EU) No 241/2014 supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council.

Finally, it is the EBA's intention to closely monitor the evolution of the investments in software assets going forward, including the link between the proposed prudential treatment and the need for EU institutions to make some necessary investments in IT developments in areas like cyber risk or digitalisation in particular.

2. Background and rationale

1. As part of the Risk Reduction Measures (RRM) package adopted by the European legislators in May 2019, Article 36(1)(b) of the CRR has been amended,[2] introducing, inter alia, an exemption from the deduction of intangible assets from Common Equity Tier 1 (CET1) items for 'prudently valued software assets the value of which is not negatively affected by resolution, insolvency or liquidation of the institution'.[3]

2. The arguments considered by the EU legislators when deciding to revise the prudential treatment of software included the increasing importance of these investments in the context of the evolution of the banking sector in a more digital environment and the existence of a potential source of competitive disadvantage for European institutions in comparison with certain non-regulated technological players (e.g. Bigtech and Fintech companies) and with certain international competitors, which do not account for software as an intangible asset and as a result do not deduct it from CET1 capital.

3. In order to ensure prudential soundness in the application of the revised prudential treatment of software, a new paragraph 4 has been added to Article 36 of the CRR, giving the EBA a mandate to develop draft regulatory technical standards 'to specify the application of the deductions referred to in point (b) of paragraph 1, including the materiality of the negative effects on the value which do not cause prudential concerns'.

2.1 General considerations on the EBA's mandate

4. In a letter to the co-legislators, dated 5 October 2018, the EBA noted that 'software treatment should not be hastily changed given that deduction as presently applied still reflects the likely absence of value of software in resolution and even more in liquidation. Such treatment should not be lifted without an in depth analysis, also to assess if and to which extent the situation has changed due to the digital revolution.'[4] In the same letter, the EBA highlighted that the applicable regulatory framework for own funds has proven to be effective and a weakening in the capital position of banks should be avoided.

5. The RTS have to strike an appropriate balance between two aspects:

   - On the one hand, software is very unlikely to have value from an own funds/CET1 perspective. This is because software assets are usually tailor-made and cannot be easily

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[2] See Regulation (EU) 2019/876 of 20 May 2019 (CRR2), amending Regulation (EU) No 575/2013 (https://data.consilium.europa.eu/doc/document/ST-6288-2019-INIT/en/pdf).
[3] In particular, according to Art. 36(1)(b), as amended by CRR2, institutions shall deduct from CET1 items 'intangible assets with the exception of prudently valued software assets the value of which is not negatively affected by resolution, insolvency or liquidation of the institution'.
[4] https://eba.europa.eu/documents/10180/2101654/EBA+BS+2018+336+%28EBA+Letter+to+Trilogue+re+RRM%29.pdf/05b0acf1-0ee1-4dd0-8dfb-f6cbd5d48beb.

sold on the market as standalone assets if needed (i.e. to absorb losses on an ongoing concern if losses arise). According to Article 26(1), second subparagraph, of the CRR, items shall be recognised as CET1 only where they are available to the institution for unrestricted and immediate use to cover risks or absorb losses as soon as they occur. By nature, intangible assets (including software) are highly unlikely to meet this requirement. In addition, some software assets are deemed to present a high level of volatility in terms of value, due to the fast pace of technological change, which results in rapid obsolescence.

- On the other hand, it is acknowledged that, from a business perspective, software assets have value for the institution that uses them, as the institution could not continue to function, being in a going concern situation or under resolution/liquidation, without its software. Furthermore, considering the increasing relevance that software assets and technology in general are assuming in the financial and banking sector, it is important to encourage IT investments with the aim of supporting the technological development and modernisation of the sector, given its importance also from a competitive perspective. That said, it cannot be disregarded that, in the event of merger/acquisition, resolution or liquidation, it appears that sooner or later the software assets of the bank will lose their value. While this might not happen on day one (as would be consistent with a full upfront deduction), in particular in the case of merger/acquisition or resolution, it will happen after some time (the related question being after what amount of time).

6. Based on investigations performed by the EBA on a representative selection of concrete cases of software transactions (see Section 2.2 below), it appears that software has no recoverable value in the event of liquidation; however, it is worth pointing out that in some cases software assets continue to be used during the liquidation process, contributing to an orderly liquidation. According to these data, a strict and literal interpretation of the EBA's mandate would probably lead to a very narrow or empty subset of software for which there would be no negative effects on the value which would not cause prudential concerns and for which no deduction from CET1 would apply. It is the EBA's view that this was not the intention of the co-legislators and that a less strict interpretation could be followed, as long as the RTS provide a satisfactory level of prudence. This approach would ensure consistency with both the investigations performed and the need for flexibility required in the light of (i) international developments and differences in the regulatory treatment of investments in software, (ii) the different prudential rules that apply to institutions and insurance undertakings, and (iii) the diversity of the financial sector in the Union (including non-regulated entities such as financial technology companies).

7. In addition, it is the EBA's view that certain high-level principles have to be followed in revising the regulatory treatment for software; the revised prudential treatment of software must:

   (a) be simple to implement and applicable to all institutions in a standardised manner, as is the case today with the deduction treatment;

   (b) be easy for competent authorities to supervise;

   (c) not be prone to circumvention by institutions;

(d) not lead to undue benefits/undue relief of CET1 capital;

(e) continue to entail a certain margin of conservatism/prudence in the valuation of software for prudential purposes.

8. In developing the principles underlying the amended regulatory treatment, the EBA has identified a number of areas where close scrutiny by regulators, supervisors and external auditors will be warranted, as a change in the current treatment will be likely to influence the accounting treatment of software assets and other related aspects for example in the case of business combinations (goodwill in particular).

9. In addition, it is the EBA's intention to closely monitor the evolution of investments in software assets going forward, including the link between the proposed prudential treatment and the need for EU institutions to make some necessary investments in IT developments in areas like cyber risk or digitalisation in particular.

2.2   Approach followed in developing the draft RTS

Overview of the approach followed

10. According to the recital 27 of CRR2, [5] in the context of the development of an appropriate prudential treatment for software, consideration has been given, inter alia, to:

- differences in the valuation and amortisation of software assets and in the value realised from their sale;

- international developments and differences in the regulatory treatment of investments in software;

- the different prudential rules that apply to insurance undertakings;

- the diversity of the financial sector in the Union, including non-regulated entities such as financial technology companies. [6]

11. In the light of this, as part of the mandate provided in Article 36(4) of the CRR, the EBA investigated the following aspects:

(a) the treatment of software under the different accounting standards applied in the EU (i.e. International Financial Reporting Standards (IFRS) and national generally accepted accounting principles (GAAP));

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[5] Regulation (EU) 2019/876 of the European Parliament and of the Council of 20 May 2019 amending Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms.

[6] Recital 27 of CRR2: 'In that context, differences in the valuation and amortisation of software assets and the realised sales of such assets should be taken into account. Furthermore, consideration should be given to international developments and differences in the regulatory treatment of investments in software, to different prudential rules that apply to institutions and insurance undertakings, and to the diversity of the financial sector in the Union, including non- regulated entities such as financial technology companies.'

(b) the practices observed for the purpose of software valuation in concrete cases of past transactions involving the EU banking sector (being liquidation, resolution or merger/acquisition cases), including the recoverable amount for the software in question (this qualitative data collection exercise is believed to be fundamental in order to assess the behaviour of software in real cases and under different types of business models and different types of circumstances);

(c) the prudential treatment of software applied in other jurisdictions at national level;

(d) the regulatory treatment applicable to insurance undertakings in the EU according to Delegated Regulation (EU) 2015/35 supplementing Directive 2009/138/EC (Solvency II Directive).

12. The main conclusions of the qualitative data collection can be summarised as follows.

(a) Full detailed information on all cases was not always retrievable, since several transactions occurred many years in the past and sometimes due to some confidentiality issues; this was the case in particular for resolution and liquidation cases that took place before the entry into force of the Bank Recovery and Resolution Directive. Moreover, even when they were accessible, the degree of information contained in evaluation reports for the valuation of software was quite limited.

(b) Recovery and resolution plans generally do not include detailed information on software assets and when they do, they show very large ranges of values with no specification of the valuation methodologies adopted.

(c) While the cases investigated were quite specific and had many elements that differed from case to case, some commonalities influencing software valuation could be identified. They related in particular to the following: (i) the acquiring entity (in particular a domestic versus a non-domestic buyer), (ii) the resolution strategy, (iii) the features of the software concerned (the degree of obsolescence, customisation, whether or not it supported client service quality, the materiality of the software in the balance sheet, etc.) and (iv) the time needed by the acquirer to integrate the acquired bank and its software into its own platform.

(d) As mentioned above, on the basis of the information collected and the cases examined, software has no recoverable value in the event of liquidation.

(e) Any software, regardless of its specific category, seems to have a similar probability of being written off or recovered.

(f) Usually, the valuation of software (or the assessment of its expected useful life) is revised by the acquirer after the acquisition date, on the basis of an assessment of the IT systems to be replaced as a result of the migration process, which, according to the evidence collected, could take between 1 and 3 years. This means that the final value of software is not always known at the date of acquisition. This also means that the software of the acquired entity ultimately loses its value when replaced by the software of the acquirer.

13. In addition, as a complement to the qualitative collection of concrete cases, a quantitative data collection exercise on software was performed on a sample of EU institutions in parallel with a similar exercise launched at the level of the Basel Committee on Banking Supervision (BCBS). This involved gathering data on the amount of software assets, on their amortisation period and on the potential implications of a change of the current regulatory treatment.

14. Finally, the EBA had bilateral exchanges with the banking industry aimed at collecting preliminary views on the national accounting standards applied to software, on the amount of software in banks' balance sheets, on the different categories of software and on possible alternative options to the deduction regime.

15. The whole set of information collected through the abovementioned analyses, both qualitative and quantitative, as well as the information from the round-table meeting and the feedback provided during the consultation (see the dedicated feedback table at the end of this document) was used by the EBA in developing these draft RTS.

Treatment of software under the accounting standards applicable in the EU

Accounting treatment of software under IFRS

A. Capitalisation of software

16. Under IFRS, software is explicitly mentioned as an example of an intangible asset.[7] Moreover, International Accounting Standard (IAS) 38, 'Intangible assets', establishes strict criteria for the capitalisation of internally generated software, requiring to distinguish between the research and the development phases of an internal project. Indeed, according to IAS 38:

    • the costs related to the research phase of a project (i.e. 'research costs') cannot be capitalised and shall be expensed in the income statement;

    • those costs related to the development phase of the project (i.e. 'development costs') shall be recognised as an intangible asset if they meet the conditions for capitalisation established in IAS 38.[8]

17. It should be note that, under IFRS, software that is an integral part of the related hardware is classified as a tangible asset and treated under IAS 16, 'Property, Plant and Equipment'. This is, for instance, the case for software embedded in computer-controlled equipment and essential for its correct functioning[9] or for the operating system of a computer. Even though, given the strict conditions established in IFRS, the amount of software classified within tangible assets is generally

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[7] Note that, according to the IFRS framework, an intangible asset is an identifiable non-monetary asset without physical substance. In addition, some characteristics need to be observed to meet the definition of intangible asset, in particular: identifiability, control over a resource and existence of future economic benefits.
[8] See, in particular IAS 38, para. 57.
[9] To the extent that hardware cannot operate without it.

limited, in some cases, certain EU institutions and financial conglomerates have reported a larger than expected part of their software assets within tangible assets.

B.   Amortisation of software

18. Under IFRS, software is normally accounted for using the cost model[10] and amortised on a straight-line basis.[11] In this regard, it is worth pointing out the following.

   (a) The <u>amortisation process shall begin when the related asset is available for use</u>, meaning that it shall be in the condition necessary to be capable of operating in the manner intended by management. Therefore, in some cases, the amortisation process could start even a long time after the date of initial capitalisation. This could occur, in particular, in case of certain internally generated software.

   (b) The <u>amortisation period of intangible assets shall reflect their useful life</u>, intended as the time during which they are expected to be available to use, which, in the specific case of software, could be affected by the rapid changes in technology.

19. Based on the evidence gathered through the quantitative data collection performed on the EU sample, the amortisation period of software assets held by European institutions is on average around 6 years.

Accounting treatment of software under the national GAAP applied in the EU

20. Even in those EU jurisdictions where IFRS standards are not mandatory for institutions, the accounting treatment of software is generally aligned with IFRS. However, in certain jurisdictions some differences can be observed, mainly with reference to the aspects discussed below.

A.   Capitalisation of software

21. Certain national GAAP applicable in the EU establish a different regime for the capitalisation of software from IFRS. In particular, in some jurisdictions, the capitalisation of internally generated software is not allowed or is subject to strict conditions,[12] while in others the national accounting standards provide the option to capitalise development costs or to expense them, while research costs shall always be expensed as in IFRS. Such an option is applicable also to those costs related to the development of internally generated software.[13] This means that, depending on the accounting policy adopted, the amount of software capitalised on the balance sheet may be lower than it would be if the institution were to apply IFRS. In addition, in some cases, the abovementioned option is associated with a specific regime for tax purposes.

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[10] Under the cost model, an asset is measured at its cost less any accumulated amortisation and any accumulated impairment losses.
[11] However, different amortisation methods are also allowed under IAS 38.
[12] This is, for instance, the case in Austria and the Czech Republic.
[13] This is the case, inter alia, in Finland, France, Germany, Ireland and Sweden.

B. Amortisation of software

22. As under IFRS, under the national GAAP applied in the EU, the amortisation period of software shall reflect its useful life. In particular, based on the evidence collected, institutions applying national GAAP generally amortise their software over a period that ranges between 3 and 10 years. Nevertheless, in certain cases, the amortisation period could even be significantly longer. Indeed, in some cases, certain software assets are amortised over 15 or 20 years. In addition, while some national GAAP provide a predefined maximum time frame for the amortisation of intangible assets (including software),[14] this limit is generally applicable only when the useful life of the related intangible asset cannot be reliably estimated. Therefore, in practice, these limits have no or limited application to software assets.

Potential implications on institutions' accounting practices that could arise from a revision of the current prudential treatment of software

23. Given the interplay between the prudential regulation and the accounting framework, it cannot be excluded that any change to the prudential treatment of software may affect the accounting practices currently adopted by EU institutions, including, inter alia, those related to the following aspects.

A. Capitalisation of costs related to internally generated software

24. According to both IFRS and the national GAAP applied in the EU, only those costs related to the development phase of an internal project can be capitalised, while the research costs shall be expensed in the income statement. However, the boundary between research and development costs is not always clear, since the accounting standards provide little guidance in this regard. Therefore, it cannot be excluded that any revision to the current regulatory treatment of software could provide institutions with incentives to inflate the amount of capitalised software by exploiting the lack of clarity in the accounting standards. Moreover, in those EU jurisdictions where the relevant national GAAP give the option to capitalise development costs or to expense them, institutions may be prone to change their initial accounting policy choice in order to benefit from the revised prudential treatment of software.[15] Scrutiny from all interested parties (regulators, supervisors, external auditors) will need to be exercised in this regard.

B. Amortisation of software

25. A prudential treatment of software based on amortisation may encourage institutions to extend the accounting amortisation period and align it with the prudential one, even when the effective useful life of the software in question is shorter. Therefore, it is paramount that the length of the prudential amortisation period is calibrated in a conservative manner. Moreover, as mentioned above, in some cases (and in particular in the case of certain internally generated software) the accounting amortisation process may start even a long time after the date of initial capitalisation.

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[14] Usually 5 or 10 years.
[15] Following the accounting policies applied by some institutions in these jurisdictions, internally generated software is currently not capitalised.

In the light of this, a regulatory framework for software assets based on their prudential amortisation is deemed to provide institutions with incentives to accelerate the finalisation and entry into amortisation of their internal projects.

C. **Treatment of software acquired in business combinations**

26. In a business combination, the acquirer should recognise an intangible asset separately from goodwill and should be able to determine its fair value. However, empirical evidence highlights that, following current practices, even in cases of acquisitions of companies that are software-based, a lot of the value of the acquired firm is generally attributed to goodwill. However, in the light of the revised regulatory treatment of software, institutions may be prone to trying to allocate more (fair) value to the software acquired in business combinations, in order to further benefit from either:

- the recognition of a lower amount of goodwill, given that, for regulatory purposes, it is deducted from CET1 capital; or

- the recognition of a higher amount of bargain purchase gain ('badwill'), to the extent that it is included in CET1 capital as part of the net income of the acquiring bank.

27. While the abovementioned accounting implications shall in the first place be subject to the scrutiny of external auditors, monitoring the existence of this practice would be a matter of interest from both a regulatory and a supervisory perspective, given the potential implications for the relevant regulatory metrics. Moreover, this gives rise to additional arguments for maintaining an appropriate margin of prudence in the revision of the prudential treatment of software assets.

Other frameworks that have been considered in the context of the draft RTS

Treatment applied in other jurisdictions at international level

28. At international level, the regulatory treatment applied to investments in software largely depends on their accounting classification as intangible or tangible assets. A significant number of jurisdictions require or allow the application of IFRS standards as in the EU (this is in particular the case in Canada,[16] Japan[17] and Saudi Arabia).

29. That said, some differences can be observed in other international accounting frameworks. A relevant example relates to the accounting principles applicable in the United States (i.e. US GAAP). Unlike IFRS, US GAAP do not explicitly state whether capitalised software shall be classified as a tangible or an intangible asset. Indeed, in 2009, AcSEC[18] decided that it was not necessary to

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[16] In Canada, IFRS are mandatory for most listed companies and financial institutions. However, companies also filing in the United States are permitted to apply US GAAP.
[17] In Japan, IFRS are one of the permitted accounting frameworks.
[18] The Accounting Standards Executive Committee, the former senior standard-setting body of the American Institute of Certified Public Accountants.

characterise computer software as either intangible assets or tangible assets when similar characterisations have not been made for most other assets. Therefore, US banks generally do not classify software as an intangible asset and, from a prudential perspective, they include it in their risk-weighted assets,[19] instead of deducting from own funds. A similar prudential treatment is also applied by certain Swiss banks.

Treatment applied to EU insurance undertakings

30. Insurance and reinsurance undertakings in the EU are subject to Delegated Regulation (EU) 2015/35 supplementing Directive 209/138/EC (Solvency II Directive). The prudential framework for insurance and reinsurance undertakings, in accordance with the Solvency II Directive, builds on a full market-consistent (fair value) valuation of all assets and technical provisions, including other liabilities, as the basis for the prudential balance sheet. The recognition and measurement of assets and liabilities other than technical provisions follows IFRS to the extent that a full market-consistent valuation can be ensured. Delegated Regulation (EU) 2015/35 points out several areas in which IFRS are not, or are only partially, applicable. Further, Delegated Regulation (EU) 2015/35 deviates from the recognition of assets and liabilities under IFRS in some instances, where, for example, contingent liabilities have to be recognised in the Solvency II balance sheet. In this regard, it is worth pointing out that under Solvency II all intangible assets, including software, shall be valued at zero, i.e. shall not be recognised, unless:

   (a) they can be sold separately; and

   (b) it can be demonstrated that there is a value for the same or similar assets, which is based on quoted market prices in an active market.[20]

   In addition, for those intangible assets for which a positive value is recognised, insurance companies are required to hold capital up to 80% of their value.[21]

31. The limited recognition of intangible assets – only those that are separately recognisable and sellable in an active market – is intended to acknowledge that in a full market-consistently valued balance sheet there may be intangible assets that can actually support the own funds of the insurance or reinsurance undertaking with a market value that is reliably measurable, based on quoted prices in an active market.

32. The EBA further investigated, with the support of the European Insurance and Occupational Pensions Authority (EIOPA), the treatment of software assets under Solvency II requirements by insurance undertakings and financial conglomerates. Based on the information collected, it seems that only in limited circumstances do insurance undertakings report a positive value for their intangible assets and that the amount reported does not normally include software assets.[22] This is consistent with the fact that software is generally not expected to be sold separately and, in the

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[19] Usually with a 100% risk weight.
[20] See Art. 12 and Art. 10(2) of Delegated Regulation (EU) 2015/35.
[21] See Art. 203 of Delegated Regulation (EU) 2015/35.
[22] With specific reference to those software assets classified as intangible assets for accounting purposes.

majority of cases, an active market is unlikely to exist for certain types of software, given their tailor-made features.

Proposed treatment

33. Based on the above, the EBA investigated several options, as follows: (i) full CET1 deduction, (ii) CET1 deduction by software category, (iii) alignment with Solvency II requirements and (iv) prudential amortisation. All options are explained in more detail in the cost–benefit analysis section of this document, including the pros and cons of each option. Ultimately, and based also on the feedback received during the consultation period, the EBA has decided to take an approach based on prudential amortisation.

34. Prudential amortisation is deemed to strike the right balance between the objectives set out above. Under this approach, the positive difference between the prudential and the accounting accumulated amortisation shall be fully deducted from CET1 capital, while the residual portion of the carrying amount of software is to be risk-weighted. Should the useful life of software estimated for accounting purposes be shorter than the prudential amortisation period, the former shall be used also for prudential purposes.

35. On the basis of the evidence collected on the length of the migration process in particular (observed to be between 1 and 3 years), and also considering the feedback received during the consultation, the calibration of the prudential amortisation period has been set at maximum 3 years.

3. Draft regulatory technical standards

COMMISSION DELEGATED REGULATION (EU) …/..

amending Delegated Regulation (EU) No 241/2014 supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to regulatory technical standards for own funds requirements for institutions

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 [23], and in particular the third subparagraph of Article 36(4), thereof,

Whereas:

(1)   The treatment of prudently valued software assets, the value of which is not materially affected by the resolution, insolvency or liquidation of an institution, was amended by Regulation (EU) 2019/876 of the European Parliament and of the Council[24] to further support the transition towards a more digitalised banking sector. Regulation (EU) 2019/876 also introduced Article 36(4) into Regulation (EU) No 575/2013 requiring the European Banking Authority ('EBA') to develop the technical standards specifying the application of the deductions related to software assets from Common Equity Tier 1 items. To ensure coherence of provisions related to own funds and to facilitate their application by persons subject to relevant obligations, it is appropriate to incorporate those technical standards into Commission Delegated Regulation (EU) No 241/2014[25], which groups all technical standards concerning own funds.

(2)   Due to the diversity in software used by institutions, it is difficult to assess, in a general way, which software assets could have a recoverable value in case of a resolution, insolvency or liquidation, and, if so, to what extent, or to identify a specific category of software that would preserve its value even in such a scenario.

(3)   Moreover, an assessment by the EBA of concrete cases of past transactions suggests that all software assets, without a distinction of specific categories, have the same

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[23] OJ L 176, 27.6.2013, p. 1.

[24] Regulation (EU) 2019/876 of the European Parliament and of the Council of 20 May 2019 amending Regulation (EU) No 575/2013 as regards the leverage ratio, the net stable funding ratio, requirements for own funds and eligible liabilities, counterparty credit risk, market risk, exposures to central counterparties, exposures to collective investment undertakings, large exposures, reporting and disclosure requirements, and Regulation (EU) No 648/2012 (OJ L 150, 7.6.2019, p. 1).

[25] Commission Delegated Regulation (EU) No 241/2014 of 7 January 2014 supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to regulatory technical standards for Own Funds requirements for institutions (OJ L 74, 14.3.2014, p. 8).

likelihood of being written off. Even in those cases where the value of software assets is at least in part preserved, generally the useful life of such software is revised to take into account that such software will be kept in use by the acquirer of an institution only until the end of a migration process. Such migration process, the collected evidence shows, typically ranges between one and three years. That pattern should be reflected in the prudential treatment of software assets.

(4)   Given the limited value software assets appear to have in case of a resolution, insolvency or liquidation of an institution, it is essential that the prudential treatment of such assets strikes an appropriate balance between, on the one hand, prudential concerns, and, on the other hand, the value of those assets from a business and an economic perspective. The prudential treatment of software assets should thus entail a certain margin of conservatism on the relief in Common Equity Tier 1 capital requirements.

(5)   In addition, in order not to introduce additional operational burdens for the institutions and to facilitate supervision by the competent authorities, the prudential treatment of software assets should be simple to implement and applicable to all institutions in a standardised manner. The standardised prudential treatment should not prevent an institution from continuing to fully deduct its software assets from Common Equity Tier 1 items.

(6)   Given the rapid changes in technology, institutions often invest in maintenance, enhancements or upgrades of their software. To mitigate any risk of regulatory arbitrage, those investments should be amortised separately from the software that is maintained, enhanced or upgraded, provided that they are recognised as an intangible asset on the balance sheet of the institution under the applicable accounting framework.

(7)   Competent authorities should not be prevented from scrutinising the software assets that an institution includes in capital on a case-by-case basis and exercising their supervisory powers in accordance with Directive 2013/36/EU in particular where the stock of investments in software could result in an undesired prudential benefit or where the degree of judgement stemming from the accounting principles is used to circumvent the provisions of this Regulation.

(8)   Commission Delegated Regulation (EU) No 241/2014 should therefore be amended accordingly.

(9)   This Regulation is based on the draft regulatory technical standards submitted to the Commission by the EBA.

(10)   The EBA has conducted open public consultations on the draft regulatory technical standards on which this Regulation is based, analysed the potential related costs and benefits and requested the advice of the Banking Stakeholder Group established in accordance with Article 37 of Regulation (EU) No 1093/2010 of the European Parliament and of the Council[26].

(11)   Given the accelerated uptake of digital services as a consequence of the COVID-19 pandemic, this Regulation should enter into force on the day following that of its publication in the Official Journal of the European Union,

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[26] Regulation (EU) No 1093/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Banking Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/78/EC (OJ L 331, 15.12.2010, p. 12).

HAS ADOPTED THIS REGULATION:

Article 1

Amendments to Delegated Regulation (EU) No 241/2014

Delegated Regulation (EU) No 241/2014 is amended as follows:

(1)   in Article 1, point (f) is replaced by the following:

'(f) the application of the deductions from Common Equity Tier 1 items and other deductions for Common Equity Tier 1, Additional Tier 1 and Tier 2 items in accordance with paragraphs (2) and (4) of Article 36 of Regulation (EU) No 575/2013;'

(2)   the following Article 13a is inserted:

'*Article 13a*

Deduction of software assets that are classified as intangible assets for accounting purposes for the purposes of Article 36(1), point (b), of Regulation (EU) No 575/2013

1.   Software assets that are intangible assets as defined in Article 4(1), point (115), of Regulation (EU) No 575/2013, shall be deducted from Common Equity Tier 1 items in accordance with paragraphs 5 to 8 of this Article. The amount to be deducted shall be determined on the basis of the prudential accumulated amortisation calculated in accordance with paragraphs 2 to 4 of this Article.

2.   Institutions shall calculate the amount of the prudential accumulated amortisation of a software asset referred to in paragraph 1 by multiplying the amount obtained from the calculation referred in point (a) by the number of days referred to in point (b):

(a)   the amount at which the software asset has been initially recognised in the balance sheet of the institution under the applicable accounting framework, divided by the lower of:

(i)   the number of days of useful life of the software asset, as estimated for accounting purposes;

(ii)   three years, expressed in days, starting from the date referred to in paragraph 3;

(b)   the number of days elapsed since the date referred to in paragraph 3, provided that this does not exceed the period referred in point (a) of this paragraph.

3. The prudential accumulated amortisation referred to in paragraph 1 shall be calculated starting from the date on which the software asset is available for use and begins to be amortised for accounting purposes.

4. By way of derogation from paragraph 3, where a software asset has been acquired from any undertaking, including a non-financial sector entity, that is part of the same group as the institution, the prudential accumulated amortisation referred to in paragraph 1 shall be calculated from the date on which that software asset began to be amortised under the applicable accounting framework on that undertaking's balance sheet.

5. Institutions shall deduct from Common Equity Tier 1 items the amount resulting from the difference, if positive, between the amount in point (a) and the amount in point (b):

    (a) the prudential accumulated amortisation of a software asset calculated in accordance with paragraphs 2 to 4;

    (b) the sum of the accumulated amortisation and any accumulated impairment losses of that software asset recognised on that institution's balance sheet under the applicable accounting framework.

6. By way of derogation from paragraph 5, until the date on which the software asset is available for use and begins to be amortised for accounting purposes, institutions shall deduct from Common Equity Tier 1 items the full amount at which the software asset is recognised on that institution's balance sheet under the applicable accounting framework.

7. The prudential amortisations and deductions set out in this Article shall be made separately for each software asset.

8. Institutions' investments in maintaining, enhancing or upgrading existing software assets shall be treated as separate assets from the related software assets, provided that those investments are recognised as an intangible asset on that institution's balance sheet under the applicable accounting framework.

    Without prejudice to paragraph 6, the prudential accumulated amortisation of those investments in maintaining, enhancing or upgrading existing software assets shall be calculated from the date on which they begin to be amortised under the applicable accounting framework.

    The prudential accumulated amortisation of related existing software assets shall continue to be calculated from the date of their own initial amortisation for accounting purposes and until the end of the period of the prudential amortisation determined in accordance with point (a) of paragraph 2.

Article 2

Entry into force

This Regulation shall enter into force on the day following that of its publication in the *Official Journal of the European Union.*

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

For the Commission
The President
[Position]

4.   Accompanying documents

4.1   Cost-benefit analysis / impact assessment

1.   Article 10(1) of the EBA Regulation (Regulation (EU) No 1093/2010 of the European Parliament and of the Council) provides that when any draft regulatory technical standard developed by the EBA are submitted to the European Commission for adoption, they should be accompanied by an analysis of 'the potential related costs and benefits'. This analysis should provide an overview of the findings regarding the problem to be dealt with, the solutions proposed and the potential impact of these options. To this end, the present section provides an impact assessment (IA) of the draft RTS, developed on the basis of the evidence from the data collection on software assets launched by the EBA on a sample of 64 EU institutions as an extension of the BCBS Quantitative Impact Study (QIS).

2.   In this regard, it is worth noting that the BCBS QIS included a number of templates aimed at collecting information on the following aspects:

   (a)   **software valuation, regulatory impact and planned investments**, including information on the volume of software assets, the regulatory treatment applied and the projection of upcoming investments in software;

   (b)   **software amortisation**, including data on the amortisation period and the years in use of both software not yet fully amortised and past investments in software assets;

   (c)   **realised sales of software**, including information related to software valuation in the event of a merger and acquisition transaction or resolution.

   In addition, for the purpose of the QIS templates, institutions were also asked to classify their investments in software into the following categories:

   •   **Regulatory compliance, risk management and cybersecurity:** this category includes software for risk management, investments related to cybersecurity or the implementation of regulatory requirements and reporting;

   •   **Core banking and trading software and investments in digitalisation of processes:** this category includes software for core banking functions day-by-day banking activities (e.g. payment services, digital banking, customer and external stakeholder relations), and trading and investment operations, as well as software investments affecting the function or the performance of multiple categories of software.

- **Software developed to be sold.**

- **Other.**

3. The reference date of the BCBS QIS on software assets was 31 December 2018. The EU data collection replicated fully the BCBS QIS templates, but the EBA complemented them with some qualitative information based on the examination of past cases of software transactions, as explained in the background section of this consultation paper.

4. The impact assessment includes an overview of the existing problems that the draft RTS deal with, the options proposed for resolving them and the potential impact of these options.

A. Problem identification

5. The EBA has developed these draft RTS in accordance with the mandate provided in Article 36(4) of the CRR, under which the EBA shall develop draft regulatory technical standards to specify the application of the deductions referred to in point (b) of paragraph 1 of Article 36, including the materiality of negative effects on the value which do not cause prudential concerns.

6. Article 36(1)(b) of the CRR establishes that intangible assets shall be deducted from Common Equity Tier 1 (CET1) items. However, as part of the Risk Reduction Measures Package approved in May 2019 by the European legislators, this article has been amended, introducing an exemption from deduction of intangible assets from CET1 items for 'prudently valued software assets the value of which is not negatively affected by resolution, insolvency or liquidation of the institution'. This specification is important, since software is a broad concept that covers many different types of assets, while the objective of this amendment is to limit the exemption from CET1 deduction only to those software assets that would preserve their value even in a situation of gone concern.[27]

B. Policy objectives

7. These draft RTS aim to provide clarity to institutions regarding the application of the provisions introduced in Article 36(1)(b) of the CRR, with specific reference to the prudential treatment of software assets. In this regard, in the EBA's view, these RTS should strike an appropriate balance between the following two aspects.

- On the one hand, software is very unlikely to have value from an own funds/CET1 perspective. This is because software assets are usually tailor-made and cannot be easily sold on the market as standalone assets if needed (i.e. to absorb losses on an ongoing concern if losses arise). According to Article 26 of the CRR, items shall be recognised as

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[27] See also recital 27 of Regulation (EU) No 2019/876 ('CRR2'), amending the CRR.

CET1 only where they are available to the institution for unrestricted and immediate use to cover risks or losses as soon as they occur. By nature, intangible assets (including software) are highly unlikely to meet this requirement. In addition, some software assets are deemed to present a high level of volatility in terms of value, due to the fast pace of technological change, which results in rapid obsolescence.

- On the other hand, it is acknowledged that, from a business perspective, software assets have value for the institution that uses them, as the institution could not continue to function, being in going concern situation or under resolution/liquidation, without its software. Furthermore, considering the increasing relevance that software assets and technology in general are assuming in the financial and banking sector, it is important to encourage IT investments with the aim of supporting the technological development and modernisation of the sector, given its importance also from a competitive perspective. That said, it cannot be disregarded that, in the event of merger/acquisition, resolution or liquidation, it appears that sooner or later the software of the bank will lose its value. While this might not happen on day one (as would be consistent with a full upfront deduction), in particular in the case of merger/acquisition or resolution, it will happen after some time (the related question being after what amount of time).

8. Based on investigations performed by the EBA on a selection of concrete cases of software transactions, it appears that software has no recoverable value in the event of liquidation; however, it is worth pointing out that in some cases software assets continue to be used during the liquidation process, contributing to an orderly liquidation, and, therefore, enhancing the overall liquidation value of the institution. A strict and literal interpretation of the EBA's mandate would probably lead to a very narrow or empty subset of software for which there would be no negative effects on the value which would not cause prudential concerns and for which no deduction from CET1 would apply. It is the EBA's view that this was not the intention of the co-legislators and that a less strict interpretation could be followed, as long as the RTS provide a satisfactory level of prudence and conservatism.

9. In addition, it is the EBA's view that certain general principles should be followed in developing the regulatory treatment for software; the revised prudential treatment of software shall:

(a) be simple to implement and applicable to all institutions in a standardised manner, as this is the case today with the deduction treatment;

(b) be easy for competent authorities to supervise;

(c) not be prone to circumvention by institutions;

(d) not lead to undue benefits/undue relief of CET1 capital;

(e) continue to entail a certain margin of conservatism/prudence in the valuation of software for prudential purposes.

C. Baseline scenario

10. The baseline scenario (i.e. the scenario against which the impact is assessed), is the current situation, where software assets are deducted from Common Equity Tier 1 items, in accordance with the CRR provisions currently applicable. It should be noted that, based on the data gathered through the data collection launched by the EBA, the current regulatory treatment of software has a negative impact of approximately 36 basis points (bps) on the CET1 ratio of the institutions in the sample. As a matter of fact, in line with the spirit of the amendments introduced to Article 36(1)(b) of the CRR, all the policy options considered by the EBA would result in a more favourable outcome than the current regulatory treatment.

11. Note that, owing to data limitations, some assumptions were necessary to assess the impact of the different policy options.

- For the purpose of the impact assessment, the investments in software are assumed to be capitalised in full as of 31 December of each year.

- For 2018 and previous years, the gross investment in year t is estimated by subtracting the reported gross software exposure in year t – 1 from the gross software exposure in year t.[28]

- Since banks were asked to report a lump sum amount of future software investments for 2019–2021, the analysis assumes that this investment is allocated equally to each year.[29]

D. Options considered

12. In developing these draft RTS, the following policy options were considered for the development of a prudential framework for software assets.

- **Option 1:** maintaining the current regulatory treatment established in the CRR, involving the deduction of software assets from CET1 items (full CET1 deduction).

- **Option 2:** introducing a prudential framework based on the deduction from CET1 items of software assets depending on their categorisation (CET1 deduction by software category).

- **Option 3:** applying the regulatory treatment established in Delegated Regulation (EU) 2015/35 (alignment with Solvency II requirements).

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[28] Thus, it is assumed that no software is sold or written down. If the computation leads to a negative amount or if gross book value is not reported for years before 2018, the investment is assumed to be nil.
[29] In the case of prudential amortisation (Option 4), for those institutions that did not report any information on the future investments in software planned for the period 2019–2021, the amount of the investments in software made in 2018 has been taken as a proxy for future investments in software.

- **Option 4:** introducing a prudential framework based on the amortisation of software assets (prudential amortisation).

E. Cost-Benefit Analysis

Option 1: full CET1 deduction

13. This option would result in confirming the current regulatory treatment of software established in the CRR, given the high degree of uncertainty related to the recoverable value of these assets in a gone concern scenario.

14. While such an approach would not be in line with the spirit of the amendments to the CRR introduced as part of the Risk Reduction Measures Package, the evidence collected from the analysis of concrete cases of software transactions confirmed the uncertainty of the recoverable value of software, which represents a valid argument for maintaining a certain margin of conservatism in its prudential treatment.

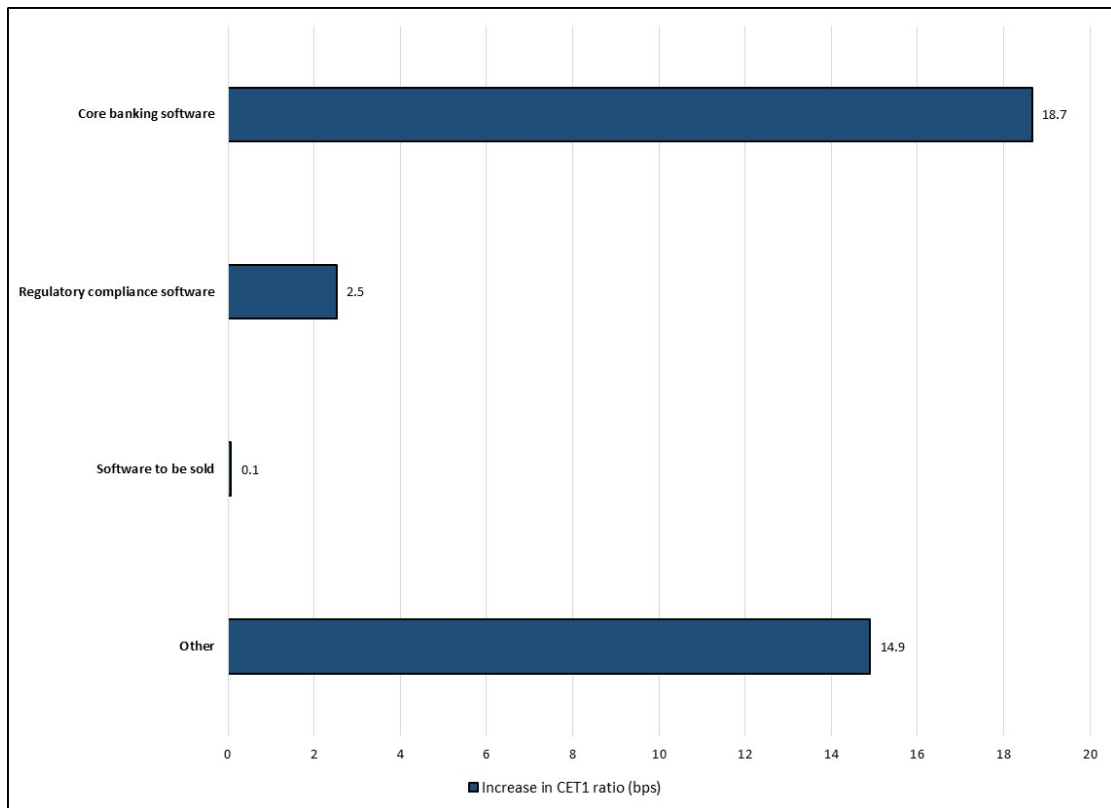### Option 2: CET1 deduction by software category

15. Under this option, software assets would be classified within different categories and a 100% risk weight would be applied to those categories of software that are expected to preserve their value even in a situation of gone concern,[30] while the remaining software assets would continue to be fully deducted from CET1 items, in line with the current regulatory treatment.

16. The impact of this option would vary depending on which category of software is exempted from the deduction from CET1 items. In particular, based on the software categorisation set out above, the increase in the CET1 ratio of the institutions in the sample for the EBA data collection would range from 0.1 bps to 18.7 bps,[31] depending on the category excluded from CET1 deduction, as shown in Figure 1.[32]

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[30] In line with the provisions of Art. 113(5) and Art. 156 of the CRR.
[31] In particular, the CET1 ratio of the institutions in the sample would increase by 0.1 bps if only 'software developed to be sold' were exempted from CET1 deduction. By contrast, excluding from CET1 deduction the category 'core banking and trading software and investments in digitalisation of processes' would result in an increase in the CET1 ratio of 18.7 bps.
[32] Note that, for the sake of simplicity, the analysis below does not consider the implications for CET1 capital of the increase in the CET1 threshold established in Art. 48 of the CRR.

Figure 1: Option 2: Increase in CET1 ratio as at December 2018

17. The impact on CET1 capital stemming from the application of this option would also vary depending on which category of software is exempted from the deduction from CET1 items. The increase in CET1 capital would range from EUR 0.04 billion to EUR 12.8 billion, as shown in Figure 2.

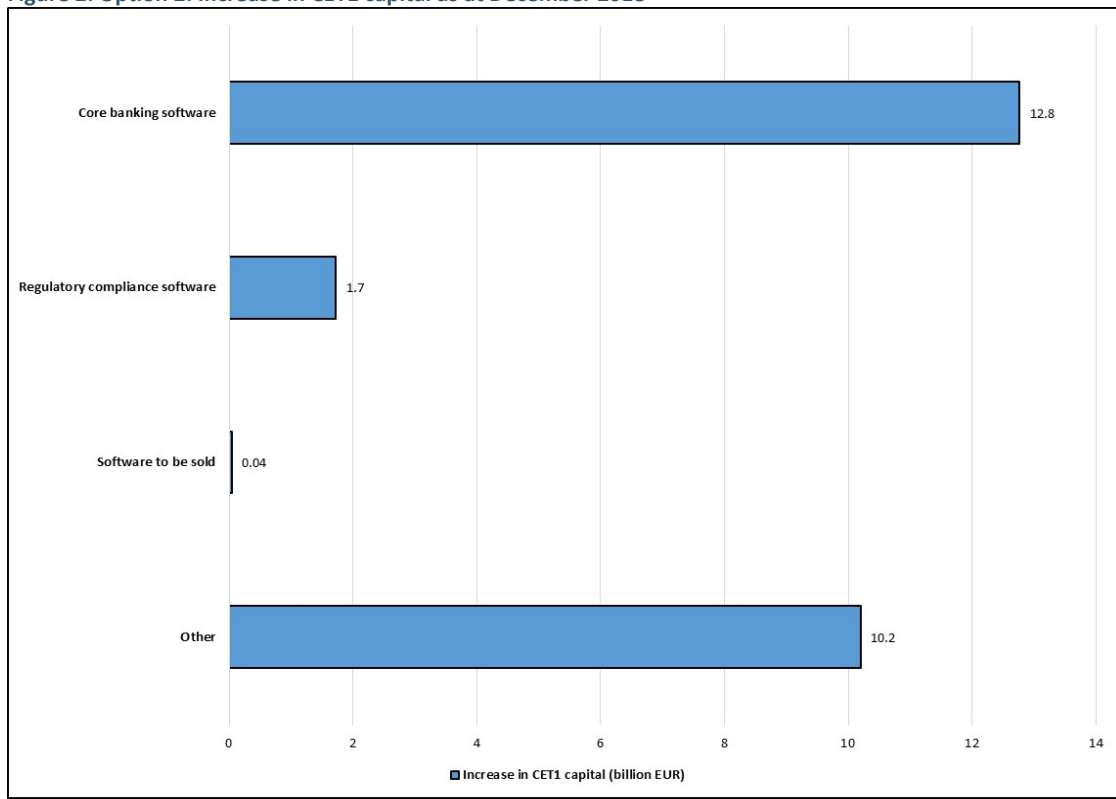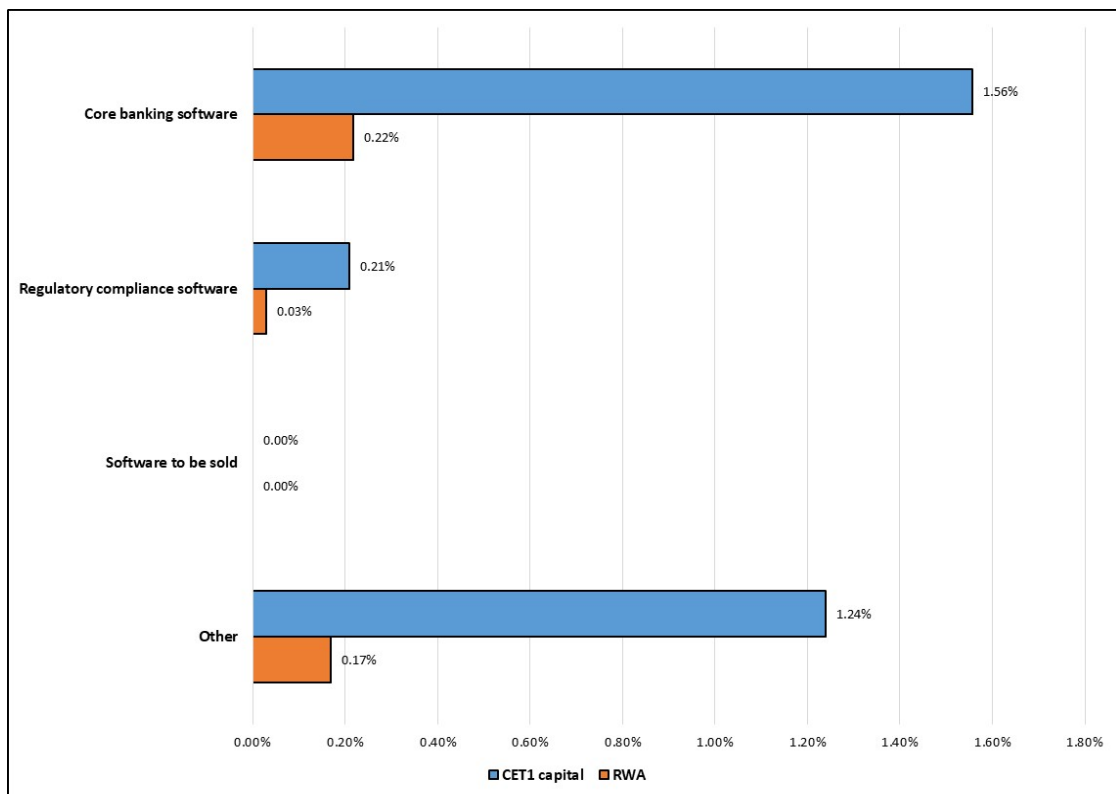**Figure 2: Option 2: Increase in CET1 capital as at December 2018**

Figure 3: Option 2: Increase in CET1 capital and in RWA as at December 2018

18. Although this option seems to be the one that is best aligned with the wording used in the Level 1 text,[33] any categorisation of software would involve, by definition, a certain degree of judgement and, as such, might prove difficult for supervisors to challenge, and would therefore introduce potential for regulatory arbitrage. Moreover, whether (and to what extent) software would have a recoverable value in the event of resolution, liquidation or any other insolvency procedure is controversial and difficult to generalise about. Indeed, given the different factors that can affect software valuation, it is not possible to identify a specific category of software assets the value of which could be considered recoverable even in a gone concern scenario, since, a priori, all software seems to have the same probability of being written off, and the amount effectively recovered would mainly depend on the specific characteristics of the transaction and on the features of the IT systems in question.

Option 3: alignment with Solvency II requirements

19. This option would entail the adoption of the same regulatory treatment applicable to insurance and reinsurance undertakings in accordance with Delegated Regulation (EU) 2015/35 (supplementing the Solvency II Directive). This approach would be consistent with the considerations included in recital 27 of CRR2.[34] In addition, the principles of Solvency II, as well as the evidence collected on the effective application by insurance entities and financial conglomerates of these principles seem to align with some observations made by the EBA that software assets do not always have value in the markets on a standalone basis and that an active market is unlikely to exist for some software, given its tailor-made features. In this regard, it is worth noting that the EBA investigated the regulatory treatment of software assets adopted by the insurance parts of a sample of EU financial conglomerates.[35] The evidence collected confirmed that those software assets classified for accounting purposes within intangible assets are reported at a nil value for Solvency II purposes.

20. That said, there are some reasons why the treatment applied by insurance entities, while being fully valid for them, might not be valid for banks. In this regard, it is worth pointing out that Solvency II provides in principle for an approach whereby no intangible assets are recognised unless the insurance or reinsurance undertaking can provide reasonable evidence that indeed that asset can be sold in an active market and could be liquidated under normal market conditions. Such intangible assets recognised in the Solvency II balance sheets are very clearly insignificant and amount to 0.0002% of the European insurers' total assets at Q3 2019.[36]

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[33] According to Art. 36(1)(b) of CRR, institutions shall deduct from CET1 items 'intangible assets with the exception of prudently valued software assets, the value of which is not negatively affected by resolution, insolvency or liquidation of the institution'.

[34] Pursuant to recital 27 of CRR2, in developing the prudential treatment of software, consideration should be also given to the 'different prudential rules that apply to institutions and insurance undertakings'.

[35] The stock-take included 19 financial conglomerates from seven EU countries.

[36] See the European Insurance and Occupational Pensions Authority (2020), quarterly statistics (solo) (available at https://register.eiopa.europa.eu/Publications/Insurance%20Statistics/SQ_Balance_Sheet.xlsx).

Option 4: prudential amortisation

21. This approach would result in the application of a prudential amortisation schedule to all software assets, regardless of the estimated useful life adopted for accounting purposes. In particular, under this approach, the positive difference between (i) the accumulated amortisation calculated for prudential purposes and (ii) the sum of the accumulated amortisation and any impairment losses recognised in accordance with the applicable accounting framework would be fully deducted from CET1 items. The remaining portion of the carrying amount of each software asset[37] would, instead, be subject to a 100% risk-weight, in accordance with the CRR provisions. Moreover, should the useful life of software estimated for accounting purposes be shorter than the prudential amortisation period, the former would be used also for prudential purposes.

22. Under this option, the prudential treatment of software would affect EU institutions' regulatory metrics over time, resulting in a relief in CET1 capital, progressively decreasing until the end of the amortisation period defined for prudential purposes. The magnitude of the relief would also depend, inter alia, on the yearly rate of investments in software made by each institution. In this regard, it could be argued that the prudential treatment proposed under Option 4 would also have the merit of encouraging EU institutions to invest in software, in line with the spirit of the Level 1 text. Finally, the prudential relief with respect to the current regulatory treatment would also depend on the length of the prudential amortisation period. In this regard, for the purpose of assessing the impact stemming from this policy option, a prudential amortisation period of 3 years has been assumed, in line with the approach established in these RTS.

23. Based on the information gathered through the data collection exercise and on the assumptions adopted for the purpose of the impact assessment,[38] for the entire sample this option would lead to a maximum increase in CET1 capital of approximately EUR 16.6 billion in 2018, EUR 19 billion in 2019, EUR 20.2 billion in 2020 and EUR 20 billion in 2021, as shown in Figure 4. For the sake of clarity, it is worth noting that, given the lack of information on both the starting date of the accounting amortisation for each software asset and the date of its

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[37] Meaning the portion of the accounting carrying amount of each software asset that is not deducted from CET1 items as a result of the application of the prudential amortisation treatment.
[38] Note that the figures below are based on the information gathered through the EBA data collection on software assets, conducted with a December 2018 reference date. In particular, the data on the period 2019–2021 are based on the information reported by a sample of EEA institutions on the aggregated level of investments in software envisaged in the 3 years following the reporting period (from December 2018 to December 2021). In addition, for the sake of simplicity, the following assumptions were made.
- Given the lack of detailed data, it was assumed that the total amount of investments in software were distributed equally for each year (2019–2021). In addition, for those institutions that did not report any information on the future investments in software planned for the period 2019–2021, the amount of the investments in software made in 2018 was taken as a proxy for future investments in software.
- Given the lack of information on the allocation of the accumulated impairment losses for each of the software assets reported by the institutions in the sample up to December 2018, it was assumed that these impairment losses referred to software assets capitalised for more than 3 years, which, as such, were to be completely amortised for prudential purposes.
- The implications on CET1 capital of the increase in the CET1 threshold in Art. 48 of the CRR have not been taken into account.

capitalisation, the impact of this policy option has been estimated assuming, inter alia, that for each reporting year the investments in software are capitalised on 31 December of each year and that prudential amortisation starts from that date.

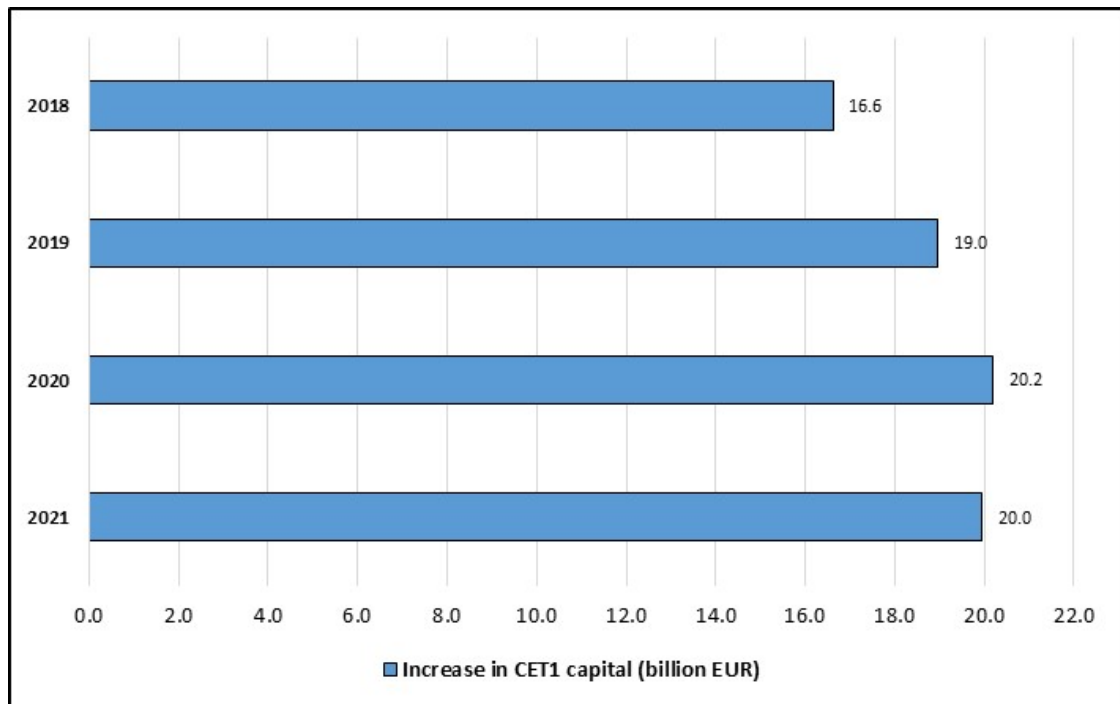**Figure 4: Option 4: increase in CET1 capital (3 year amortisation)**

Figure 5: Option 4: increase in CET1 capital and in RWA (3-year amortisation)
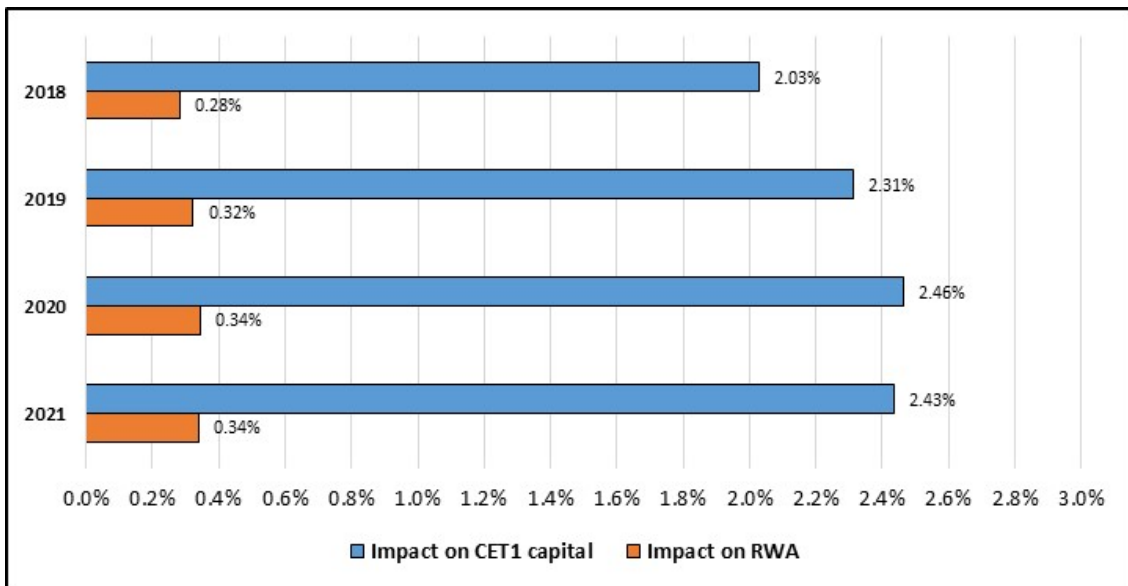

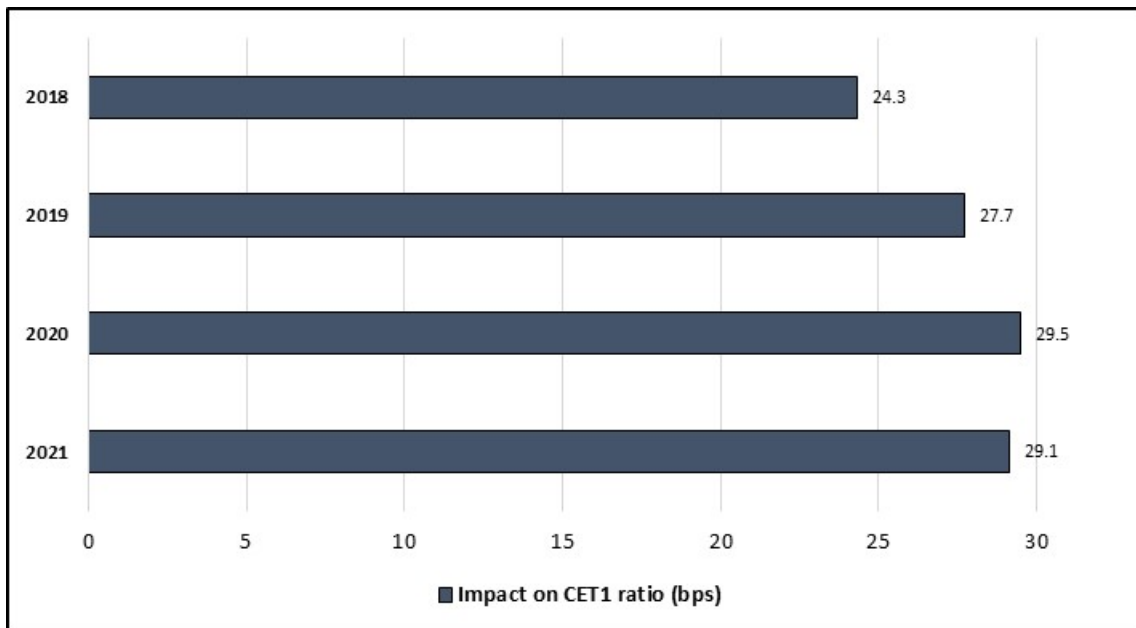**Figure 6: Option 4: increase in CET1 ratio (3-year amortisation)**
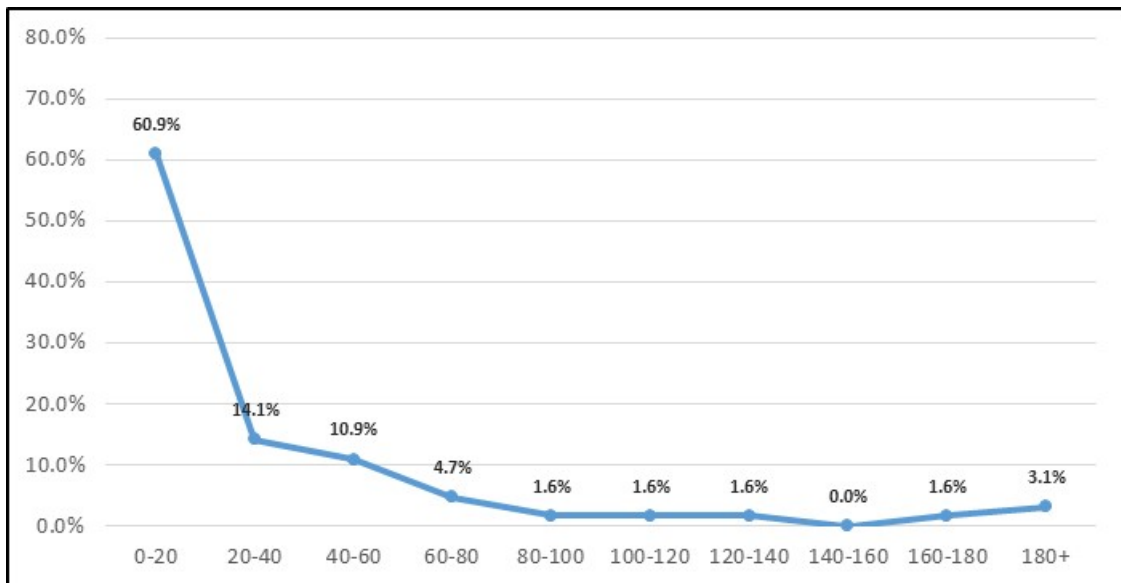
Figure 7: Option 4: Distribution of the impact on CET1 ratio as at 31 December 2018 (3-year amortisation)[39]

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[39] For the purpose of this graph, the *x*-axis is the CET1 ratio impact bucket (in bps), while the *y*-axis is the percentage of reporting institutions belonging to each impact bucket.

Discussion with the banking sector

24. Various stakeholders and representatives of banking associations provided the EBA with their initial thoughts and proposals for the development of a prudential framework on software. In general, there was broad support for an approach that would be easy to implement and applicable to all EU institutions. Moreover, the majority of stakeholders expressed a preference for a prudential framework applicable to all software assets and based on their expected remaining useful life, even though the approaches proposed had some differences in terms of their implementation. However, the main proposals generally dealt with the following two approaches.

- **Approach 1:** this approach would entail (i) the exemption from CET1 deduction of those software assets with a remaining useful life below a certain threshold (generally 5–6 years)[40] and (ii) the deduction from CET1 items of the portion of the net book value of software that reflects a remaining useful life beyond the threshold (potentially with a system based on gradually increasing deduction percentages).

- **Approach 2:** under this approach, software assets would be allocated to different buckets corresponding to different percentages of CET1 deduction on the basis of their remaining useful life. Furthermore, the portion not deducted from CET1 items would be subject to a 100% risk weight.

25. As mentioned above, the rationale behind these approaches is to develop a prudential framework for software assets that takes into account their remaining useful life. In this regard, they have some similarities to Option 4, prudential amortisation, presented above. However, the latter differs from the approaches proposed by the industry at least with reference to the following aspects.

    (a) Calibration

    The approaches proposed by the industry are calibrated on the basis of the remaining useful life of software estimated for accounting purposes. However, in accounting, the estimation of the useful life of an asset shall reflect the time during which it is expected to be available to use and it is based on going concern considerations,[41] while the Level 1 text explicitly refers to the recoverable value of software even in a gone concern scenario.[42] In addition, relying on the accounting useful life could result in some potential unlevel playing field issues among EU institutions, given the differences in the accounting amortisation period of software observed among them. Indeed, based on the evidence collected, while software assets are amortised on

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[40] Note that the amounts excluded from CET1 deduction would be subject to a 100% risk weight.

[41] Note that financial statements/accounting figures are prepared on a going concern basis. In other words, the accounting values disclosed by entities that are not under liquidation or any other insolvency procedure are prepared on the basic assumption that the entity will continue its activities in the future.

[42] In particular, Art. 36(1)(b) of the CRR explicitly refers to 'prudently valued software assets, the value of which is not negatively affected by resolution, insolvency or liquidation of the institution'.

average over 6 years, certain institutions amortise their software over a significantly longer time frame. By contrast, Option 4 addresses the abovementioned issues in the following ways.

- It calibrates the maximum prudential amortisation period on the basis of the time needed on average to complete the migration process, according to the evidence collected from the analysis of cases of acquisitions of distressed banks. In this regard, this option is be better aligned with the provisions of the Level 1 text and reflects the fact that, in a gone concern situation, the recoverable value of software is expected to be negatively affected at least over time up to the end of the migration period.

- It introduces a prudential amortisation schedule applicable to all institutions, regardless of the differences in the accounting amortisation of their software assets.

(b) Incentives for EU institutions

Both the approaches proposed by the industry would result in a 100% risk weight for a portion of institutions' software assets until the end of their respective useful lives, as estimated for accounting amortisation purposes. This could still provide institutions with some incentives to revise their estimations of the useful life of software, in order to further benefit from the new prudential treatment. By contrast, in the case of the prudential amortisation option, that risk is mitigated by the application of a single amortisation schedule, established for prudential purposes.

(c) Amortisation of internally generated software

As mentioned above, the approaches proposed by the industry rely on the estimation of the useful life of software and the related amortisation period used for accounting purposes. However, in accounting, the amortisation process begins when the related asset is available for use,[43] meaning that, in the case of certain internally generated software, it could start even after the date of initial capitalisation. In this regard, it can be argued that the prudential amortisation option could provide institutions with more incentives to accelerate, to the extent possible, the finalisation and the entry into amortisation of their projects to develop internally generated software.

Preferred option

26. The EBA considers that the best option is Option 4 (prudential amortisation). In particular, the EBA is of the view that a prudential framework based on the amortisation of software would appropriately reflect the pattern of the recoverable value of software in a gone concern scenario, in line with the requirements of the Level 1 text. In addition, the EBA considers that calibrating the prudential amortisation period on a 3-year horizon would have the merit of both

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[43] Meaning that it must be in the condition necessary to be capable of operating in the manner intended by management.

reflecting the evidence collected from the assessment of concrete cases of software transactions and ensuring the application of an appropriate margin of prudence in the revised prudential treatment of software.

4.2   Feedback on the public consultation

The EBA publicly consulted on the draft technical standards.

The consultation period lasted for 1 month and ended on 9 July 2020. Twenty-six responses were received, of which eighteen were published on the EBA website.

This paper presents a summary of the key points and other comments arising from the consultation and the analysis and discussion triggered by these comments and the actions taken to address them if deemed necessary.

In many cases, several industry bodies made similar comments, or the same body repeated its comments in its response to different questions. In such cases, the comments and the EBA's analysis are included in the section of this paper where the EBA considers them most appropriate.

Changes to the draft RTS have been incorporated as a result of the responses received during the public consultation.

Summary of key issues and the EBA's response

Calibration of the prudential amortisation period

Many respondents welcomed the EBA's proposal for a treatment of software assets based on prudential amortisation, highlighting that, in their view, it is clear, simple and effective, does not leave room for discretional judgement, and can be effectively and simply operationalised.

However, almost all the respondents argued that a 2-year prudential amortisation period would be too conservative, with some of them pointing out, inter alia, that:

- in some cases, the migration period was longer than 3 years, due to either technical matters or legal data consultancy purposes, while, in other cases, the purchased software was not replaced after the acquisition, especially when the acquirer was not a credit entity;

- a short calibration of the prudential amortisation period would discourage investments in software with a longer useful life that could contribute to improving the competitiveness and resilience of the EU banking sector. In addition, a 2-year calibration would be too penalising for all institutions which were forerunners and invested in their software at an earlier stage.

However, mixed views were expressed with reference to the appropriate calibration of the prudential amortisation, with proposals ranging from keeping the current proposal or moving to a 3-year to a 6-year prudential amortisation.

In order to reflect the comments received from the industry, the draft technical standards have been revised, extending the length of the prudential amortisation period to 3 years.

Starting date of prudential amortisation

As part of the consultation paper, the EBA asked for views from stakeholders on the following two options for determining the starting date of the prudential amortisation process.

- Option A: under this approach, the prudential amortisation of each software asset would start from the date of its initial capitalisation, regardless of the date from which it would begin to be amortised for accounting purposes.

- Option B: under this approach, the prudential amortisation of each software asset would start from the date when it was available to use, in line with the accounting framework. However, all the costs capitalised until the beginning of the prudential amortisation process would be fully deducted from CET1 capital.

A large majority of respondents expressed support for the application of Option B. Nevertheless, several of those respondents asked that the EBA consider removing the requirement to fully deduct from CET1 capital the capitalised costs related to software under development. That said, almost none of the respondents provided clear insights into the differences on the quantitative impact on CET1 capital between the two proposed options for determining the starting date of prudential amortisation.

Changes to the draft technical standards have been incorporated as a result of the responses received during the public consultation. In particular, in line with the approach envisaged in the consultation paper under Option B, the final draft RTS provide that prudential amortisation is to be calculated starting from the date on which the software asset is available for use and begins to be amortised for accounting purposes. However, the treatment proposed in the consultation paper with reference to the capitalised costs related to software under development has been retained. Therefore, such costs shall be fully deducted from CET1 capital until the beginning of the prudential amortisation process. There was indeed a preference expressed by the industry for this option, with some respondents highlighting that they see it as easier to implement and as ensuring a better alignment between prudential and accounting amortisation. In this context, it is worth noting that, while Option B would be more conservative as regards the treatment of software under development, at the date of first application of the new regulatory treatment, this approach is likely to result in a greater prudential benefit for those software assets that have already entered into amortisation than Option A would provide. Indeed, under Option B, the maximum prudential amortisation period would be calculated starting from the date on which the software asset begins

to be amortised for accounting purposes, instead of from the date of capitalisation, and in some cases the accounting amortisation process could start a long time after the date of initial capitalisation.

Date of entry into force of the draft RTS

Several respondents asked the EBA to consider bringing forward the date of entry into force of these draft RTS, originally envisaged in the consultation paper to be the twentieth day following that of its publication in the *Official Journal of the European Union*.

In order to further support the transition towards a more digitalised banking sector, the date of entry into force of these draft RTS has been anticipated to the day following that of its publication in the Official Journal.

Summary of responses to the consultation and the EBA analysis

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
General comments			
Importance of investments in software assets	Several respondents highlighted the importance of investments in software assets as strategic assets that are crucial to banks' competitiveness and resilience, justifying the need for a particular and more beneficial treatment. In this regard, a few respondents pointed out that software is an asset for the bank and contributes to its economic results, and that it should therefore be considered in relation to a baseline going concern scenario and not only in relation to a gone concern one.	The EBA is aware of the relevance of software assets for the banking sector, and in developing the regulatory treatment established in these RTS, this aspect was taken duly into consideration.	None.
Unlevel playing field	Many respondents felt that European banks will still continue to be at a disadvantage compared with institutions in other jurisdictions (e.g. the US and Switzerland) and non-financial players. They argued that the suggested approach of prudential amortisation does not go far enough.

Of those, two respondents asked to forward this discussion also to the Basel Committee. One of those respondents argued that also IFRS are not explicit on the classification of software as tangible or intangible assets, providing examples of some IFRS banks in Singapore and Switzerland that present software separately from intangible assets and consequently do not deduct it from regulatory capital. In this | The EBA is aware that some differences have been observed at international level with reference to the prudential treatment of software and that, in some cases, these differences depend on the fact that software assets are not classified within intangible assets for accounting purposes, including under IFRS, and, therefore, they are not deducted from CET1 items. However, it is outside the scope of the mandate for these RTS to provide any guidance or clarification on the appropriateness of the accounting treatment of software assets applied by some banks, under the control of their auditors. | None. |

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
	regard, this respondent asked the EBA to clarify whether the IFRS standards explicitly require software to be reported as a subset of intangible assets.		
Finalisation in a timely manner of the RTS	Many respondents stressed the importance of the swift finalisation and application of the RTS (preferably until September/December 2020), in order to enable the regulatory changes to come into force as soon as practicable.	The EBA has taken note of the request from the industry for the swift application of the revised prudential treatment of software and has made its utmost efforts to accelerate the finalisation of these RTS. In addition, in the context of the current circumstances around the COVID-19 crisis, the date of entry into force of these RTS has been moved to the day following that of its publication in the Official Journal *of the European Union*.	Amendment to Article 2 of the RTS, in order to bring forward the date of entry into force.
Implementation of the envisaged approach	Two respondents pointed out that the RTS would be relatively easy to implement, while several others stated that the prudential amortisation approach would be too complex.	In the EBA's view, the proposed approach has been designed to be simple to implement and applicable to all institutions in a standardised manner.	None.

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
Responses to questions in Consultation Paper EBA/CP/2020/11			
Question 1. In case some software assets are classified within tangible assets in your institution, what are the main reasons for doing so and what is the percentage of this classification compared with the classification as intangible?	Many respondents highlighted that the overwhelming majority of their software assets are classified as intangible assets. They argued that only a minority of software assets are classified within tangible assets, in compliance with IAS 16 in conjunction with IAS 38.4, as this applies only to software assets that are an integral part of hardware. Some respondents highlighted that the percentage of their software assets classified within tangible assets is strictly zero or very limited (less than 5% or 10%). Eight respondents indicated that they have no cases of software classified within tangible assets. Four respondents pointed out that the low amount of software assets that banks are allowed to classify as tangible assets is linked to the level playing field issues between the EU and other jurisdictions. Two respondents asked the EBA to clarify if licences and patents fall within the scope of the proposed prudential treatment of software.	As mentioned in recital 27 of CRR2, 'software is a broad concept that covers many different types of assets'. That said, in the EBA's view, the regulatory treatment proposed in these RTS would apply also to those software patents and software licences that are intangible assets as defined in Article 4(1), point (115), of the CRR. Not many respondents provided a concrete quantification of the classification of some software as tangible assets. It should be noted that the EBA has suggested in a revised version of the ITS on supervisory reporting that the FINREP templates be amended in order to collect information on the amount of software assets classified within 'Property, plant and equipment'.	None needed.
Question 2. Do you have any comment on the proposed approach for the prudential treatment of software assets?	Many respondents welcomed the EBA's proposal for a prudential treatment of software assets, while some of them pointed out that the approach would not result in a real level playing field for EU banks in an international context. Several respondents stressed that in their view the EBA's proposal is clear, simple and effective, does not leave room for	The EBA welcomes the comments acknowledging the fact that the proposal is clear and effective and should be easy to implement. The EBA also reiterates its view that the proposed approach based on the amortisation of software assets for prudential purposes is deemed to strike an appropriate balance between the following two objectives:	None.

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
	discretional judgement, and can be effectively and simply operationalised. One respondent highlighted that the approach followed by the EBA seemed to entail a high level of conservatism and that it seemed to take into account the value of software in a gone concern scenario only, without considering any business component in a going concern scenario. Another respondent argued that software deduction rules can be criticised for incentivising regulatory arbitrage by the use of, for example, outsourcing, thus disfavouring institutions that internalise their IT development to create, for example, custom-made IT solutions or to develop software used by the company that is resaleable.	- on the one hand, the need to maintain a certain margin of conservatism/prudence in the treatment of software for prudential purposes, especially given its limited value in a gone concern scenario; - on the other hand, the acknowledgement of the relevance of software assets from a business and an economic perspective, in the context of an increasingly digital environment.	
	Five respondents pointed out that the amortisation rules applied for accounting purposes (either under IFRS or local GAAP) should be followed also with regard to prudential amortisation in order to avoid complexity and also to affirm trust in the reliability of the work of external auditors who audit on an (at least) annual basis the applied amortisation rules according to either IFRS and/or local GAAP. In particular, of these respondents, one argued that if regulators want to include a certain margin of conservatism or prudence in the valuation of software assets, implementing haircuts on top of accounting amortisation would be the most efficient means of implementation.	The EBA believes that a prudential treatment of software based on accounting amortisation would not be appropriate, given the degree of judgement involved in the estimation of the useful life of software for accounting purposes and the significant differences observed in the length of the accounting amortisation period among European institutions. Moreover, a prudential framework based on accounting amortisation would not appropriately address concerns related to the likely limited value of software in a gone concern scenario.	None.

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
	One respondent pointed out that the amortisation period should be adapted to the nature of investment, at least distinguishing core infrastructure investments from other intangible assets and applying a longer prudential amortisation period to them. Another respondent proposed that the EBA consider the adoption of a hybrid approach that combines Option 4 (prudential amortisation) with Option 2 (CET1 deduction by software category), since, in its opinion, this proposal would be better aligned with the ambition of promoting software investment as banking reshapes to adapt to the digital age. Such a hybrid system could operate as follows. 1. Banks would be allowed to demonstrate to the satisfaction of their competent authority which components of their capitalised software would have value in a gone concern scenario. Any software with gone concern value would be risk-weighted at 100% of its accounting value. 2. For all other capitalised software, prudential amortisation would then be applied. Another respondent argued that the approach should differentiate to a greater extent between software assets that cannot be sold separately or for which no reliable price can be determined and those that can be sold separately and for which a reliable market price can be determined or is available, allowing a longer prudential amortisation period for the latter. Moreover, this respondent proposed also	The EBA notes that the alternative approaches proposed would involve, at least to a certain extent, a categorisation of software assets. In this regard, the EBA reiterates its view that any approach based on the categorisation of software would involve, by definition, a certain degree of judgement and, therefore, might prove difficult for supervisors to challenge, introducing potential for regulatory arbitrage. Moreover, based on the evidence collected from the assessment of concrete cases of past software transactions, all software assets, regardless of specific category, seem to have a similar probability of being written off or recovered. As regards the proposal to distinguish between those software assets that can be sold separately and those that cannot, as in the regulatory treatment provided for in the Solvency II Directive, it is worth pointing out that, generally, software is not expected to be sold separately and, in the majority of the cases, an active market is unlikely to exist for certain types of software, given their tailor-made features.	None.

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
	that the EBA consider limiting the amount to be prudentially amortised to a fixed percentage of the determined value, as is the case for software assets under the Solvency II Directive.		
	One respondent recommended simplifying the proposed approach by setting a deduction weight or factor in a manner similar to risk weights or the SME supporting factor.	The EBA is of the view that this approach would not adequately address the differences observed in the length of the accounting amortisation period among European institutions. Therefore, it would result in a different outcome depending on the practices and approaches used by European institutions to estimate the useful life of software, while, in the EBA's view the revised prudential treatment of software shall apply to all institutions in a standardised manner, as is the case today with the deduction treatment established in the CRR.	None.
	Two respondents pointed out that, in accordance with the principle of proportionality, it should be possible for small and medium-sized institutions not to deduct software assets. Moreover, in the light of simplification, the same respondents proposed allowing small and medium-sized institutions to use the write-up amount as a basis for determining the amount of amortisation. The write-up amount would be amortised over the prudential useful life. This would eliminate the need for small and medium-sized institutions to identify each piece of software, which would provide considerable relief with regard to operational requirements.	The EBA reiterates its view that the revised prudential treatment of software shall apply to all institutions in a standardised manner, as is the case today with the deduction treatment established in the CRR, this regardless of the size of the institution in question. That said, as explained in more detail below, where the revised prudential treatment of software is considered too burdensome and institutions would prefer to continue to fully deduct their software assets from CET1 items, they would not be prevented from doing this, in accordance with Article 3 of the CRR.	None.

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
	One respondent argued that the draft RTS does not allow for prudential amortisation of software assets already in use and should explicitly allow for a temporary consideration of software assets in use but not yet fully amortised.	In principle, those software assets that are not yet amortised for accounting purposes would already fall within the scope of application of the prudential treatment proposed in these RTS. However, given the presence of a maximum prudential amortisation period, not all these software assets would benefit from prudential relief as a result of the application of the revised treatment.	None.
	Seven respondents asked that for all institutions that, based on their own cost–benefit considerations, want to waive the implementation of the regulatory amortisation method the total software deduction from CET1 remain an option.	Article 3 of the CRR states that institutions are not prevented from 'applying measures that are stricter than those required by this Regulation'. Therefore, those institutions that would prefer to continue to fully deduct their software assets from CET1 items would not be prevented from following this approach, in accordance with Article 3 of the CRR. In this regard, recital 5 of these RTS has been amended to further clarify that the standardised prudential treatment should not prevent an institution from continuing to fully deduct its software assets from CET1 items	Amendment to recital 5 to clarify that institutions are not prevented from continuing to fully deduct software assets from CET1 items.
Question 3. What is your view on the calibration of the prudential amortisation period?	As a general remark, all the respondents, except one, considered inadequate having a 2-year calibration of the prudential amortisation period and proposed a longer period: the majority proposed a calibration of at least 4 years (four of these respondents proposed 6 years as an ideal solution), three proposed 5 years and three proposed 3 years.	Following the feedback received from the industry, the calibration of the prudential amortisation has been extended to 3 years. It should be noted that using an amortisation period equal to the average accounting amortisation period would result in the effective absence of deduction of software from CET1 and would defeat the intention	Amendment to paragraph 2 of Article 13a of Delegated Regulation (EU) No 241/2014.

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
	As regards the comments provided on the rationale behind the 2-year amortisation period laid down in the RTS, the following concerns were raised. - Nine respondents considered that the calibration deviated too much from the evidence collected on the average useful life for accounting purposes. In particular, it was noted that a 2-year prudential amortisation was unduly prudent, considering that accounting principles already set out conservative rules (as is the case for the capitalisation of development costs), the application of which is subject to audit. - Nine respondents considered the cases used for the purposes of defining the migration period to be not representative enough. Those respondents reported evidence of (i) migration periods longer than 3 years, either because of technical matters or for legal data consultancy purposes and (ii) software not being replaced after the acquisition, especially when the acquirer is not a credit entity. - Some argued that the EBA sample was biased because of the inclusion of institutions perceived as 'weak institutions'. - Seven respondents reported that a short calibration would discourage investments in software with a longer useful life that could contribute to improving the competitiveness and resilience of the EU banking sector, and would thus contradict the objectives of the EBA in this	of the legislators and the purpose of the mandate attributed to the EBA. Finally, it is noted that it is the EBA's intention to continue monitoring the treatment of software assets and its impact on own funds/CET1 capital with reference to the final calibration via renewed detailed QIS exercises.	

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
	context. In addition, a 2-year calibration would penalise too heavily banks that were forerunners and invested in their software at an early stage.		
	- Seven respondents noted that the 2-year calibration did not take into account that in Europe bail-in is the dominant resolution strategy adopted. Therefore, a gone concern analysis should also consider that, in the event of bail-in (or the use of a bridge bank), software assets are expected to be kept in use after resolution, to ensure that the entity can continue operating.		
	- Six respondents also argued that the 2-year calibration was based only on a gone concern scenario perspective. Those respondents deemed it more appropriate to also account for the useful life of software in a going concern situation, as represented by the period used for accounting amortisation purposes. This view is based on the idea that a bank that meets all the capital and liquidity requirements is unlikely to enter into resolution from one day to the next.		
	- Two respondents highlighted that such a short prudential amortisation period did not provide an adequate answer to the question of an unlevel playing field with US banks.		
	- Another two respondents expressed concerns about the representativeness of the sample used. These concerns were based on two findings: (i) just around half of the institutions provided relevant information on the accounting		

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
	amortisation period and (ii) QIS instructions were not well understood and applied by institutions, leading to partial results. - One respondent highlighted that such a short calibration could result in a cliff-edge effect on CET1 levels if investments in software were not constant over the years, whereas a longer period would reduce volatility in CET1 levels over time. - One respondent recommended a review, following the adoption of the RTS, to consider the developing and applied treatments in other jurisdictions and to assess the effectiveness of the proposed 2-year calibration. As part of this review, 2 years of industry data could be analysed following the adoption of the RTS in order to overcome some of the limitations, highlighted by the EBA, of the data provided through the QIS exercises.		
Question 4. What is your view on the proposed alternative approaches illustrated above?	Four respondents expressed a preference for Option A, mainly pointing out that this option would encourage banks to invest in software and has to be privileged in the context of projects developed over a long period. Option A would also avoid penalising entities that invest significantly in software with a lower impact on CET1 deduction. In particular, one of these respondents recommended that the EBA explore the possibility of running Options A and B in parallel and leaving it to banks to choose the approach or, if not possible, to opt for Option A.	The EBA notes that a large majority of the respondents supported Option B. While the EBA acknowledges the comments that Option B would be more simple and less burdensome to implement, there is no direct link to be made with the calibration of the prudential amortisation period. In addition, it should also be considered that, while Option B would be more conservative as regards the treatment of software under development, at the date of first application of the new regulatory treatment, this approach is likely to result in a greater prudential benefit for those software assets that have already	In Article 13a of Delegated Regulation (EU) No 241/2014, paragraphs 3, 4 and 8 included in case Option A was applied have been removed.

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
	A large majority of the respondents expressed their preference for or at least highlighted the advantages of Option B, mainly for the reasons set out below. - Option B is considered easier from an implementation perspective, as the necessary information is already available (not the case for Option A). Option B would also result in quicker implementation of the new regime. - Option B would allow better alignment between prudential and accounting amortisation. Out those respondents, ten suggested implementing Option B without requiring a full deduction from CET1 capital of the capitalised costs related to software under development. Some respondents, while supporting Option B, pointed out that the selection of this option should further support the call for an extension of the prudential amortisation period, since it could be seen as the most conservative option. Seven respondents did not express a clear preference for Option A or Option B, mainly for the following reasons. - Three respondents highlighted that Option B could result in a high CET1 deduction at the beginning of the amortisation period. On the other hand, even though Option A seems to be more appropriate, the timing difference in the start of the amortisation period would increase	entered into amortisation. Indeed, under Option B, the maximum prudential amortisation period would be calculated starting from the date on which the software asset begins to be amortised for accounting purposes, instead of from the date of its capitalisation. Therefore, considering that in some cases the accounting amortisation process could start a long time after the date of initial capitalisation, the prudential benefit stemming from the first-time application of Option B to the stock of software assets already entered into amortisation is expected to be higher than it would be under Option A. Taking into account that Option B is expected to result in a lighter operational burden and that it would in any case provide institutions with appropriate incentives to accelerate the finalisation and entry into amortisation of their internal projects, the EBA has decided to retain this option. As regards the treatment of those capitalised costs related to software under development, the EBA believes that fully deducting these costs from CET1 items until the date when the related software is available for use is a more prudent approach. Moreover, it reflects the fact that in a scenario where the project could not be completed the capitalised development costs would be of no use and would not have any loss-absorbing capacity. In addition, as mentioned above, this approach would provide institutions with appropriate incentives to accelerate the finalisation and entry into amortisation of their internal projects.	

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
	complexity and require additional IT and system efforts from banks. - One respondent proposed including both options explicitly in the RTS. If the EBA would not consider integrating an option for institutions to choose the appropriate start date for prudential amortisation, the respondent would slightly prefer Option B. - Three respondents did not report in detail any strong preference for either of the two options.		
Question 5. If considered needed, please provide any complementary information regarding the costs and benefits from the application of these draft RTS.	The majority of respondents did not comment on this question and hence did not explicitly disagree with the EBA's analysis. There were a range of notes from the industry questioning whether the potential benefits for the CET1 ratio of the proposed approach would be as great as stated in the cost–benefit analysis developed by the EBA. Some respondents argued that EBA's estimation of the capital benefit for the CET1 ratio under Option 4 (prudential amortisation) was based on an assumption that overestimated the effect. They argued that the assumption that 'the investments in software are assumed to be capitalised in full as of 31 December of each year' was incorrect. Rather, they stated, investments by banks and across the financial sector are made throughout the year. Therefore, a more appropriate assumption (i.e. the activation of software is equally distributed over the	As stated in the consultation paper, owing to data limitations, some assumptions were necessary in carrying out the impact assessment of the different policy options. Among those was the assumption that the investments in software were capitalised in full on 31 December of each year. Moreover, given the lack of punctual data on the start date for accounting amortisation and on the amount of capitalised costs related to software under development, it was not possible to estimate the impact of the application of Option B for prudential amortisation. However, a dedicated question for the industry was included in the consultation paper (see Question 6 below), with the aim of collecting information on this policy option. The EBA is aware that any change in the assumptions used for the purpose of the impact assessment could result in a different outcome.	The impact assessment of Option 4 (prudential amortisation) was revised assuming a 3-year amortisation period, in line with the final calibration of the prudential amortisation period established in the RTS.

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
	year – e.g. one-twelfth per month end) would lead to a less positive assessment of the impact of the new legal framework, according to the respondents' estimations. One respondent pointed out that, in its opinion, no data query on the volume of assets under construction had been used in the cost–benefit analysis. Two respondents stressed that no data had been provided on the benefits of changing the calibration for prudential amortisation to 3 years (or longer). These respondents illustrated with an analysis applying prudential amortisation over the life of an asset that the calibration of 2 years provided the least capital benefit. One respondent stated that costs would be incurred in implementing the RTS once finalised, given that banks would need time to adapt their internal systems in order to perform the asset-by-asset calculation required. A respondent also emphasised that there would be an impact in terms of the implementation costs related to the accounting tools used within its group, considering all its different subsidiaries.	As mentioned above, it is the EBA's intention to continue monitoring the treatment of software assets and its impact on own funds/CET1 capital depending on the final calibration via renewed detailed QIS exercises. Consequently, more data will be available in future.	
Question 6. If considered material, please provide your own estimate on the difference in the impact of prudential amortisation	The vast majority of respondents did not provide any answer. Ten respondents provided only a qualitative answer, mainly for the following reasons:	The EBA has taken into consideration the qualitative information provided by the industry on the difference in the impact of the prudential amortisation treatment between Option A and Option B. Moreover, following the feedback received	In Article 13a of Delegated Regulation (EU) No 241/2014, paragraphs 3, 4 and

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
treatment between i) assuming the capitalisation date of software assets as the starting point for prudential amortisation (i.e. Option A illustrated in the CP) and ii) assuming the date of accounting amortisation as the starting point for prudential amortisation, but fully deducting from CET1 items the costs capitalised until this date (i.e. Option B in the CP).	- the impossibility of collecting and/or sharing data on the impact; - limited differences arising from the implementation of the two options and/or the variability of the impact arising from asset size. Three of these respondents estimated that there would be only an initial CET1 benefit from Option A, expressing a preference for Option B. Two respondents provided an answer containing an impact assessment. - One reported an estimated deduction from CET1 capital under the two different scenarios equal to EUR 2.057 million (–34 bps, at 31 December 2020). - The other reported an increase in the CET1 ratio of around 0.7% for Option A and of around 0.4% for Option B based on data available in June 2020.	with reference to Question 4 (see above), these RTS have been revised to retain Option B.	8 included in case Option A was applied have been removed.
Question 7. Please provide any other comments on the consultation paper.	A majority of the respondents stressed the importance of a finalisation and publication of the RTS in a timely manner (preferably within September/December 2020). In this context, several respondents suggested applying the RTS immediately after their publication in the Official Journal (and removing the 20-day period mentioned in Article 2 of the draft RTS). In addition, two respondents suggested, in the event of a delay in the finalisation of the RTS, applying them retrospectively from 30 September 2020.	The EBA notes the request from the industry for the swift application of the revised prudential treatment of software and has made its utmost efforts to accelerate the finalisation of these RTS. As regards the proposal for retrospective application of the RTS, in the EBA's view, this would not be feasible from a legal perspective. However, in the context of the current circumstances around the COVID-19 crisis, the date of entry into force of these RTS has been moved to the day	Amendment to Article 2 of the RTS, in order to bring forward the date of entry into force.

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
		following that of its publication in the *Official Journal of the European Union*.	
	A few respondents regarded the suggested prudential amortisation approach to be too complex and not simple to implement; they suggested implementing a haircut on top of accounting amortisation instead.	See above.	None.
	Whereas two respondents were of the opinion that the suggested prudential amortisation approach would be relatively easy to implement, several respondents felt that the exemption from CET1 deductions should be optional, as the cost of implementing the prudential amortisation approach could be disproportionate to the capital savings for institutions with few capitalised software assets.	See above.	None.
	One respondent asked for more clarity regarding the level at which the envisaged approach shall be followed. In particular, this respondent pointed out that the proposed Article 13a(2) deals with institutions, while in Article 13a(4) there is a distinct treatment for software assets acquired from an undertaking.	As mentioned in paragraph 2 of Article 13a, the approach proposed in these RTS applies to all institutions. In this regard, paragraph 4 of Article 13a introduces a specific provision aimed at clarifying the application of the proposed approach in case of software assets acquired by an institution from any other undertaking (including a non-financial sector entity) that is part of the same group of the institution itself, intended as any undertaking on which the institution has a direct or indirect control or that is included in any of the following:	None.

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
		a. the scope of accounting or prudential consolidation of the institution;	
		b. the scope of the consolidated balance sheet or extended aggregated calculation, where equivalent to consolidated accounts as referred to in Article 49(3)(a)(iv) of Regulation (EU) No 575/2013, that is drawn up by the institutional protection scheme or the network of institutions affiliated to a central body that are not organised as a group to which the institution belongs;	
		c. the scope of supplementary supervision of the institution in accordance with Directive 2002/87/EC of the European Parliament and of the Council on the supplementary supervision of credit institutions, insurance undertakings and investment firms in a financial conglomerate.	
	Several respondents asked for a more detailed explanation in the RTS concerning the following topics/questions: - the application of the proposed prudential treatment to all software assets that are classified as intangible assets for accounting purposes or the scope of the software assets covered; - the applicability of the RTS to software assets (still) in use but not yet fully amortised; - the application of the proposed prudential treatment in the event of	The proposed prudential treatment applies to those software assets that are intangible assets as defined in Article 4(1), point (115), of the CRR, this regardless of whether the software in question was capitalised before or after the date of entry into force of these RTS. However, given the presence of a maximum prudential amortisation period, not all these software assets would benefit from a prudential relief as a result of the application of the revised prudential treatment proposed in these RTS. As regards the revaluation model, the EBA notes that software is normally accounted for using the cost model. Indeed, according to IAS 38, 'Intangible	None.

Comments	Summary of responses received	EBA analysis	Amendments to the proposals
	revaluation/depreciation of software should the revaluation model apply for accounting purposes.	Assets', under the revaluation model the revaluated amount is to be based on the fair value of the intangible asset in question measured with reference to an active market. However, software assets, especially those developed internally, generally have customised features that make them so tailor-made and entity-specific that it is unlikely that an active market exists for these assets.	
		If needed, the EBA stands ready to provide, through the Q&A process, further technical clarifications for those cases where the revaluation model would be adopted for accounting purposes. That said, given the prudential concerns about the limited recoverable value of software in a gone concern scenario, in the EBA's view an appropriate margin of conservatism shall be maintained in the treatment of any positive revaluation of software assets, in order to prevent this resulting in undue prudential relief.	
	A few respondents proposed further reviewing the new rules in the future, taking into consideration the evolution of investments in software assets, to improve the framework. In this regard, one respondent suggested, in particular, including a review clause in the RTS.	As mentioned in the consultation paper, it is the EBA's intention to closely monitor the evolution of investments in software assets going forward, including the link between the proposed prudential treatment and the need for EU institutions to make some necessary investments in IT developments in areas like cyber risk or digitalisation in particular.	None.