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CRR II AND IFR: ARE CHANGES NOTICEABLE FOR ITALIAN BANKS AND INVESTMENT FIRMS? SOME EVIDENCE FROM SUPERVISORY REPORTING DATA

by Vincenzo Capone (coordinator)*, Simona Arcuti**, Danilo Ardini*,
Lorenzo Fagiolari*, Pamela Maggiori* and Fabio Zambuto*

Abstract

This paper analyses the impact on Italian banks and investment firms of some regulatory changes introduced by the CRR II and the IFR. The implementation of the new rules was reflected in a parallel massive overhaul of the Bank of Italy's supervisory reporting framework. This new data has been exploited in the paper, with regard to the period December 2019-June 2022, in order to assess, through a descriptive analysis, any major changes in reporting patterns due to the enforcement of the new rules. With reference to the banking sector, first we examine the partially revised credit risk measures (the 'supporting factors' for Small and Medium-sized Enterprises (SMEs) and for infrastructure projects) and the specific treatment of certain loans backed by pensions or salaries (in Italy 'Cessione del Quinto dello Stipendio' – CQS); second, we analyse the leverage ratio and the net stable funding ratio (NSFR). Regarding investment firms (IFs), we explore the impact of the new regulatory framework. Our empirical findings highlight a reduction in terms of capital requirements for both banks and IFs, although limited to specific services, and show that banks were largely compliant with the new NSFR and leverage requirements before the actual enforcement of the new prudential rules.

JEL Classification: G21, G23, G28.

Keywords: CRR II, IFR, credit risk, leverage ratio, net stable funding ratio, capital requirements, supervisory reporting.

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1 INTRODUCTION¹

Until June 2021, credit institutions² and investment firms (IFs) operating in the EU were subject to the harmonized prudential rules laid down in the Capital Requirement Regulation³ (CRR) and in the Capital Requirement Directive⁴ (CRD), which together set out a comprehensive prudential regulatory framework for the EU known as the “single rulebook”.

The framework was significantly revised in 2021 with the introduction of major changes for both credit institutions and IFs. The rules applicable to credit institutions were updated by an amending regulation (CRR II)⁵ with the intent of implementing in the EU some of the key changes envisaged in the latest version of the international standards of the Basel Committee on Banking Supervision (BCBS). The new measures included, among other things, a new leverage ratio requirement, aimed at reducing the risk of deleveraging and acting as a backstop to risk-based provisions on credit risk, as well as a new stable funding requirement, designed to reduce incentives for excessive maturity transformation. Furthermore, some special provisions were introduced in the area of credit⁶ to consider specific counterparties or services: specifically, loans backed by pensions or salaries, loans to small and medium-sized enterprises – SMEs (the “SME supporting factor”), and exposures to entities that operate or finance physical structures or facilities, systems and networks providing or supporting essential public services (the “infrastructure supporting factor”). There were even greater changes for IFs, which became subject to a dedicated prudential framework in the EU, i.e. the Investment Firms Directive (IFD)⁷ and the Investment Firms Regulation (IFR)⁸. Indeed, before the introduction of these provisions, almost all IFs shared the same rules as banks; the new regulatory package introduced capital requirements specifically tailored to their own risks, calibrated in a proportional manner and differentiated on the basis of the complexity of firms’ operations.⁹

The implementation of the new rules was also reflected in a parallel massive overhaul of the supervisory reporting framework, which sets out the information that institutions must periodically report to competent authorities. Reporting templates were significantly revised and extended in order to collect highly granular data and monitor the compliance of individual supervised entities with the new prudential requirements.

¹ The views expressed in this paper are solely those of the authors and do not necessarily reflect those of the Bank of Italy. We thank Francesca Monacelli, Marcello Bofondi and Alessio De Vincenzo for their insightful comments.

² Credit institutions are classified as follows:

1) Significant institutions (SIs) are supervised by the ECB under the Single Supervisory Mechanism (SSM) and meet one of the following conditions: a) the total value of the institution’s assets exceeds €30 billion; b) the total value of its assets exceeds €5 billion and the ratio of its total assets to the GDP of the SSM state in which it is established exceeds 20%; c) it is one of the three most significant credit institutions in an SSM state; d) the national competent authority considers it to be significant with regard to the domestic economy and the ECB agrees; e) the ECB considers that it has banking subsidiaries in more than one SSM state and significant cross-border assets or liabilities; f) public financial assistance has been requested or received in respect of it directly from the European Financial Stability Facility (EFSF) or the European Stability Mechanism (ESM);

2) Less significant institutions (LSIs) are small and medium-sized banks that are directly supervised by their national competent authorities (NCAs), under the oversight of the ECB.

³ Regulation (EU) No 575/2013.

⁴ Directive 2013/36/EU.

⁵ Regulation (EU) 2019/876.

⁶ Due to the severe economic shock caused by the COVID-19 pandemic, European authorities decided to bring forward the application of a subset of the new rules for credit institutions (‘CRR Quick Fix’) in an effort to stimulate lending by the banking sector and support the real economy.

⁷ Directive (EU) 2019/2034.

⁸ Regulation (EU) No 2019/2033.

⁹ Some IFs are large and interconnected and have a business model and risk profile similar to that of banks; these firms, labelled as Class 1, continue to be subject to the framework applicable to credit institutions.

The question addressed in this paper is whether, and to what extent, the above-mentioned measures have impacted the capital requirements for Italian banks and IFs.¹⁰ Indeed, although the rationale and potential benefits of the supervisory reforms were extensively documented by prior works,¹¹ these studies typically adopted a global perspective and did not rely on highly specialized datasets reflecting the specificities of EU legislation or national financial systems. In addition, while extensive analyses are available on the implications of prudential regimes for credit institutions, relatively less attention has been devoted to the implications of prudential rules for IFs. Our descriptive analysis complements these studies by exploiting the richness of the new information collected by the Bank of Italy in the context of the revised supervisory reporting framework. This new data has been investigated with regard to the period December 2019-June 2022 in order to identify potential changes in reporting patterns around the implementation date of the new requirements.

The remainder of the paper is organized as follows: Section 2 reviews the key innovations of the new prudential framework for banks and IFs; Section 3 describes the data used in the empirical exercise; Section 4 illustrates the results; Section 5 presents our conclusions.

2 AMENDMENTS TO THE SUPERVISORY REGULATION FRAMEWORK

2.1 Measures for banks

2.1.1 Credit risk

Several rules for determining the minimum capital requirements for credit risk have been changed by the CRR II with the common objective to foster the banking system's ability to support the real economy.

The scope of application of the existing supporting factor for exposures to small and medium-sized enterprises (hereafter SMEs) has been expanded (CRR II, art 501) and a new supporting factor has been introduced for exposures to entities that operate or finance physical structures or facilities, systems and networks that provide or support essential public services (CRR II, art 501a). Furthermore, a specific treatment for certain loans backed by pensions or salaries (in Italian “Cessione del Quinto dello Stipendio”; CQS) has been introduced (CRR II, art 123).

As far as Basel III is concerned, the changes in the final framework introduce a lower risk weight for corporate SMEs in the standardised approach to credit risk (hereinafter, STA) and a more granular framework for specialised lending, which could accommodate for project financing; however, no special rules for CQS are envisaged.

Regulation EU 2020/873 amending CRR II (so called CRR “Quick Fix” Regulation), was published in the Official Journal of the EU on 26 June 2020. The Quick Fix brought forward the application date of the three above-mentioned provisions (i.e. the two supporting factors and special treatment for pension and salary-backed loans) to the date of entry into force of the amending Regulation. The supporting factors were anticipated to allow banks to avoid a tightening of credit supply to SMEs and infrastructure investments during the pandemic. Likewise, banks could benefit from the specific treatment for backed loans earlier than originally established in order to bolster their capacity to distribute personal loans.

Overall, these measures should have implied a change in the prudential capital requirements for the exposures being discussed. The question addressed in the research is whether and to what extent the three measures impacted the capital requirements for Italian banks.

¹⁰ The analysis does not focus on the impact of the policy measures adopted by the authorities during the COVID-19 pandemic (such as public guarantees, debt moratoria, the ECB's expansionary monetary policy).

¹¹ “Report on SMEs and SME Supporting Factor” - European Banking Authority, 2016.

2.1.2 Leverage Ratio

The leverage ratio (LR) is a metric defined as the ratio between the bank's supervisory Tier 1 capital (numerator) and its total exposure (denominator). A low leverage ratio indicates that a bank has a high level of debt in relation to its Tier 1 capital.

The CRR II introduced a minimum LR level of 3% as a binding Pillar I requirement for all the institutions¹². The new requirement acts as a backstop measure to tackle risks that may not be fully captured by risk-adjusted prudential provisions and that may lead to a costly deleveraging by banks. Furthermore, the CRR2 has defined a series of exposures that can be excluded from the total exposure measure calculation due to their limited riskiness. These exemptions include certain exposures to the central banks, which can be endorsed only if the institution's competent authority has determined and publicly declared that exceptional circumstances exist¹³.

Both the ECB and the Bank of Italy declared that the situation brought about by the COVID-19 pandemic represented 'exceptional circumstances'. In parallel, the entry into force of the CRR Quick Fix in June 2020 anticipated the possibility to exclude central banks exposures from the LR calculation. Such possibility was later reiterated by the CRR2 from June 2021. As result of the combination of the regulatory framework and the existence of the 'exceptional circumstances', the entities were allowed to apply the LR relief from September 2020 to March 2022.

Banks that decide to exclude exposures to central banks must recalibrate the 3% leverage ratio requirement according to the mechanism set out in the CRR2¹⁴, which increases the LR requirement in a proportionate manner. The recalibrated LR, named adjusted Leverage Ratio, ensures that only the exposures to central banks newly accumulated since the beginning of the pandemic effectively benefit from the leverage ratio relief. It is defined as:

$$aLR = 3\% \cdot \frac{EM_{LR}}{EM_{LR} - CB}$$

Where:

EM_{LR} = total exposure measures including the exempted exposures towards the central banks, calculated at the date of declaration of existence of the exceptional circumstances

CB = the daily average total value of the institution's exposures to central banks, calculated over the full reserve maintenance period at the central banks immediately preceding the date of declaration of existence of the exceptional circumstances.

2.1.3 Net Stable Funding Ratio

The Net Stable Funding Ratio (NSFR) is a measure introduced by the BCBS to strengthen banks' liquidity profiles in response to the weaknesses observed during the financial crisis¹⁵ (Bank of International Settlements 2014, Bank of International Settlements 2013). The requirement is explicitly designed to reduce incentives to increase the mismatch between the duration of assets and liabilities that was one of the drivers of the instability experienced by the banking system during the great financial crisis. The ultimate goal of the standard is to mitigate funding risk over the medium term (i.e. over a one-year horizon) by stimulating banks to adopt funding structures more consistent with their assets portfolio composition.

At a technical level, the NSFR measures the extent to which bank's longer-term assets are financed by stable funding sources. The ratio is computed by dividing the amount of available stable funding (ASF) by that of required stable funding (RSF). The ASF is obtained by multiplying the liabilities of a bank by weights depending on the tenor of funding or the behavioural stability of the funding source. The RSF is computed by applying weights to assets and off-balance sheet exposures that reflect either the extent to which these can be

¹² CRR Art. 92(1)(d)

¹³ CRR Art. 429a(5)

¹⁴ CRR Art. 429a(7)

¹⁵ The other one is the LCR.

sold/leveraged as collateral to obtain new liquidity or the importance of their continuity for banking activities. In order to fulfil the requirement banks must have a ratio greater than 100%.

The last version of the standard was released by BCBS in 2014 and was adopted by the EU in 2019 with only slight modifications to the weights applied reflecting specificities of the European banking system (European Banking Authority 2015). Finally, the requirement became mandatory for EU banks with entry into force of CRR2.

2.2 Main innovations for investment firms

In December 2019 the European Commission approved the IFD and the IFR which introduced a new regulatory framework for IFs and IFs group, applicable from June 2021. Before, they were subject to the same framework as banks (CRR/CRD).

The new framework simplifies the regulatory and reporting obligations and better addresses the specific risks that IFs pose to the market, to the customers and to IFs themselves, considering that they generally tend to be less risky than banks¹⁶. The prudential provisions are calibrated based on the size and complexity of the activities performed. Specifically, the IFR divides IFs into 3 classes:

- Class 1 - IFs that have a business model similar to the banks and whose total value of consolidated assets exceeds 15 billion; these firms are excluded from the regulatory innovation and continue to be subject to the previous framework CRR/CRD, as banks¹⁷;
- Class 2 - IFs authorized to hold money and financial instruments from clients and triggering one of the thresholds set out by IFR¹⁸; these firms are subject to market and counterparty risk and thus to the full regulatory framework set out in IFD/IFR;
- Class 3 - IFs not included in the above two categories (i.e they are “small and non-interconnected”) considered as less risky and thus subject to a simplified version of the prudential framework.

IFR also simplifies the calculation of own funds requirements by dropping out the formula based on risk weighted assets previously applied under the CRR and by requiring IFs to hold a minimum level of own funds greater than the maximum among the following three reference values: (1) minimum capital (depending on the activity); (2) 25% of annual fixed overhead; (3) capital level calculated according to the k-factor formula¹⁹. Class 3 IFs are required to hold the maximum of the first two values. On the other hand, the new regulation does not substantially modify the eligibility criteria for instruments that make up own funds sticking to the same categorization in Tier 1 (composed by Common Equity Tier 1 and Additional Tier 1) and Tier 2 envisaged under the CRR.

¹⁶ IFs do not have large portfolios of retail and corporate loans and do not take deposits and the likelihood that their failure can have detrimental impacts on overall financial stability is lower than in the case of credit institutions.

¹⁷ IFs with total assets exceeding 30 billion are asked to upgrade their authorization, as they cannot act as “investment firm” anymore, but they have to “become” credit institutions according to CRD.

¹⁸ Asset under management less than 1,2 billion, clients order handled less than 100 million, money and financial instrument from client held, 100 million of total balance sheet, annual gross revenue 30 million.

¹⁹ K-factors are quantitative parameters that reflect the three main risk categories that IFs face: Risk to client (the factor are based on money and financial instruments held, orders handled, asset under management), Risk to market (market position, or in alternative a formula based on clearing house margin), Risk to firm (factor based on transactions recorded in the trading book of IFs dealing on own account, default risk for counterparty and risk for large exposure). Only Class 2 firms are required to calculate these requirements.

3 THE DATA

In order to analyse the impact of CRR II on Italian banks, we exploit supervisory reporting data collected by the Bank of Italy in the context of the Single Supervisory Mechanism (SSM). This data collection includes analytical supervisory information on prudential requirements that banks must periodically report to national competent authorities. The reporting framework follows harmonized templates and definitions which closely reflect the related prudential provisions: until March 2021 the data collection was based on the existing version of the CRR and the corresponding reporting templates set out in the EU Implementing Regulation 680/2014; in June 2021 the whole framework was revised and replaced by the one contained in EU Implementing Regulation 2021/451 to account for the amendments introduced with the new prudential regulation.

For the purpose of our analysis, we consider the data reported by Italian banks at the highest level of consolidation, that is, consolidated data for banks belonging to banking groups and individual data for stand-alone banks and foreign branches²⁰. The information refers to the areas of credit risk, leverage ratio and net stable funding ratio reported by banks for the period from December 2019 to June 2022. Overall, the final dataset comprises a total of 1,722 bank-year observations corresponding to 166 distinct banks.

As for the banks, also the analysis on the impact of IFR regulation exploits supervisory data periodically reported to the Bank of Italy by Italian IFs according to harmonized templates set out in the prudential regulation. Specifically, until March 2021 the data collection was based on the same reporting templates of banks set out in the EU Implementing Regulation 680/2014²¹; from June 2021 onwards, the reporting was performed according to the templates reflecting the provisions of IFR specified under the EU Implementing Regulation 2284/2021. For the purpose of our analyses, the information on own funds and own funds requirements was extracted for 65 IFs at the highest level of consolidation²². In order to account for different reporting frequencies across the reporting population and ease comparisons only end-year data were considered for the period from December 2019 to December 2021, for a total of 170 observations at the firm level each year.

4 EMPIRICAL EVIDENCE

4.1 Impacts of regulatory innovations on Italian banks

4.1.1 Credit risk

SME supporting factor

With a view to avoiding a tightening of credit supply to SMEs and thereby supporting investment, the CRR II extended the favourable treatment for SME exposures, i.e. the supporting factor (SF) applied to SME exposures (hereinafter, “SME SF exposures”). The size limit on SME loans that benefit from a capital charge reduction of 23.81% by applying the SME supporting factor was increased up to 2.5 million euro; the share of exposures exceeding that threshold benefits from a 15% reduction.

²⁰ Following a proportionality principle in the reporting framework, some areas of reporting may not be requested or waived for specific type of reporters. For example, NSFR reporting is not requested for branches of banks residing in other SSM countries or for banks belonging to groups which are waived from liquidity requirements on an individual basis.

²¹ For 11 IFs waived for application of CRR in 2019 and 2020, permanent capital requirement and own funds data coming from other source (national statistic reporting) are considered.

²² Some IFs have been excluded from observation, as they do not fall under the new framework in 2021.

To investigate the effect of this regulatory change, data are shown both at the end of 2019, that is before the entry into force of the Quick Fix²³, and after the Quick Fix (June 2020).

Firstly, to gain a comprehensive understanding of the phenomenon, some data on the original exposures²⁴ are presented. Regarding the breakdown by significance (i.e., whether an entity is SI or LSI), it must be preliminarily said that significant entities account for over 80% of the exposures towards SME benefiting from SF throughout the analysed period. The top chart in **Figure 1** illustrates that the total amount of exposures towards SMEs benefiting from SF²⁵ expanded by over 50%²⁶ in terms of original exposures between the first and second quarter of 2020. Notably, this rise is particularly remarkable for significant banks. For comparison, the same figure also depicts the trend in the overall amount of original exposures across the corporate, retail, and property²⁷ portfolios considered together. Breaking down the data by portfolio (as shown in the bottom charts and Table A1 in the Appendix), the most striking feature emerges in the corporate portfolio. Indeed, while the overall amount of corporate exposures remained relatively stable, the exposures towards SMEs benefiting from SF experienced significant expansion. After the cliff effect recorded in June 2020, the SME SF exposures within the corporate class have remained roughly stable. Importantly, these findings hold for both significant and less significant banks.

As mentioned in the preceding paragraph, a prominent aspect of analysing SME SF exposures, broken down by class, pertains to the cliff effect observed in the corporate class in terms of original exposures. Since original exposures do not account for the impact of credit risk mitigation (CRM), this amount represents loans provided by banks to SMEs regardless of any guarantees received on these exposures. Consequently, loans to SMEs guaranteed by the government in response to the COVID crisis are included in the original exposures. The modest increase in the overall amount of exposures classified as corporate, coupled with the sharp rise in SME SF exposures within the same class, suggests that the latter may be attributed to pre-existing exposures already in place on the previous reference date but unable to benefit from the favourable treatment at that time. In other words, considering that the extended SF applies to the existing stock of credit, not just new loans, the overall increase in SME SF exposures could be due to the removal of the 1.5 million limit for eligible exposures²⁸. Comparatively, the slight increase in SME SF exposures within the retail exposure class in terms of original exposures between 2019 and 2020 is not comparable to the one reported in the corporate class. While the lack of a material effect on retail might *prima facie* suggest that preferential treatment did not positively impact retail, it is essential to note that the limit of 1 million as the maximum exposure to an SME for classification as retail could play a role²⁹. In practice, these retail exposures were inherently limited below the threshold set for further reduction.

²³ The amendments to regulatory requirements were already applicable at the reporting reference of June 2020: see EBA/GL/2020/11 “Final Report on the Guidelines on Supervisory Reporting and Disclosure Requirements in Compliance with the CRR ‘Quick Fix’ in Response to the COVID-19 Pandemic”, 11 August 2020 where some conventions were adopted to fit the regulatory changes in the then current reporting framework.

²⁴ Exposures without taking into account conversion factors, credit risk mitigation techniques and value adjustments and provisions.

²⁵ Off-balance sheet exposures and claims or contingent claims secured on residential property collateral must not be considered when assessing the amount owed and eligible to the SF; however, the supporting factor applies to the entire bank’s exposure. Exposures in default shall be included for the purpose of determining the eligibility, but excluded from the application of the SF. Article 123 of CRR does not refer to exposure values but requires calculating the “total amount owed”. Hence, only amounts that an obligor owes are taken into account. I.e. in the case of a credit line only the drawn amount needs to be considered when checking if the 1-million-euro limit is complied with. See EBA Q&A 2014_707.

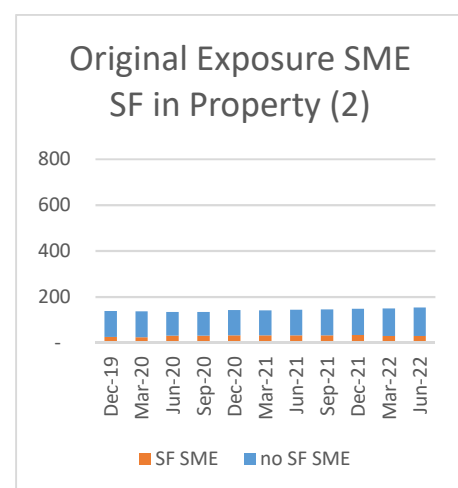
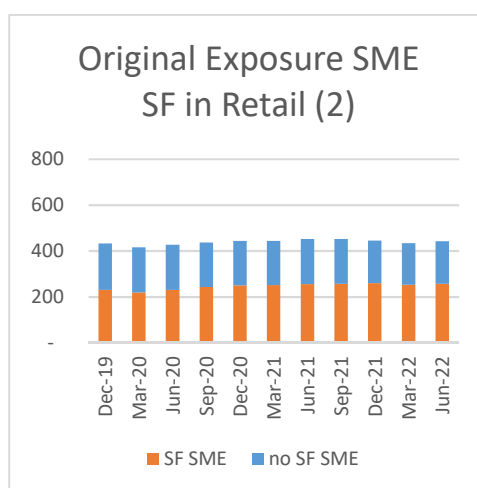
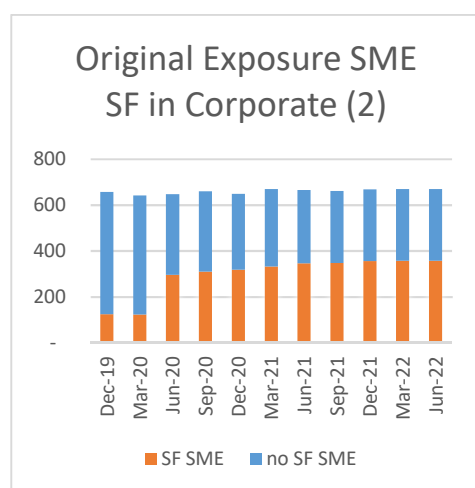
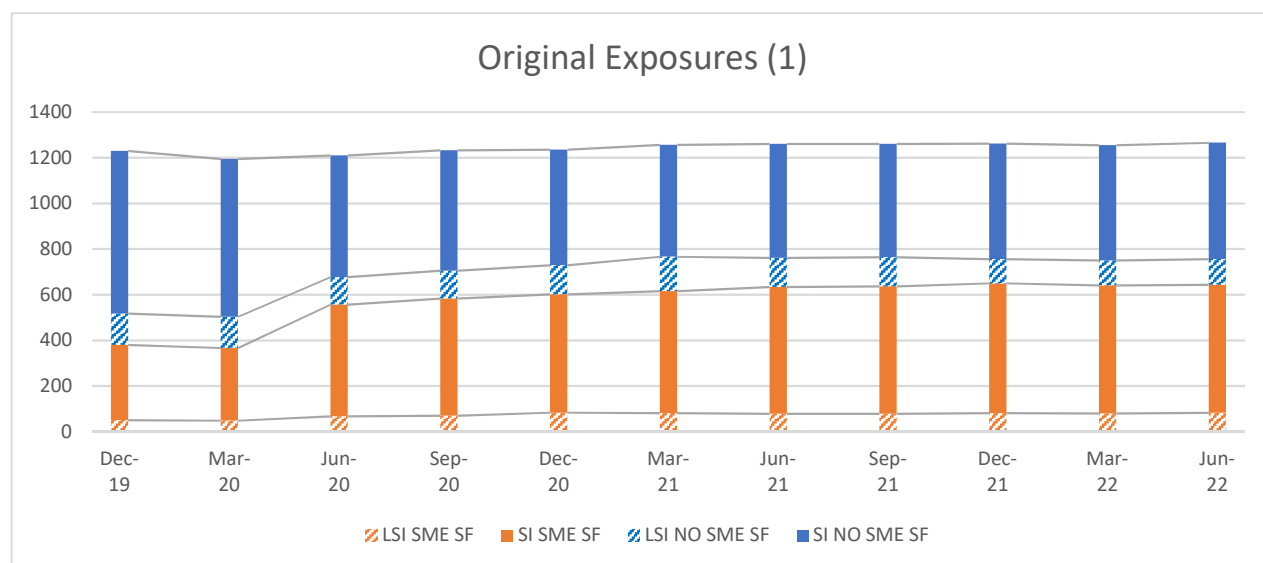
²⁶ This percentage is calculated as a rate of change.

²⁷ Exposures secured by mortgages on immovable property.

²⁸ See EBA Q&A 2013/414 (“if, or as soon as the total amount defined in Article 501(2)(c) exceeds, for a given client or group of connected clients, EUR 1.5 million to the knowledge of the institution, the institution should stop using the factor of 0.7619”).

²⁹ The limit in the standardised approach to credit risk (STA) for all exposures in the retail is set in art 123(c) CRR II; the limit in the internal rating based approaches to credit risk (IRBA) for SME within retail portfolio is set in art 147 para. 5 a) ii) CRR II.

Figure 1. Share of SME SF exposures: overall amount, breakdown by significant (SI) and less significant (LSI) banks, breakdown by class (original exposure)
(EUR billion)



Source: Supervisory reporting data (EU Implementing Regulation 2021/451).

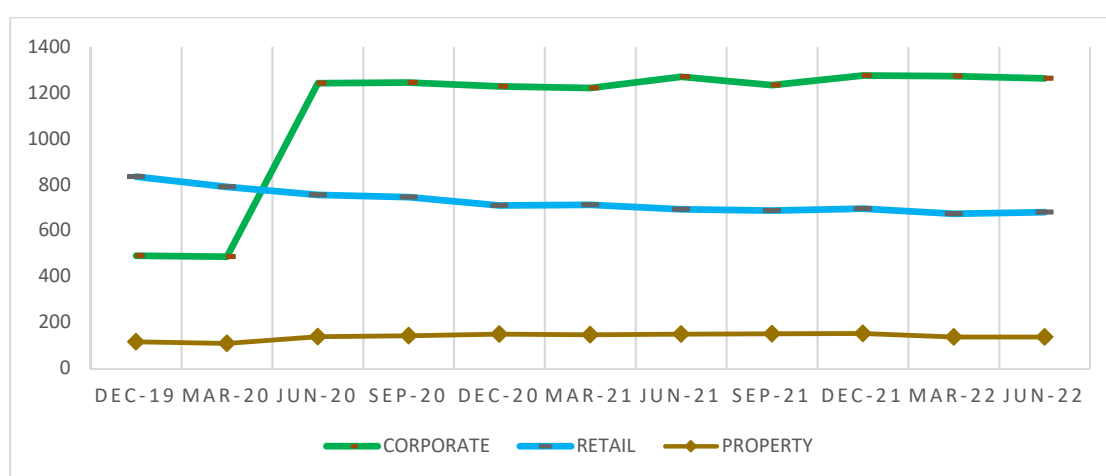
(1) The amount of exposures towards SMEs that benefit from SF is compared to the total exposure across corporate, retail, and property portfolios. The amounts are in terms of original exposure. The top chart displays the total amount of the three portfolios (corporate, retail, and property) as the total height of the bar on each reporting date. The amount of exposures towards SME benefiting from SF (SME SF), broken down by SI and LSI, is highlighted in orange, either solid for SI or striped for LSI. (2) The bottom charts display the same information as above but, except for the significance breakdown, for each portfolio. Therefore, the total height of the bars represents the total amount of each portfolio (corporate, retail, or property) separately considered, and the area in orange represents the amount of exposures towards SME benefiting from SF (SME SF), within the portfolio.

Secondly, the impact on CET1³⁰ is displayed in **Figure 2**. The data are broken down by class, regardless of the credit risk approach applied (i.e., standardised or internal rating-based approaches, respectively STA or IRBA). Data broken down by significance of reporting entities do not show any appreciable difference in the trend

³⁰ The measurement of capital relief in this section draws on the 2016 EBA Report [\[10\]](#) (European Banking Authority 2016), in that both papers examine the original exposures and the impact on CET1. Having said that, the papers differ in many other respects, first and foremost because the present paper focuses on Italian banks and after the introduction of the extended treatment.

shown. The impact on the theoretical³¹ minimum CET1, in absolute terms, due to the application of SF on SMEs is computed comparing the reduction in RWAs resulting from the SF. In other words, the minimum CET1 requirement – i.e. 4.5%³² - is applied to the change of RWAs - due to the SF - to assess the reduction in terms of theoretical minimum CET1 for each quarter. The impact on CET1, computed as previously described, represents approximately 1% of the total actual CET1 held by the reporting entities across the period. A notable cliff effect is displayed in the corporate class between 2019 and 2020 due to the remarkable difference, in absolute terms, of RWAs related to SME exposures in the corporate portfolio before and after the SF. This difference significantly contributed to the reduction in the corresponding theoretical minimum CET1 requirements in 2020. It is worth noting that the RWAs in the corporate or retail portfolio do not include the exposures guaranteed by the government, as those have been re-classified in the central governments or central banks portfolio³³. Therefore, the impact on CET1 computed here does not account for the effect of those guarantees. Indeed, the difference between the RWAs before and after the SF reflects only the impact of the SF³⁴.

Figure 2. Reduction in theoretical minimum CET1 in absolute terms (1)
(EUR million)



Source: Supervisory reporting data (EU Implementing Regulation 2021/451)

(1) For each portfolio, the line represents the difference of RWAs computed on the exposures towards SME benefiting from SF, before and after the application of the SF; the minimum capital requirement in terms of CET1 (i.e. 4.5%) is then applied to the difference.

Infrastructure supporting factor

Another measure introduced by the CRR II to enhance the capacity of banks to lend to the real economy is the infrastructure supporting factor. In more detail, capital charges are reduced by 25% for exposures to infrastructure projects that comply with specific criteria aimed at reducing their risk profile and enhancing predictability of cash flows. Exposures benefiting from the infrastructure supporting factor must be included

³¹ It is a “theoretical” measure because it is not the actual amount of CET1 held by the reporting entities. The actual amount would also include other requirements, such as P2R.

³² The minimum Common Equity Tier 1, CET1, that banks must hold is the first regulatory requirement for complying with the minimum capital adequacy ratios.

³³ Alternatively, AIRB banks can opt for taking into account the public guarantees in Loss Given Default estimates (art. 161, para. 1, letter c, CRR II).

³⁴ See (Banca d'Italia 2023): the study conducts an analysis on exposures that take the effects of credit risk mitigation (CRM) into account. In particular, the Note compares the exposures after CRM (including therefore the substitution effect due to the public guarantees) to corporate counterparties and the exposures after CRM to central government and central banks. As remarked in the Note, central governments and central banks exposures are included in the same prudential portfolio.

either in the corporate exposure class or in the specialised lending exposures class, with the exclusion of exposures in default.

Disentangling the effect of the infrastructure supporting factor before June 2021 is not straightforward due to the lack of specific reporting details for the exposures benefiting from this factor. As a proxy for infrastructure lending before June 2021, the specialised lending subclass of corporate for IRBA can be used although its scope is wider³⁵. Specific evidence for infrastructure supporting factor has been in place since 30 June 2021. The exposures are aggregated regardless of the approach applied (i.e. STA or IRBA). Notably, only a few large entities in Italy have applied this measure to their eligible exposures according to the evidence available after June 2021. Due to the small size of the sample, data are not disclosed for confidentiality reasons. Complex and articulated conditions may have hindered a more widespread application of this favourable treatment. The 2022 EBA Report (European Banking Authority 2022), based on a survey launched by the EBA for banks regarding the application of the infrastructure supporting factor in April 2022, seems to confirm this hypothesis. At least two-thirds of the EEA banks voluntarily participating in the qualitative survey align with these findings.

Pension and salary backed loans

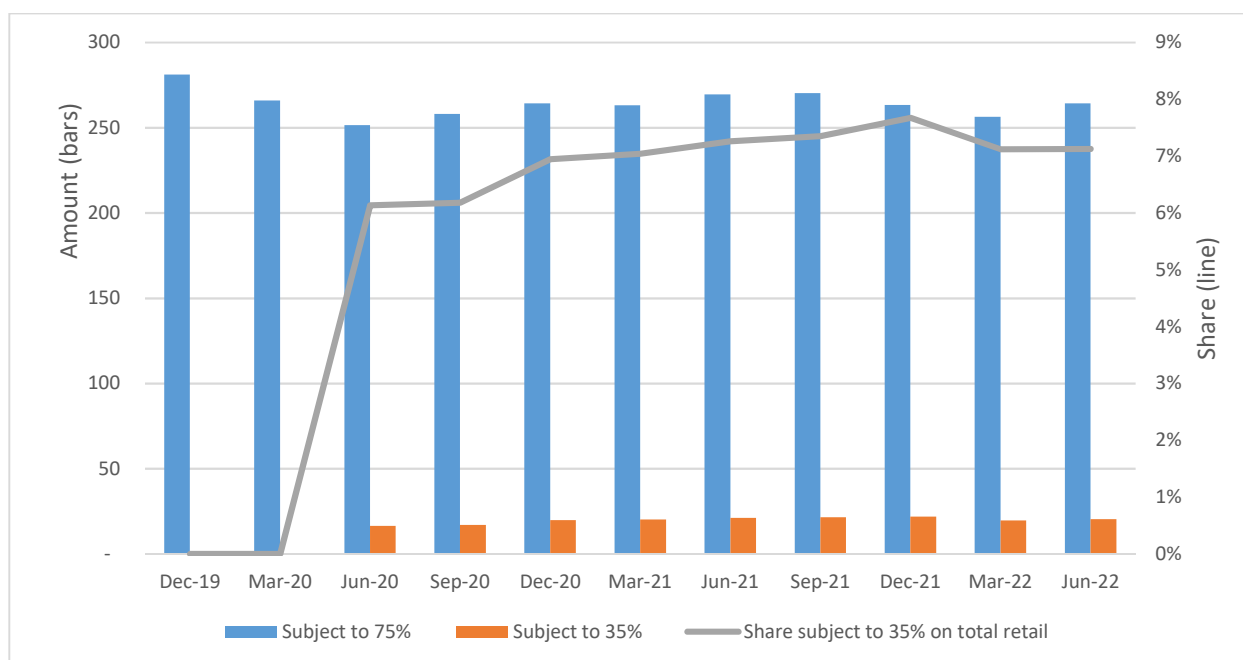
To enhance the availability of excess capital for banks and support loan growth, the CRR II amended Article 123 of the CRR. This amendment introduces a more favourable treatment for loans granted by banks to pensioners or employees with permanent contracts within the STA. This favourable treatment recognises the reduced risk associated with these loans due to the unconditional transfer of part of the borrower's pension or salary to the bank. Under Article 123 of the CRR, retail exposures are subject to a risk weighting of 75%. However, the favourable treatment allows banks to apply a risk weight of 35% for exposures within the STA, provided that certain conditions are met.

Detailed reporting information related to the exposures targeted by this measure was introduced in reporting templates starting from June 2020. Previously, banks had to report this information as part of the broader retail class. This means that direct comparison of data on pension and salary-backed loans before and after the introduction of the favourable treatment is not possible. Nevertheless, for reference, the total amount of retail exposures subject to 75% has been reported since December 2019. As of June 2020, pension and salary-backed loans can be specifically identified in reporting because they are the only exposures within the retail category of the STA to receive a risk weight (RW) of 35%.

Firstly, the chart displays the share of original exposures subject to a risk weight of 35% on the right-hand axis in the line graph of **Figure 3**. Additionally, the total amount of retail exposures subject to 75% and the total amount of exposures subject to 35% are displayed on the left-hand axis in the bar chart of **Figure 3**. Across all reference dates, the share of pension and salary-backed loans relative to the total amount of retail loans remains below 10%. Notably, significant entities (SI) account for approximately 70% of the original exposures within the total retail portfolio. Regardless of the significance, the data reveal that the exposures in the retail portfolio of STA subject to 75% decreased with respect to December 2019. This observation suggests that the exposures which benefited from the 35% RW were likely already in place, at least during the first half of 2020.

³⁵ As stated in (European Banking Authority 2022), the closest definition of “infrastructure lending” are the exposures under Project Finance, which is just one of the four sub-exposure classes of the specialised lending with the latter being, in turn, a subclass of corporate in the IRBA.

Figure 3. Original exposures: amount (left-hand scale) and share (right-hand scale) of exposures subject to 35% on total retail (1)
(EUR billion and percentages)



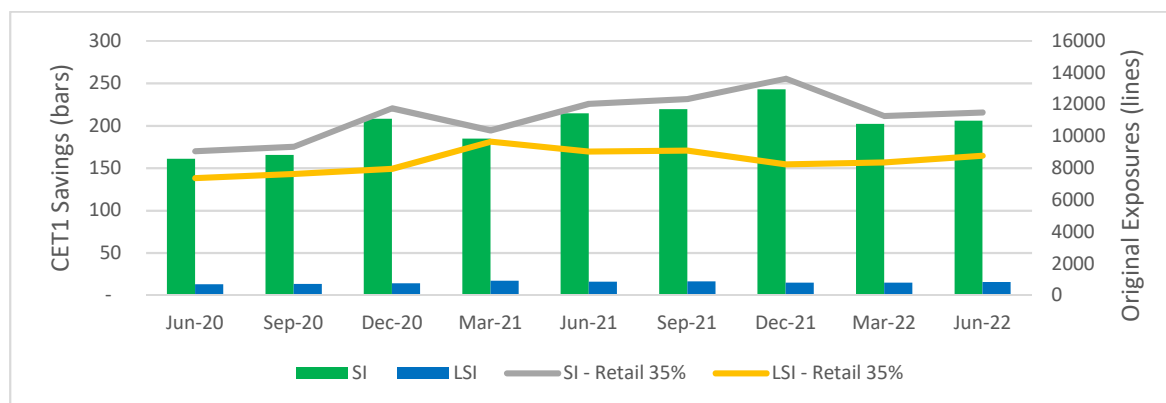
Source: Supervisory reporting data (EU Implementing Regulation 2021/451)

(1) Left-hand scale. The bars display the amount of exposures subject to 75% risk weight (blue bars) and the amount of exposures subject to 35% risk weight (orange bars). Right-hand scale. The line shows the share of exposures subject to 35% risk-weight to the total amount of retail portfolio (the retail portfolio includes exposures subject to 75% and exposures subject to 35%). All the amounts are in terms of original exposures. For reference, the amount of exposures subject to 75% are shown also for December 2019 and March 2020. Those amounts include CQS. Indeed, CQS cannot be specifically identified in the reporting until the introduction of the 35% risk weight (as of June 2020).

Secondly, the impact on CET1 is computed as the reduction in the theoretical minimum capital requirement in terms of CET1 due to the reduction in RWAs. This reduction is calculated as the difference between the previous risk weight (75%) and the new one (35%). The resulting savings in terms of the minimum required CET1 amount to approximately 0.2% relative to the actual CET1 held³⁶. Interestingly, the application of the new risk weight has had limited impact on capital resources in absolute terms (as shown in **Figure 4**, left-hand axis, bar chart). This phenomenon may be attributed to the nature of the loans involved, which are primarily aimed at employees with permanent contracts and/or pensioners. Consequently, the overall exposure amount is likely to be quite limited in absolute terms. The line graph (right-hand axis) depicts the trend of original exposures, broken down by the significance of the reporting entities. This trend closely mirrors the corresponding trend in CET1 savings.

³⁶ In more detail, the ratio of CET1 savings on the total CET1 was equal to 0.14% and 0.06% at 31 December 2021 for significant and less significant entities, respectively, compared to 0.12% and 0.05% one year earlier, respectively.

Figure 4. Reduction in theoretical minimum CET1 in absolute terms (1)
(EUR million)



Source: Supervisory reporting data (EU Implementing Regulation 2021/451)

(1) Left-hand side. The bars represent the difference of RWA computed on the exposures in the retail portfolio benefiting from a 35% risk weight instead of 75%, broken down by SI and LSI (green bars and blue bars, respectively); the minimum capital requirement in terms of CET1 (i.e. 4.5%) is then applied to the difference. Right-hand side. The lines show the amounts of exposures in the retail benefiting from a 35% risk weight, broken down by SI and LSI (grey line and yellow line, respectively).

4.1.2 Leverage ratio

This section investigates the impact of the leverage ratio relief both on the LR and on the LR requirement. The analysis focuses on how the ratio components (Tier 1 Capital, total exposure and Leverage Ratio aggregated for the Italian banking system), the total exposure composition and the Leverage Ratio distribution varied over the observation period, looking for the presence of any cliff effect with the enforcement of the Quick Fix/CRR II and analyzing any relevant difference in the impact on significant and less significant entities.

The LR here considered is the version that adopts the transitional definition of Tier 1 capital, rather than the fully phased-in definition. The transitional LR is usually slightly higher than the latter, since the capital at the numerator includes elements that have been gradually phasing out in order to fully align its composition to the new provisions introduced by CRR II-CRD V.

Figure 5 illustrates the different components that make up the total exposure measure, differentiating between positive (exposures) and negative items (excluded exposures to central banks, other deductions according to CRR II and asset deducted from Tier 1 capital according to the transitional definition of LR). Detailed amounts are reported on **Table A.2** in the Annex.

The results show that the exposures grew almost steadily between December 2019 and June 2021 (+14%, from 3,311 to 3,772 billion euro), and remained relatively constant thereafter. Other on-balance sheet items (which include all assets other than certain types of derivatives, credit derivatives and securities financing transactions - SFTs) are accountable for largest part of this growth (+16% in the same time interval)³⁷, while we observe a heavy declining pattern for SFTs (-41% in December 2021 compared with December 2019).

Exposures to central banks have been reported from September 2020 (kick-in of the Quick Fix) to March 2022 (last date with the exceptional circumstances due to Covid-19)³⁸. Turning to the pattern of these exposures, it can be remarked that the amount deducted was relatively low at the beginning (41 billion euro in September 2020) and increased in the followings quarters, with the major part of the growth concentrated on

³⁷ A factor that could have been contributed to this trend is the high level of liquidity injected in the bank system by the central banks with the expansionary monetary policy, further intensified with the COVID-19 pandemic

³⁸ The relief could be endorsed by the institutions on a voluntary basis. Therefore, any bank could decide whether to adopt it and for which reference dates, provided that the exceptional circumstances exist.

December 2020 (+208 billion euro) and June 2021 (+98 billion euro). We can reasonably assume that in September 2020 the impact of the Quick Fix was still relatively new to assess and integrate in the reporting of the banks³⁹. The analysis of granular data reveals that the first major jump was caused by the largest banks starting to adopt the relief, while the second was also due to the contribution of a steep increase of the amount for some of the largest banks already adopting the relief. Furthermore, it is possible that the definition of a clear reporting framework since June 2021, and the subsequent introduction of an explicit reference to the central banks exposures in the supervisory reporting templates, further encouraged the institutions to report such exposures.

Figure 5. Total exposure measure, Tier 1 Capital and Leverage Ratio (1)
(EUR billion and percentages)



Source: supervisory reporting data (EU Implementing Regulation 2021/451).

(1) Total figures at system level. For each reference date, the former stacked column indicates the composition of the total exposure measure in its positive and negative terms, while the latter indicates the Tier 1 Capital. The solid line refers to the Leverage Ratio.

Looking at the Tier 1 capital, it averaged around 215 billion euro in the period from June 2020 to December 2021, compared with an average of around 206 billion outside this window. A factor that might have contributed to this slight difference is the ECB recommendation to banks not to pay dividends or buy back shares during COVID-19 pandemic (March 2020 to September 2021).

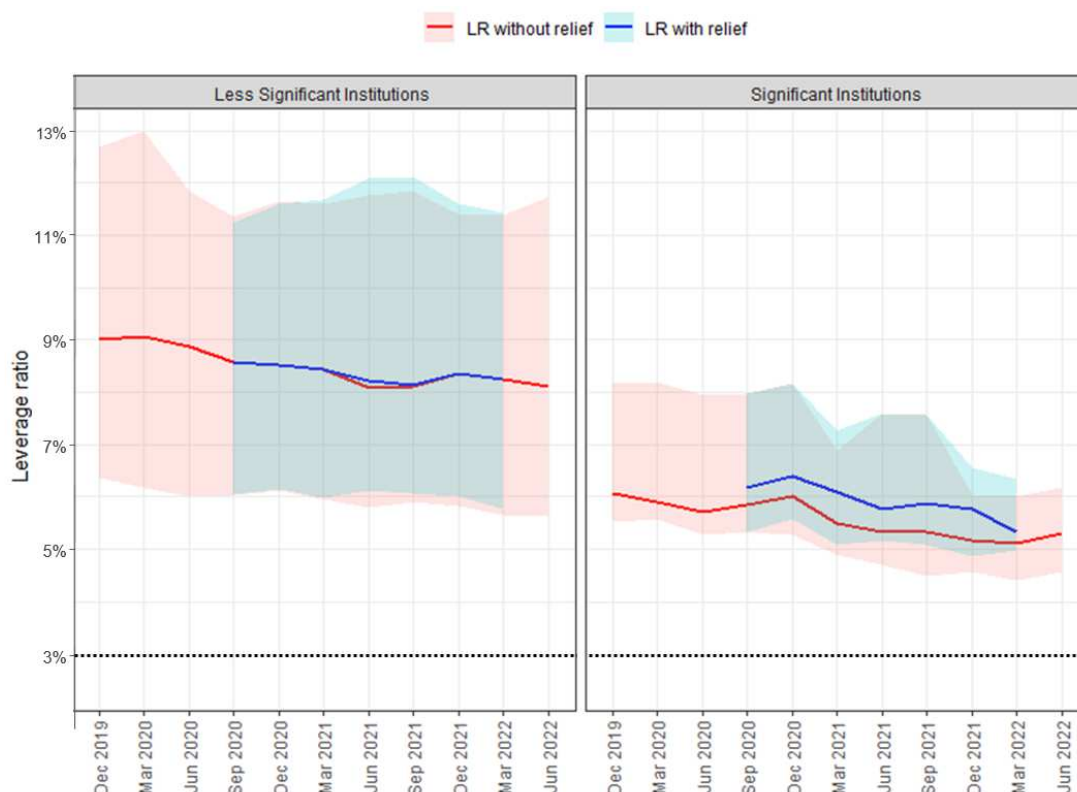
The observed patterns suggest that, already before the enforcement of the CRR II, the Leverage Ratio at system level was significantly above the minimum binding requirement (3%). The application of the LR relief introduced with the exclusion of central banks exposures, led to an increase of the LR levels (from 6.0% to 6.3% on average). The cliff effect between June 2020 and September 2020 was moderate due to the limited amount of exposures excluded (the LR increased by 0.1% during the period), while the rise was more relevant in the months from June to December 2020 (0.5%). The decreasing trend of the LR from September 2021 to

³⁹ On August 2020 the EBA published Guidelines clarifying how to manage the impact of the CRR Quick-Fix on the current supervisory reporting framework, and how to report the excluded exposures to central banks on the supervisory reporting templates. Such short notice could have contributed to the modest level of the deduction reported on September 2020.

June 2022 is caused by a combination of two factors: (i) an increase of the Total Exposure Measure (+11%) brought, initially, by a diminishing adoption of the relief and, subsequently, by the end of the adoption with cease of the exceptional circumstances; (ii) a decrease of the Tier 1 capital (-3%).

A positive impact of the relief can be observed even more clearly in **Figure 6** which illustrates, for SIs and LSIs, the evolution of the distribution of the LR with and without the relief⁴⁰. Two features are worth remarking. First, LSIs show definitely higher levels of LR compared to the SIs (the median values are 9% for the former, compared to 6% for the latter). Second, the positive impact of the relief is considerably more relevant for the SIs, since in this case the exclusion of central banks exposures contributed to increase the median level by about 0.5% and shift upward the whole distribution of the LR in all the reference dates; on the contrary, for the LSIs only a modest change of the median and the distribution can be observed for few reference dates.

Figure 6. Leverage Ratio for SIs and LSIs (1)
(percentages)



Source: supervisory reporting data (EU Implementing Regulation 2021/451).

(1) Solid lines refer to the medians, while shaded areas indicate the first and third quartiles of the distribution; the BCBS and EU versions of the ratio are indicated in red and blue, respectively.

The reason behind this difference between SIs and LSIs is related to the strategies followed for its adoption. As shown in **Table 1** over 50% of the SIs exploited the relief granted by the regulation, as compared to less than 25% of the LSIs. Consequently, the overall benefit at system level in terms of percentage reduction of the exposures was more than double for the SIs compared with the LSIs, 7.6% and 3.5%, respectively. Detailed figures of the measures at system level with the breakdown for SIs and LSIs are reported on **Table A.3** in the Annex.

⁴⁰ For the banks that adopted the relief, the theoretical value of the LR without the relief has been computed reintegrating the excluded exposures to central banks in the total exposure measure.

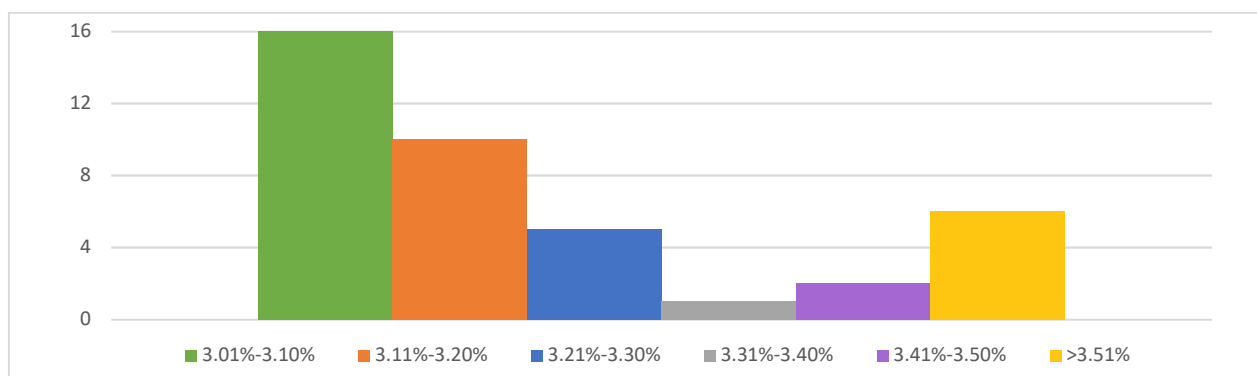
Table 1. Diffusion and impact of the LR relief for SIs and LSIs
(percentages)

Description	Overall	SI	LSI
% of institutions excluding exposures to central banks	27.7%	52.7%	24.0%
% reduction of the exposure measure given by the exclusion	-7.1%	-7.6%	-3.5%

Source: supervisory reporting data (EU Implementing Regulation 2021/451).

Looking at the distribution of the adjusted Leverage Ratio in **Figure 7**⁴¹, it can be observed that in most cases the adjustment brought a LR requirement just slightly higher than the regular 3% (about half of the aLR lies in the 3.01%-3.10% interval), and anyway it rarely exceeded the 3.3%. However, given the high levels of LR observed for the whole banking system, the increase of the requirement induced by the adjustment had a negligible impact on such LR levels.

Figure 7. Adjusted leverage ratio distribution



Source: supervisory reporting data (EU Implementing Regulation 2021/451).

4.1.3 Net stable funding ratio

In this section we provide some descriptive evidence on the impact of the introduction of the NSFR requirement on the Italian banking system. First, we calculate the NSFR at bank level and analyse its statistical distribution over the observation period in order to assess the extent to which Italian banks complied with the new standard. Second, we describe the evolution of the major components of the numerator and denominator of the ratio at system level.

Our analysis relies exclusively on SSM supervisory reporting data; therefore, we have to take into account the evolution of the requirements and of the underlying reporting framework during the period of observation. Until June 2021 the NSFR was not binding in the EU. Hence, the main purpose of the reporting framework in force during the period from January 2014 to June 2021 was calibration; moreover, it allowed only the monitoring of the major components of the Basel's standard. For these reasons, for the observations referred to the period mentioned above we can only obtain an estimate of the NSFR by specifying suitable weights for the reported components of the ratio⁴². After June 2021, with the introduction of a compulsory NSFR requirement for EU banks, the reporting framework was revised to reflect the final specification adopted by

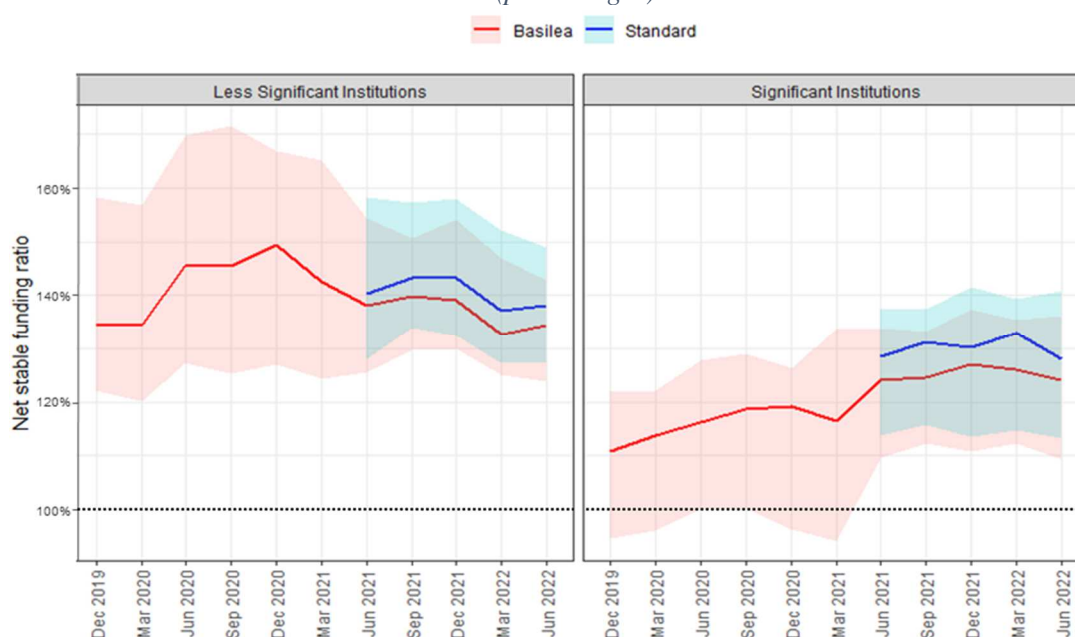
⁴¹ Since the aLR takes into consideration the exposures at a fixed date (when the exceptional circumstances were declared), it does not vary among the reference dates.

⁴² The weights adopted are consistent with those specified in the EBA NSFR monitoring tool available on the EBA website.

the EU Commission. The new reporting enables an accurate computation of the NSFR but the results obtained cannot be directly compared to the previous periods due to differences in the granularity of reporting as well as in some specific weights adopted in the CRR2⁴³. In order to address such discontinuities, we reconcile the two reporting frameworks to obtain consistent reporting aggregates for the major components of the numerator and the denominator. Moreover, for the periods from June 2021 onwards the weights used to calculate the NSFR are fully compliant with the BCBS standard so as to make times series for the ratio more consistent over time. All these adjustments are needed to eliminate the major differences stemming from the evolution of the reporting framework. Nonetheless, they inevitably entail some simplifying assumptions and a certain degree of approximation. Moreover, further differences in the data referred to the period before June 2021 may arise due to ambiguities in the available reporting specifications; this required the EBA to provide further clarifications through specific Q&As. Therefore, our results, while useful in shedding light on the general impact of the NSFR requirement at system level, may still reflect residual differences related to the discontinuities in the reporting framework. The results obtained according to the EU version of the requirement are nevertheless kept as a benchmark to give some insight on the relevance of the specificities introduced by the CRR II relative to the BCBS standard (Basel Committee on Banking Supervision 2022)⁴⁴.

The distribution of the NSFR shows that, over the observation period, Italian banks were largely compliant with NSFR requirements with values of the ratio well above 100% (**Figure 8**). The results are similar for both the BCBS (red shaded distribution) and EU (blue shaded distribution) versions of the ratio. A slight downward shift of the distribution can be observed with reference to the median of the BCBS version of the indicator, which decreased by a maximum of 4.8 and 6.8% for SIs and LSIs respectively. On the contrary, no notable differences emerge with reference to the variability of the ratio and the number of compliant banks.

Figure 8. NSFR indicator for SIs and LSIs (1)
(percentages)



Source: supervisory reporting data (EU Implementing Regulation 2021/451).

(1) Solid lines refer to the medians, while shaded areas indicate the first and third quartiles of the distribution; the BCBS and EU versions of the ratio are indicated in red and blue, respectively.

⁴³ Specifically, for the computation of RSF, high quality level assets receive finer grained weights reflecting the corresponding haircuts in the LCR Delegated Act; lower weights are also applied to assets encumbered via cover pool, short term reverse repos with financial institution and asset related to trade finance.

⁴⁴ The specificities are described in detail in the report: “Regulatory consistency assessment program – Assessment of NSFR regulations – EU”.

The evolution of the distribution of the ratio calculated according to BCBS standard (red shaded distribution in **Figure 8**) indicates that the vast majority of Italian banks tended to have satisfactory NSFR levels well before its adoption in the EU legislation: from December 2019 to March 2021 only a small fraction of entities (ranging from 12% to 17% of the overall sample per quarter) had an estimated ratio falling below the regulatory threshold⁴⁵. In addition, over this period while the NSFR of LSIs tended to remain fairly stable, an upward trend can be observed for SIs, reflecting an effort to improve their NSFR position. Following the enforcement of the requirement in the EU legislation (June 2021), NSFR levels tended to remain fairly stable for all banks in the sample. Some differences remain between SIs and LSIs, with the latter showing relatively higher levels of NSFR.

The results obtained when computing the EU version of the ratio lead to very similar conclusions: all banks consistently reported NSFR levels above 100% and most of them featured values of the ratio significantly higher than the regulatory threshold. This evidence suggests that, though beneficial, specificities introduced in the EU regulation did not appear to significantly alter the NSFR of Italian banks. In addition, it confirms that estimates based on the previous reporting framework turned out to be, on average, fairly accurate approximations of the actual NSFR. Interestingly, for both significant and less significant institutions, there is a shrinkage in the dispersion of the ratio after the enforcement of CRR II. Although this could be, in principle, consistent with an optimization of banks' balance sheet in light of the new mandatory requirement, this is unlikely to be the case considering the potential adjustment costs of changing assets and liabilities composition in the short term. An alternative, and more realistic, explanation is that banks have become more precise in calculating and reporting their NSFR, also thanks to the improved reporting framework tailored to the calculation of the NSFR.

To further explore the evolution of the NSFR, in the second part of our analysis we study the composition of the numerator and denominator of the ratio by breaking down the total amount of RSF and ASF according to the major dimensions affecting the weights applied to assets and liabilities. For the purpose of these analyses, the BCBS weights are always employed for reference periods from June 2021 onwards in order to make the time series more consistent.

The first dimensions that we consider are the technical forms of the exposures in the denominator of the ratio and those of the funding source for the numerator (**Figure 9**). In the denominator, assets that can be easily sold or pledged as collateral by banks receive lower weights in the calculation of RSF as compared to assets that are either less liquid, riskier or that require a continuous commitment for banking activity. In the numerator, funding sources without a stated maturity (such as equity) or those displaying greater behavioural stability (such as retail deposits or funding by non-financial counterparties) are assumed to be more stable; then, they receive higher weights in the computation of the amount of ASF.

As far as the RSF is concerned, the results show that the major contribution comes from loans and, to a lesser extent, from high quality level assets (HQLA) and securities different from HQLA. Very limited contributions arise, instead, from derivative activities and off-balance sheet exposures. When considering the evolution of the total amount of RSF over time, it can be observed that it steadily increased until June 2021; afterwards, RSF remained stable up to the first quarter of 2022 and slightly decreased during the last quarter of the observation period. The initial increase in RSF was more pronounced for the HQLAs and securities asset classes, while the level of loans, after an initial increase, levelled off. The drop observed in June 2022 can be largely attributed to the reduction in HQLA and loans to financial corporations. The dynamic observed for loans⁴⁶ reflects, to some extent, the evolution of credit demand and supply conditions during the pandemic crisis, which benefited from public interventions to sustain liquidity and credit to the economy as well as from accommodating monetary policies. The increase in HQLAs may be due to the more favourable treatment in terms of weights.

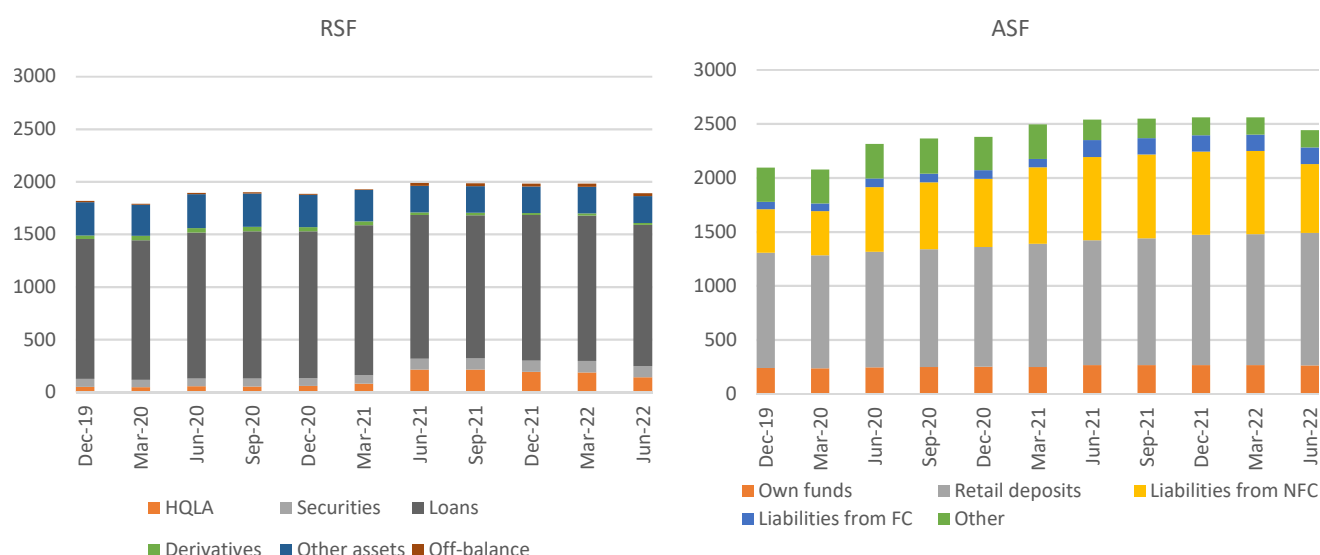
⁴⁵ Cases of non-compliance however refer to banks with NSFR levels very close to 100%.

⁴⁶ The pattern regarding loans and securities might also be influenced by changes in reporting specifications introduced with the CRR II which require banks involved in securities financing transactions to report the cash leg or the collateral leg when the latter would receive higher weights.

The evidence on the composition of the numerator indicates that the largest share ASF of Italian banks comes from retail deposits, followed by loans from non-financial counterparties (including central banks) and own funds. In line with the dynamic observed for the RSF, the total amount of ASF also increased until June 2021; thereafter, it levelled off and showed a slight reduction in June 2022. The initial upward trend was mostly driven by an increase in the share of funding from non-financial corporations and deposits, while the reduction in June 2022 reflects a shrinkage in the contribution of funding from non-financial counterparts (in particular central banks).

The evidence on the overall composition of the numerator is consistent with the importance of traditional business models for Italian banks. In terms of dynamics, the evolution of funding from non-financial clients is consistent with access by banks to the third program of targeted longer-term refinancing operations (TLTRO3) whose early repayment may have influenced the last quarter of observation, while the increasing contribution by retail deposits is in line with the reduction in consumption and the ample liquidity injected in the economy during the more acute phases of the pandemic crisis.

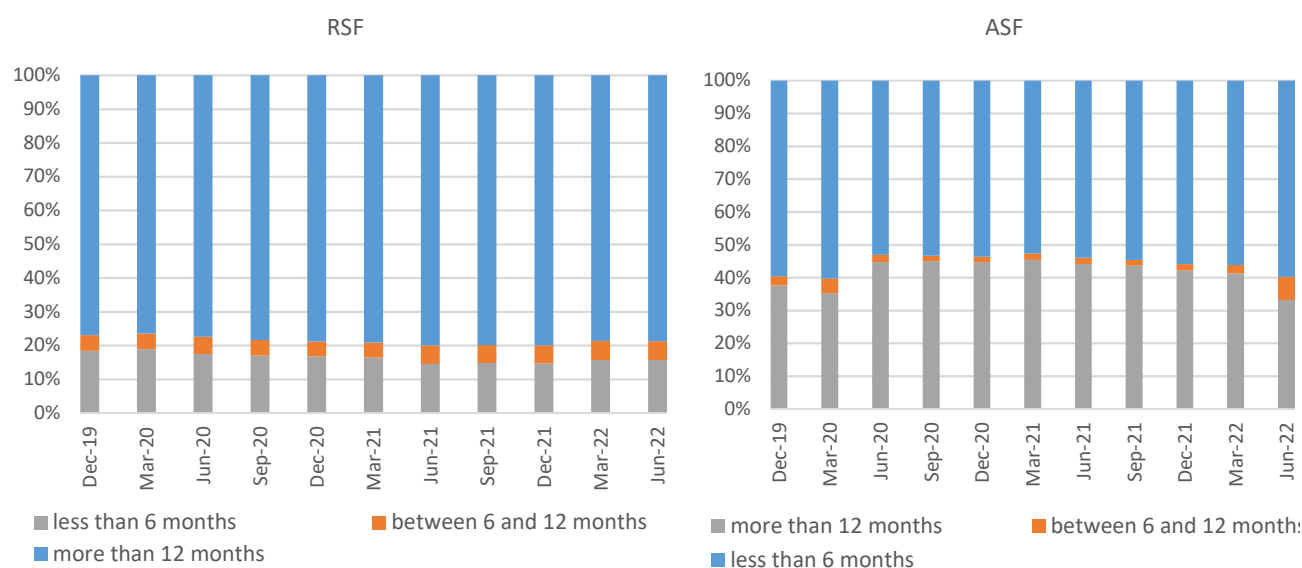
Figure 9. Total amount of RSF and ASF by technical form
(EUR billion)



Source: supervisory reporting data (EU Implementing Regulation 2021/451).

The second dimension considered in the analysis is the maturity structure of assets and liabilities (**Figure 10**). In computing the amount of RSF, assets with longer maturity receive relatively higher weights than short-term ones due to their longer persistence in banks' balance sheets. The weights are calibrated based on three time buckets (less than 6 months, between 6 and 12 months, more than 12 months). Similarly, also funding sources are categorized into analogous time buckets wherein funding with longer term maturity is assumed to be more stable and, consequently, it receives higher weights in the calculation of the numerator of the ratio. These findings do not provide evidence of major adjustments to the maturity structure of banks' assets, suggesting that the new requirement and the economic outlook did not reduce incentives to invest in longer term assets over the period of observation. On the other hand, during the initial periods of observation the share of funding with maturity longer than 12 months increased steadily, suggesting that banks were able to extend the term of their funding sources until June 2021. In contrast, a sharp drop in longer term funding can be seen in June 2022 accompanied by a simultaneous (but more limited) increase in the share of funding with maturity between 6 and 12 months. Again, this latter change was almost entirely driven by central bank funding and is consistent with the maturing of TLTRO3 operations.

Figure 10. Total RSF and ASF by maturity
(percentages)



Source: supervisory reporting data (EU Implementing Regulation 2021/451).

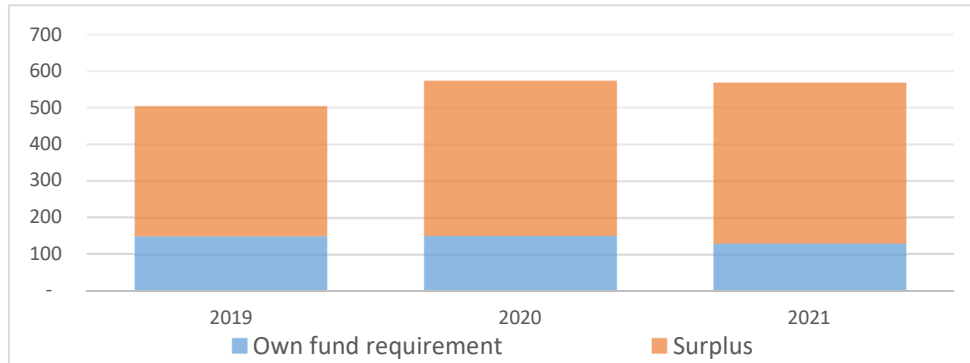
4.2 Impacts of regulatory innovations on investments firms

The IFR introduces several innovations for the calculation of own funds requirements for IFs while leaving unchanged the eligibility criteria for the instruments and items considered in own funds. This section presents descriptive evidences on the variation in capital requirements for Italian IFs before and after the introduction of IFR. For the observations falling within the period in which the CRR framework still applied to IFs, the amount of own funds requirements is calculated as the that of total risk exposure multiplied by 8%; for this period, for IFs exempted from the application of CRR the requirement was calculated as the minimum capital requirement set out by MIFID regulation⁴⁷. For observations falling in the period following the enforcement of the new framework, the requirement is computed as the maximum among the following three parameters: a) minimum capital requirement; b) fixed overhead requirement; c) k-factor capital requirement calculation (the first two for class 3 IFs).

The aggregated evolution of total capital broken down by total own funds requirements and total capital surplus is reported in **Figure 11**. The overall amount of own funds requirements remained stable from 2019 to 2020 (149 and 150 million euro in the two years, respectively). In 2021, due to the introduction of the regulation IFR, it decreased to 129 million euro (-13.9% on the previous year). In any case, under both frameworks the amount of own funds was considerably higher than the capital requirements: the overall surplus amounted to 359 million euro in 2019, 423 in 2020 and 438 in 2021.

⁴⁷ Directive 2014/65/EU.

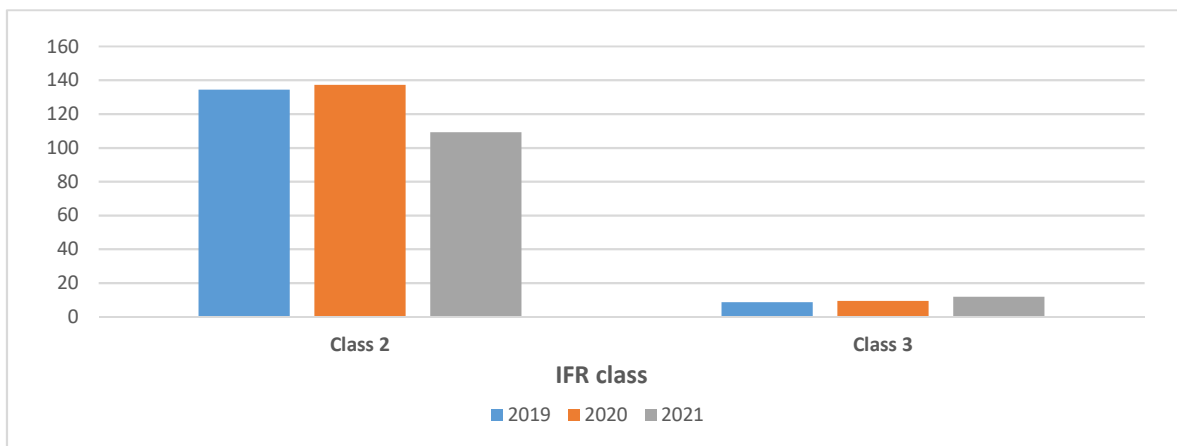
Figure 11. Global own funds requirement and surplus
(EUR million)



Source: supervisory reporting data (EU Implementing Regulation 2022/2284).

In order to explore the heterogeneous effects of the new rules on the Italian financial system, we further investigate how the level of capital requirements changed across groups of IFs. First, we analyse the impact on the different categories of IFs envisaged by the IFR (**Figure 12**). The evidence clearly shows that class 2 IFs had significant reductions in terms of capital requirements, while class 3 IFs had a slight increase. More specifically, for the group of class 2 IFs the level of own funds required moved from 134.4 million euro in 2019, to 138.7 in 2020 and 111.6 in 2021 (-17.0 and -19.6% for 2019 and 2020, respectively). For class 3 IFs, it increased from 8.67 million euro (in 2019) to 9.35 (in 2020) and 11.80 in 2021 (36.1 and 26.2% for 2019 and 2020, respectively).

Figure 12. Own funds requirement by Investment Firm class
(EUR million)

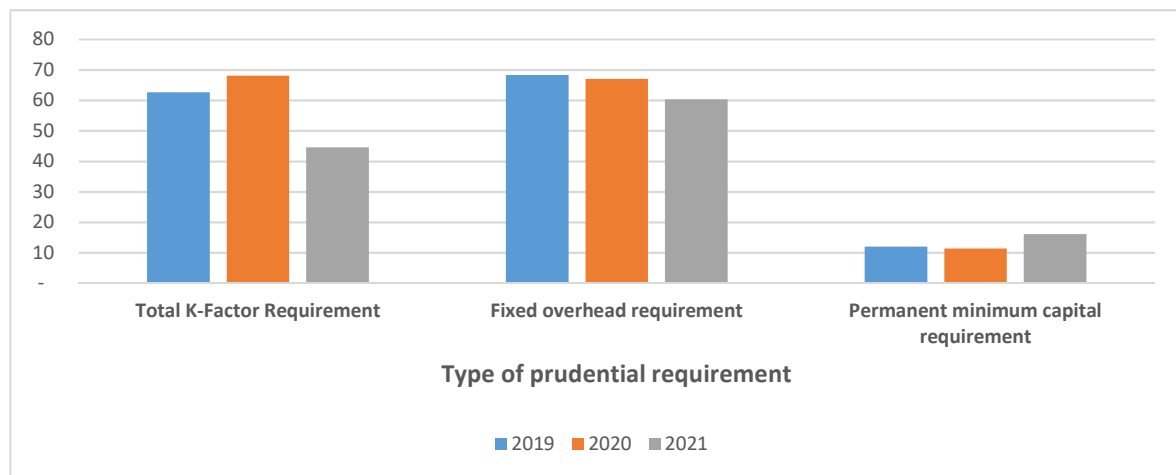


Source: supervisory reporting data (EU Implementing Regulation 2022/2284).

Further differences emerge when considering the impacts for IFs of adopting different approaches for the calculation of own funds requirements (**Figure 13**). IFs that in the new framework calculate their capital requirements with the k-factor method showed globally the highest reduction.

For them, the global total capital requirements moved from 62.6 million euro in 2019 and 68 million euro in 2020 to 44.5 in 2021 (-28.9 and -34.6 % for 2019 and 2020, respectively). Similarly, IFs applying the fixed overhead requirement showed a reduction in the new framework, although to a less extent (-11.7% over 2019 and -10% over 2020). On the contrary, IFs that had to hold only minimum capital requirements were subject to an increase of the capital requirements, from 12.08 million euro in 2019 and 11.6 million euro in 2020 to 17.1 in 2021 (41.6% and 41.5% for 2019 and 2020, respectively).

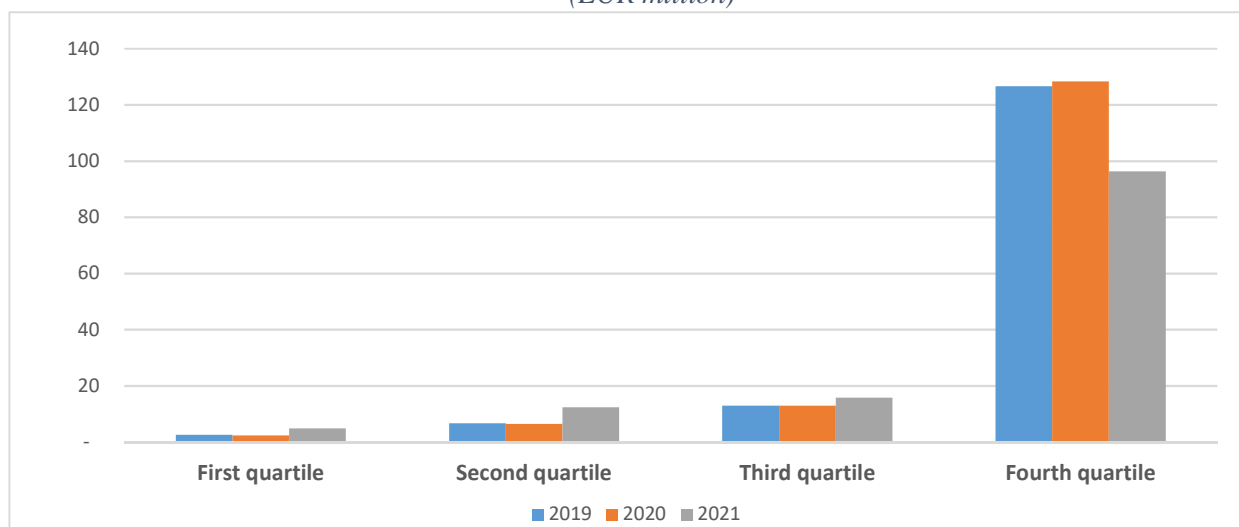
Figure 13. Own funds requirement by type of requirement in 2021
(EUR million)



Source: supervisory reporting data (EU Implementing Regulation 2022/2284).

Finally, we analyse the changes in own funds requirements across the distribution of firms' size (**Figure 14**). The results indicate that the biggest players (i.e. those falling in the fourth quartile of the distribution) showed a reduction in capital requirements, which overall amounts to 32.1 million euro, from 128.3 in 2019 to 96.2 million euro in 2020 (-25%), while for the other IFs an increase in capital requirements can instead be observed. The increase in capital requirements also tends to be heavier in relative terms as firm's size decreases (103.9%, 93.4% and 21.8% for the first, second and third quartile respectively, in 2021 over 2020).

Figure 14. Own funds requirement per quartile
(EUR million)



Source: supervisory reporting data (EU Implementing Regulation 2022/2284).

5 CONCLUSIONS

Our descriptive analyses concerning leverage ratios and net stable funding ratios (NSFR) show that Italian credit institutions have been largely compliant with both measures since their introduction as binding requirements. More specifically, all banks feature very satisfactory levels for both the leverage ratio and the NSFR, significantly above the regulatory thresholds; some differences emerge between SIs and LSIs, with the latter showing relatively higher levels for both ratios. The vast majority of institutions already had satisfactory values of both the leverage ratio and the NSFR well before the implementation of the new framework in the EU and no major adjustments can be observed afterwards; this finding was somewhat expected since both ratios were already monitored by supervisors in the context of the Supervisory Review and Evaluation Process (SREP).

As regards the innovations in the area of credit risk, the results show that measures targeting SMEs have been by far the most important among the ones analysed in the paper, as confirmed by the expansion in the share of loans benefiting from the SMEs supporting factor in terms of original exposures. Such increase in SME exposures might be due to pre-existing exposures that were already in place rather than to new loans, considering that exposures towards corporate counterparties have not increased significantly. Innovations related to pensions and salary-backed loans and the infrastructure supporting factor seem to have had a very modest impact. These findings could arise from those measures being limited to specific kinds of services.

As far as IFs are concerned, the empirical evidence suggests that the new approaches to own funds requirements introduced by the IFR – which are more tailored and sensitive to the specific risks faced by IFs compared with the banks' framework – set lower capital requirements, especially for firms with more complex operations (class 2 IFs) and for larger firms.

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7 APPENDIX

Table A.1. Share of SME SF exposures to the total by class (percentages).

	Dec-19	Mar-20	Jun-20	Sep-20	Dec-20	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22
Corporate											
Share of SME SF on total class											
<i>SI</i>	20%	20%	47%	48%	50%	51%	54%	54%	55%	55%	55%
<i>LSI</i>	11%	11%	35%	36%	41%	39%	39%	40%	42%	40%	42%
Retail											
Share of SME SF on total class											
<i>SI</i>	54%	53%	55%	57%	57%	61%	58%	58%	59%	59%	59%
<i>LSI</i>	51%	50%	49%	49%	52%	39%	51%	51%	57%	56%	55%
Property											
Share of SME SF on total class											
<i>SI</i>	19%	18%	26%	26%	26%	25%	26%	26%	23%	20%	19%
<i>LSI</i>	17%	17%	17%	17%	17%	17%	17%	17%	22%	21%	21%

Source: supervisory reporting data (EU Implementing Regulation 2021/451).

Table A.2. LR total exposure measure composition (EUR billion).

	Dec-19	Mar-20	Jun-20	Sep-20	Dec-20	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22
Exposure measure without exclusions and deductions	3311	3378	3515	3507	3556.36	3662.4	3772	3773	3690	3766.6	3735
Other on-balance sheet items	2789	2825	2955	2992	3063.82	3143.1	3249	3268	3257	3284.4	3262
Off-balance sheet items	304	326	356	321.7	323.53	330.7	329	329	267	285.1	276
Securities transactions financing	170	175	153	145.5	199.83	131.9	126	108	99	120.3	122
Derivatives	48	52	51	47.8	49.18	56.7	62	63	64	68.5	69
Regular-way purchases and sales awaiting settlement & Cash pooling arrangements	-	-	-	-	-	-	6	5	3	8.3	5
Excluded exposures to central banks	-	-	-	-41	-248.85	-283.1	-381	-403	-240	-228.3	-
Asset amount deducted or added from Tier 1 capital	-25	-25	-22	-20	-13.97	-14.5	-15	-15	-15	-19.5	-19
Total exposure measure	3286	3353	3493	3446	3293.54	3364.8	3376	3355	3435	3518.8	3716

Source: supervisory reporting data (EU Implementing Regulation 2021/451).

Table A.3. LR measures at system level and impact of the LR relief for SIs and LSIs (EUR billion and percentages).

	Dec-19	Mar-20	Jun-20	Sep-20	Dec-20	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Average
Total exposure measure including exposures to central banks	-	-	-	3487	3543	3648	3757	3758.5	3675	3747	-	3659
<i>SI</i>	-	-	-	3078	3129	3208	3326	3330.2	3251	3313	-	3233
<i>LSI</i>	-	-	-	409	414	440	431	428.3	424	434	-	426
Excluded exposures to central banks	-	-	-	-41.43	-249	-283	-381	-403	-239.6	-228	-	-261
<i>SI</i>	-	-	-	-38.86	-242	-271	-361	-381	-218.3	-209	-	-246
<i>LSI</i>	-	-	-	-2.57	-7	-12	-20	-22	-21.3	-19	-	-15
% of institutions excluding exposures to central banks	-	-	-	22%	28%	28%	23%	31%	31%	32%	-	28%
<i>SI</i>	-	-	-	40%	55%	53%	55%	55%	56%	56%	-	53%
<i>LSI</i>	-	-	-	19%	24 %	24%	18%	27%	28%	29%	-	24.0%
% reduction of the exposure measure given by the exclusion	-	-	-	-1.2%	-7.0%	-7.8%	-10.1%	-10.7%	-6.5%	-6.1%	-	-7.1%
<i>SI</i>	-	-	-	-1.3%	-7.7%	-8.5%	-10.9%	-11.5%	-6.7%	-6.3%	-	-7.6%
<i>LSI</i>	-	-	-	-0.6%	-1.7%	-2.7%	-4.7%	-5.1%	-5.0%	-4.4%	-	-3.5%
Total exposure measure	3286	3353	3492.7	3445.6	3293.5	3365	3376	3355	3435	3519	3716	3392
<i>SI</i>	2908	2961	3086.9	3039.3	2886.1	2937	2965	2948	3033	3104	3278	2987
<i>LSI</i>	378	392	405.8	406.3	407.4	428	411	407	402	415	438	405
Tier 1 Capital	206	207	214	215	219	217	215	214	212	206	207	212
<i>SI</i>	179	180	186	187	189.5	187	186.5	186	184	179	180	184
<i>LSI</i>	27	26	28	28	28.5	30	28.5	28	28	27	27	28
Leverage ratio	6.27%	6.16%	6.12%	6.24%	6.65%	6.46%	6.37%	6.38%	6.17%	5.84%	5.56%	6.20%
<i>SI</i>	6.16%	6.09%	6.02%	6.14%	6.56%	6.37%	6.29%	6.29%	6.08%	5.76%	5.50%	6.12%
<i>LSI</i>	7.18%	6.71%	6.84%	6.99%	7.24%	7.03%	6.94%	6.97%	6.85%	6.45%	6.05%	6.84%

Source: supervisory reporting data (EU Implementing Regulation 2021/451).

Table A 4. Median of NSFR for banks in the sample (percentages).

<i>Reference date</i>	Less Significant banks		Significant banks		All banks	
	Basilea	CRR2	Basilea	CRR2	Basilea	CRR2
Dec 2019	134.4%		110.7%		131.1%	
Mar 2020	134.4%		113.8%		131.2%	
Jun 2020	145.6%		116.2%		140.2%	
Sep 2020	145.6%		118.6%		139.9%	
Dec 2020	149.5%		119.1%		143.9%	
Mar 2021	142.6%		116.5%		138.3%	
Jun 2021	138.1%	140.3%	124.2%	128.6%	134.2%	138.6%
Sep 2021	139.8%	143.3%	124.7%	131.2%	136.9%	139.7%
Dec 2021	139.1%	143.2%	127.0%	130.3%	137.4%	141.0%
Mar 2022	132.7%	137.1%	126.0%	132.8%	132.0%	136.3%
Jun 2022	134.4%	138.2%	124.0%	128.0%	132.3%	136.6%

Source: supervisory reporting data (EU Implementing Regulation 2021/451).