



Università
Ca' Foscari
Venezia
Dipartimento
di Economia



With the support of the
Erasmus+ Programme
of the European Union

JEAN MONNET CHAIR

"DIGITALISATION IN EU FINANCIAL STUDIES" - EUDIFIN

Stress Tests and Banks' Incentives: the Strengths and Weaknesses of the EU-Wide Stress Test Exercise

Giada Tubiana

MSc Student Finance

Ca' Foscari University of Venice

EUDIFIN course: International Financial Regulation



EUDIFIN

RESEARCH WORKING PAPER NO. 16

APRIL 2021

NOTICE

The work has been produced by the author in the framework of EUDIFIN's teaching and research activities.

As part of the assessment methods, each EUDIFIN courses require students to engage in a research-oriented assignment. This assignment prompts students to deal with the current political and scholarly debate revolving around the challenges the European Union faces to further integration in the internal financial market. This learning experience rewards those students who demonstrate interest, commitment and dedication, and who are keen to channel this enthusiasm into a "contest" between peers for the best "Research Papers".

The best papers will be published as EUDIFIN Working Paper on the EUDIFIN website of Ca' Foscari University of Venice.

UNIVE.EUDIFIN



Abstract

The EU-wide stress test exercise is an important supervisory tool employed by the European Banking Authority to assess the resilience of European credit institutions and to contribute to the enhancement of financial stability in the European Union, but the method under which this supervisory exercise is conducted is not free from flaws. This paper will highlight both the strengths and the weaknesses of the current approach, with a particular focus on the constrained bottom-up model adopted by supervisors to conduct the test, the requirement to disclose the result of the exercise, and the link between the outcome of stress tests and the determination of capital regulation. Furthermore, based on the analysis of relevant literature as well as the opinion of relevant Authorities, this paper will suggest some possible solutions that would contribute to overcome the weaknesses of the current framework, thus increasing the effectiveness of the EU-wide stress test exercise.

Key words: EU-wide stress test, bank supervision, credit institutions, European Banking Authority (EBA), EU legislation.

Summary

Introduction	5
Description of the EU-wide stress test.....	6
The constrained bottom-up approach.....	7
The incentives for banks to misrepresent their risk vulnerability.....	8
The mitigation mechanisms adopted by regulators.....	9
The possible solutions.....	11
The future of the EU-wide stress test.....	16
Conclusions.....	17
Bibliography	19
Sitography.....	20

Introduction

The EU-wide stress test exercise is an important supervisory tool employed by the European Banking Authority (EBA) to monitor market developments and assess the resilience of financial institutions, whose outcome also serves as input for the determination of capital requirements in the context of the European Central Bank (ECB)'s Supervisory Review and Evaluation Process (SREP).

This test is conducted following a constrained bottom-up approach, in which banks are allowed to use their internal models to apply the common methodology designed by the EBA, but are subject to a set of constraints, which are conceived to ensure consistency and comparability of results.

Even though stress tests have significantly contributed to the enhancement of financial stability and to the improvement in market transparency in the European Union, these instruments are not free from flaws. Indeed, both the fact that the outcome of stress tests influences supervisory decisions on capital requirements and the fact that a detailed disclosure of their results is required may create incentives for banks to circumvent the actual purpose of the examination. The main problem is that banks may be more interested in showing that they outperform their peers rather than in identifying their realistic risk exposure. Therefore, the examined institutions may exploit their latitude in the application of internal models in such a way as to provide overly optimistic projections.

The methodological constraints imposed on banks under the constrained bottom-up model constitute one possible solution to this problem. However, these assumptions have been criticised for being too restrictive, thus limiting the realism of stress tests. A second way to mitigate banks' incentives to misrepresent their vulnerability to risk is represented by the quality assurance test conducted by supervisors in order to assess the reliability of banks' projections. This supervisory review has proven itself to be an effective system for disciplining banks. Moreover, the disclosure of the results of this top-down assessment may serve as a benchmark to evaluate banks' performance.

This paper aims to provide an analysis of both the benefits and the weaknesses of the actual EU-wide test exercise as well as to suggest how the current model could be improved through a better implementation of the constrained bottom-up method and through a reinforcement of the top-down supervisory scrutiny.

The first part of the paper will present an overview of the EU-wide stress test exercise. Secondly, a description of the constrained bottom-up approach will be provided. The third section will explain how the inclusion of stress tests results in the design of capital regulation as well as the disclosure requirement may create incentives for banks to overestimate their risk resilience. The following part will be devoted to an analysis of the costs and benefits of two possible mechanisms currently implemented by regulators in order to mitigate this problem, namely the methodological constraints included in the bottom-up model and the quality assurance process. This analysis will provide the basis for the suggestion of a set of alternative solutions that should contribute to the limitation of banks' incentives for suboptimal behaviour, which will be presented in the fifth section. The sixth part will describe how the design of the EU-wide stress test is expected to evolve in the future, according to the words of Andrea Enria, Chair of the Supervisory Board of the ECB and former Chairperson of the EBA. Finally, the conclusions will be presented.

Description of the EU-wide stress test

The EU-wide stress test exercise is one of the main supervisory tools employed by the European Banking Authority (EBA) to assess market developments and evaluate the resilience of financial institutions to potential adverse economic events. The ultimate goal of this test is to contribute to the monitoring of systemic risk with the aim of ensuring the stability of the European financial system¹. The EBA regulation gives the Authority powers to initiate and perform stress tests, in close cooperation with the European Systemic Risk Board (ESRB), the European Central Bank (ECB), the European Commission (EC), and national Competent Authorities (CAs)².

Wide-stress tests were originally developed after the 2008 financial crisis and were initially employed to identify the capital needs of weak financial institutions and subsequent needs for recapitalisation. Under that approach, a bank could either “pass” or “fail” the test: banks that did not meet predetermined capital thresholds were considered to have failed the test and had to be recapitalised within a given timeline³.

¹ See <https://www.eba.europa.eu/risk-analysis-and-data/eu-wide-stress-testing>.

² See <https://www.eba.europa.eu/risk-analysis-and-data/eu-wide-stress-testing>.

³ Quagliariello (2019), p. 5.

The EU-wide stress exercise has evolved over time, according to the developments of the market and the European regulatory framework. In particular, the pass/fail approach was overcome in 2016, when the overall progress in banks' financial conditions allowed the focus of regulators to shift from the identification of immediate recapitalisation needs to the assessment of potential vulnerabilities. Since then, stress tests have become a component of the overall supervisory assessment under the ECB's Supervisory Review and Evaluation Process (SREP) and have been used to inform the setting of Pillar 2 capital guidance and requirements⁴.

The EU-wide stress test is a bottom-up exercise, meaning that the EBA develops a common methodology, which is applied by all banks using their internal models⁵. The resilience of a sample of selected banks is assessed under a baseline macroeconomic scenario and an adverse economic scenario, which are designed by the ESRB, in close cooperation with the ECB, CAs, the EBA and national central banks. Furthermore, CAs are responsible for ensuring the correct application of the common methodology and for determining the resulting supervisory actions⁶. Another important aspect of the EU-wide stress test is the full transparency of its results, which have to be exhaustively disclosed in order to enable market analysts to compare the outcomes of the banks involved in the examination.

The constrained bottom-up approach

In general, stress tests can be performed by following either a bottom-up or a top-down approach. In a bottom-up stress test, banks rely on their internal models to apply a common methodological framework prepared by competent authorities, while in a top-down stress test the projections are produced by prudential authorities in a centralised way⁷.

The method adopted for conducting the EU-wide stress tests can be defined as a constrained bottom-up approach, in which banks are allowed to apply the common methodologies developed by the EBA by employing their internal models, but are subject to a set of methodological constraints⁸.

⁴ Enria, (2018), p. 3.

⁵ *2021 EU-wide stress test: Frequently Asked Questions*. (January 29, 2021), p. 1.

⁶ *2021 EU-wide stress test: Frequently Asked Questions*. (January 29, 2021), p. 2.

⁷ Kok, Müllerz and Pancarox (2019).

⁸ See *2021 EU-Wide Stress Test: Methodological Note*. (January 29, 2021), p. 17, for the definition of the "constrained bottom-up" model provided by the EBA.

The main constraint employed in this model is the so-called static balance sheet assumption, which implies that banks must refer to the numbers in their balance sheets at the reference date and are not allowed to perform managerial actions for mitigating the impact of the adverse scenario⁹.

The above-mentioned approach has several advantages. First of all, applying the same methodology to all banks under scrutiny ensures the comparability of results, thus providing a consistent basis for benchmarking. Moreover, allowing banks to apply their internal models should foster their own risk management policies by strengthening their ability to identify areas of vulnerability and by encouraging them to develop their own internal stress-testing models¹⁰.

However, the constrained bottom-up approach is not free from drawbacks. The first problem is that the static balance sheet assumption limits the realism of the exercise, as it ignores the fact that banks may actually take managerial actions as a response to difficult economic circumstances. The second shortcoming of the approach under analysis is that allowing banks to employ their internal models provides them with the possibility to underestimate their vulnerability to adverse market scenarios¹¹.

The incentives for banks to misrepresent their risk vulnerability

Besides representing a useful instrument for monitoring the resilience of European banks, the EU-wide stress test also affects supervisory decisions on banks' capital requirements. Moreover, the full disclosure of bank-by-bank results is required.

Notwithstanding the advantages of these features of stress tests, critics argue that both the bottom-up approach and the disclosure requirement may create incentives for banks to misrepresent their exposure to risk. This could happen because banks may be more interested in displaying a good performance than in identifying actual risks in an adverse scenario¹².

⁹ See *2021 EU-Wide Stress Test: Methodological Note*. (January 29, 2021), pp.16-17, for the detailed presentation of how the "static balance sheet" assumption will be applied in the 2021 EU-wide stress test.

¹⁰ De Guindos (2019), p. 1.

¹¹ De Guindos (2019), pp. 1-2.

¹² See Quagliariello (2019), for the detailed analysis of banks' incentives to misrepresent their risk exposure in the stress tests.

The first aspect to consider is the fact that the ECB uses both the qualitative and quantitative results of stress tests as inputs for the determination of Pillar 2 capital requirements and Pillar 2 capital guidance under the SREP¹³. On one hand, the outcome of the EU-wide stress test provides regulators with a useful empirical basis to take their decisions. On the other hand, banks aiming at minimising the impact of regulatory capital requirements may have incentives to exploit their leeway in the application of their internal models in such a way as to underestimate their vulnerability to adverse economic conditions.

The second controversial aspect is the disclosure requirement, which entails the publication of the risk exposures, the composition of capital and the profitability of the banks involved in the test. The most important benefit of the disclosure requirement is that it helps enhance market transparency in the European Union, where the regulatory framework is still fragmented and only a limited amount of financial data about banks is available to market participants¹⁴. However, the fact that the outcomes of stress tests will be publicly available may lead bank managers to interpret stress tests as “beauty contests” where banks compete in order to obtain a better evaluation from the market¹⁵.

The ambition of achieving superior results in a stress test may have the positive consequence of encouraging banks to improve their risk management policies. For instance, bank managers could adjust their balance sheet numbers through capital increases or disposal of low-quality or non-core assets. Nevertheless, they may implement suboptimal financial policies that increase the probability of performing well in a stress test but at the same time reduce the fundamental value of the bank¹⁶.

The mitigation mechanisms adopted by regulators

The potential incentives that might lead banks to deviate from the true purpose of the EU-wide stress test have been taken into consideration by regulators when designing this exercise. For this reason, they have implemented two systems that should mitigate this problem, namely the methodological constraints imposed on banks under the constrained bottom-up approach and

¹³ De Guindos (2019), p. 3, note 1.

¹⁴ Enria (2018), pp. 5-6.

¹⁵ See Quagliariello (2019), for the description of the “beauty contest” problem and the suggestion of possible solutions.

¹⁶ Quagliariello (2019), p. 6

the quality assurance process conducted after the stress test exercise. This section will analyse both the benefits and the costs entailed by these mitigation mechanisms.

First of all, the constrained bottom-up approach contains a set of constraints aimed at reducing the latitude of banks in the application of their internal models. This method was devised to strike a balance between realism, comparability and conservatism, allowing banks a certain degree of independence in performing risk assessment but at the same time ensuring comparability and conservatism of results¹⁷.

Even though methodological constraints represent an important tool for preventing banks from providing overly optimistic estimates of their resilience to risk, they have been criticised for their excessive rigour and conservatism. Indeed, the main shortcoming of those constraints is that they may result in unrealistic assumptions about the financial data of banks, thus reducing the usefulness of stress tests for the purpose of internal risk management¹⁸.

The main methodological constraint is the static balance sheet assumption, which requires banks to maintain their balance sheet numbers constant with respect to a reference date. This should prevent bank managers from taking actions resulting in a misrepresentation of financial results while the test is being performed. An important advantage of the static balance sheet assumption is that it improves comparability across banks. However, critics argue that this assumption tends to limit the realism of stress tests, since it ignores the fact that banks may take managerial actions as a response to adverse economic events¹⁹. Another factor that reduces the reliability of the static balance sheet assumption is represented by the wave of corporate restructuring, deleveraging and mergers and acquisitions that banks have been facing in recent years²⁰. All in all, as the International Monetary Fund (IMF) highlights in a note concerning its Financial Sector Assessment Program, the application of this assumption can be justified by the desire to decrease the complexity of the stress test exercise by facilitating comparability across banks. Nonetheless, increasing the comparability of firms in the banking industry may reinforce the tendency of banks to provide overly optimistic projections, as it would enable investors to use the results of such tests as inputs for market evaluation²¹.

¹⁷ Enria (2018), p. 6.

¹⁸ Quagliariello (2019), p. 7.

¹⁹ De Guindos (2019), pp. 1-2.

²⁰ Enria (2018), p. 8.

²¹ IMF (2013), p. 17.

The second line of defence against the incentives for banks to circumvent the purpose of the EU-wide stress test is the quality assurance process performed by supervisors at the end of the exercise²². During this supervisory review, the ECB examines the projections submitted by individual banks in order to ensure that they are plausible and reliable. First, the ECB assesses whether the banks' submissions comply with the methodological constraints imposed by the EBA. Second, the Authority compares the banks' projections with the outcomes generated by the ECB top-down stress test and with the submissions of peer banks²³.

The effectiveness of the quality assurance process is highlighted by an empirical analysis conducted by Christoffer Kok, Carola Müllerz and Cosimo Pancarox on a sample of banks participating in the 2016 EU-wide stress test²⁴. The authors suggest that participating in this examination may encourage banks to limit their risk-taking behaviours, due to the tighter scrutiny provided by the quality assurance process. Eventually, the research shows that banks subject to stress tests tend to exploit the weaknesses of the bottom-up approach to overestimate their resilience to market risks, but this outcome can be mitigated through the disciplining effects of the supervisory scrutiny conducted by the ECB at the end of the stress test exercise.

The importance of the quality assurance process is also demonstrated by the fact that, in 2018, the impact of the adverse scenario provided by banks in their first submission of the results was on average 100 basis point lower than the post-quality assurance results²⁵. This shows that, without the ECB's supervisory scrutiny, several banks would underestimate their risk exposure.

The possible solutions

It has been showed that the two key aspects of the EU-wide stress test that might lead banks to misrepresent their actual risk exposure are the fact that the outcomes of the test influence the determination of capital regulation and the fact that a transparent disclosure of the test results is required. Under the constrained bottom-up approach, banks may take advantage of their

²² Quagliariello (2019), p. 8.

²³ Kok, Müllerz and Pancarox (2019).

²⁴ See Kok, Müllerz and Pancarox (2019) for the detailed explanation of how the quality assurance process can limit the risk-taking behaviours of banks and correct thee possible misrepresentation on banks' projections.

²⁵ Enria (2018), p. 9.

latitude in the application of the common methodology developed by the EBA to provide overly optimistic projections of their risk resilience. It can be argued that the most effective disciplining mechanism against this behaviour is represented by the supervisory scrutiny conducted by the ECB after the bottom-up stress test. Nonetheless, this system alone is not sufficient to completely deter banks from circumventing the purpose of stress tests. Therefore, the current testing methodology should be improved through adjustments aimed at reducing banks' incentives to provide biased projections of their risk exposure as well as their possibility to do so.

The first problematic aspect is the link between the results of stress tests and the determination of capital needs. Since banks might be willing to underestimate their risk vulnerability in order to minimise the impact of capital regulation, it may seem reasonable to decouple the determination of capital requirements from the outcomes of stress tests. However, this may not be an adequate solution in practice²⁶. As a matter of fact, regulators cannot set capital requirements arbitrarily. Instead, they have to rely on some empirical evidence obtained through a comprehensive examination of banks' financial positions or as a result of some empirical tests. Since performing a thorough analysis of the financial condition on a sample of banks that is large enough to enable regulators to draw significant conclusions would be too complex and costly, the best solution would be the exercise of supervisory stress tests. Therefore, the incentives towards misrepresentation of risk exposure should be mitigated in a different way.

The second aspect to consider is the transparency requirement. If requiring the public disclosure of the outcomes of stress tests deters bank from providing a realistic representation of their vulnerability to market risk, it might seem beneficial to reduce the level of transparency²⁷. Nonetheless, a lower level of transparency would be detrimental to market participants, since availability of financial data allows investors to make informed decisions. Therefore, the determination of the optimal level of transparency would involve a trade-off between the costs and benefits of disclosure.

Some critics observe that, while transparency is necessary in periods of instability, it may create trade-offs in regular circumstances. For instance, Schuermann argues that supervisors should impose significant disclosure requirements during periods of crisis, while in ordinary times a

²⁶ Quagliariello (2019), p. 9.

²⁷ Quagliariello (2019), p. 10.

more modest disclosure would be appropriate, provided that banks report comprehensively to their own stakeholders²⁸.

Furthermore, an analysis conducted by Goldstein and Sapra²⁹ reveals that disclosing stress test results, particularly at the aggregate level, plays an important role in the promotion of financial stability, since it can provide both bank supervisors and market participants with information that would allow them to exercise discipline on the banks' behaviour. However, the authors highlight the costs associated to the detailed disclosure of information at the banks' individual level.

As far as the form of disclosure is concerned, the results of stress tests can be published on an individual level, in an aggregate fashion, or in ranges grouping banks with similar projections. Alternatively, Quagliariello argues that disclosure could be limited to starting points, without involving tests outcomes, but with a substantial disclosure of the resulting supervisory decisions³⁰.

The third aspect that could be improved is the methodological framework of the EU-wide stress test. Indeed, the constrained bottom-up model allows banks an excessive leeway in the application of their internal models, but also contains a set of constraints that tend to limit the reliability of results.

A research conducted by Niepmann and Stebunovs³¹ indicates that a stable methodology which is applied consistently over time, such as the above-mentioned approach, enables bank to adapt their models in such a way as to minimise their vulnerability to stress tests. Conversely, circumventing a less predictable methodology would be more cumbersome for bank managers. This would imply that European regulators should make changes and adjustments to the stress test method if they aim to limit the possibility for banks to deviate from the purpose of the examination.

Another way to improve the design of the current methodological framework is indicated by Schuermann³². The author suggests running the stress test on multiple scenarios, so as to make

²⁸ Schuermann (2016), p. 135.

²⁹ See Goldstein and Sapra (2014), for a detailed analysis of the benefits and costs of disclosing stress tests results and for a suggestion on how the costs of disclosure could be minimised.

³⁰ Quagliariello (2019), p. 10.

³¹ Niepmann and Stebunovs (2018).

³² Schuermann (2016), pp. 128 ff.

it more difficult for banks to use their internal models to underestimate their exposure to market risk. Moreover, running the test on multiple scenarios would allow comparison of risks for banks with different business models. Supervisors may either design alternative scenarios or require banks to run their own scenarios, provided that at least one of them is able to represent the bank's specific vulnerabilities³³. An approach to stress tests designed in this way would be more complex to implement and its results might be more difficult to explain to the public, but these additional costs would be compensated by the benefits of obtaining additional information about the major risks faced by each individual institution as well as the possible policies that could be implemented to address those risks³⁴.

The adequacy of the constrained bottom-up model could also be improved through the relaxation of the static balance sheet assumption, which would lead to more realistic results and may enable bank managers to enhance their risk-management policies. In this regard, Ong and Pazarbasioglu notice that excluding managerial actions for modifying balance sheet numbers may be useful in periods of crisis to facilitate comparisons, but some dynamic reaction could be allowed in normal times, provided that it is subject to some constraints, clearly outlined and explained to external stakeholders³⁵. A revision of the static balance sheet assumption is encouraged by the IMF as well, as long as specific rules ensure that banks avoid strategies relying on *deus ex machina*, such as the sale of an unprofitable business at a handsome price³⁶.

Although the evolution towards a dynamic balance sheet approach represents a significant change to the methodology applied to the EU-wide stress test, it may reasonably be implemented in the future. Indeed, both Andrea Enria, Chair of the Supervisory Board of the ECB and former Chairperson of the EBA³⁷, and the Vice-President of the ECB, Luis De Guindos³⁸, have recognised the limitations of the current static balance sheet approach. In particular, in a speech delivered in 2018, Enria envisaged a relaxation of this assumption, involving three possible steps. In his view, the first step would be the inclusion of some modelling of the evolution of assets and liabilities in the adverse scenario, which could be left to banks' internal

³³ Quagliariello (2019), p. 10.

³⁴ Quagliariello (2019), p. 11.

³⁵ Ong and Pazarbasioglu (2013), pp. 41 ff.

³⁶ IMF (2013), p. 18.

³⁷ See the following speeches of Enria Andrea: *What we have learnt from EU-wide stress test* (2018) and *The future of stress testing - some further thoughts* (2019).

³⁸ See the speech *The evolution of stress-testing in Europe*, delivered by De Guindos Luis in 2019.

models or dictated by the scenario itself as an aggregate figure. The second and more complicated step would be to allow even more significant changes in the banks' balance sheet structure. The last and more innovative step would be to include in the outcomes of the tests also the managerial actions undertaken by banks in a stressful situation³⁹. The last measure would not only result in additional information to be evaluated for the purpose of the stress test, but would also contribute to the improvement in the internal risk-management policies of banks.

A different and more radical modification to the constrained bottom-up approach would involve the evolution towards a pure bottom-up approach where banks would be allowed to apply their internal models with very limited *ex-ante* constraints, while being subject to a stricter *ex-post* scrutiny⁴⁰. This framework was envisaged in a speech delivered by Andrea Enria in 2018. In his view, banks would run a bottom-up exercise, but they would be subject to a less detailed common methodology and a single common scenario, possibly with additional idiosyncratic shocks or sensitivity analyses that should reflect the individual risk profile and business model of each institution. The results of this test would be made public, but there may be a limitation in the amount of information to be disclosed, leaving the publication of data about banks' exposure to the EBA transparency exercise⁴¹.

The last important way in which the EU-wide stress test methodology could be improved would consist in the reinforcement of the top-down approach, which is preached by both Andrea Enria⁴² and Luis De Guindos⁴³. Enria indicates that a less restrictive bottom-up exercise test could be followed by a comprehensive top-down stress test conducted by the EBA, which would be based on the same common scenario developed for the bottom-up exercise. The results of this test would be used as a benchmark for the quality assurance, while the results of the bottom-up test would still serve as input for determining key supervisory actions⁴⁴. Analogously, De Guindos argues that the top-down model might have a greater importance as a mean for disciplining banks and reducing their incentives to underestimate their exposure to risk. This objective could be reached by publishing the results of the top-down supervisory test

³⁹ Enria (2018), pp. 11-12.

⁴⁰ Quagliariello (2019), p. 11

⁴¹ Enria (2018), pp 12-13.

⁴² See the above-mentioned speech of Enria Andrea (2018).

⁴³ See the above-mentioned speech of De Guindos Luis (2019).

⁴⁴ Enria (2018), p. 13.

performed after the regular bottom-up exercise. Indeed, the mere possibility of the results being made public should encourage banks to produce more reliable estimates of their risk vulnerability⁴⁵.

The future of the EU-wide stress test

Regulators have recognised the current weaknesses of the EU-wide stress test and have expressed their intention to improve the effectiveness of this exercise. In a speech delivered in 2019⁴⁶, Andrea Enria explains how the EU-wide stress test will evolve in the future, becoming more reliable and realistic. According to his words, the EU-wide stress test will be split into three elements: a supervisory view, a bank view, and a macro view. In this way, this supervisory exercise will be able to serve a wide range of purposes: helping supervisors to determine banks' capital requirements, enhancing banks' risk-management policies, supporting supervisory activities, helping regulators and analysts to assess banks' risk profiles, and increasing market transparency.

As far as the supervisory view is concerned, Enria explains that the exercise of the test will still rely on a bottom-up approach, but some of the constraints will be relaxed, especially the static balance sheet assumption. The results of the bottom-up test will then be challenged by authorities through a quality assurance supervisory review, as under the previous methodology. Eventually, the results will be used as the starting point to determine Pillar 2 capital requirements and guidance. For this purpose, banks could be categorised in several buckets according to their capital depletion. Therefore, the new approach will differ from the current model in that there will be a less granular disclosure of data, so that the costs of the supervisory exercise will be reduced.

The bank view will represent an innovative element of the EU-wide stress test. In the new framework, banks will be provided with more freedom in the application of the model developed by the EBA, since they will be allowed to relax some of the constraints, provided that they disclose which assumptions have been relaxed and how. In this way, individual institutions will be able to better account for their specific vulnerabilities and to better predict how the

⁴⁵ De Guindos (2019), p. 2.

⁴⁶ This section is based on the speech of Enria Andrea: *The future of stress testing - some further thoughts* (2019).

adverse scenario would affect their balance sheet. Moreover, banks will have the possibility to revert the results of the supervisory test. Bank-view tests will be subject to two conditions: banks will be required to use sound models and will not be allowed to adjust results for strategic reasons. Lastly, the results of these tests will be published at a highly granular level.

Since the supervisory view and the bank view will be published at the same time, it will be possible for market analysts to compare them. In this sense, the supervisory view will act as a benchmark. This will lead to an enhancement of market discipline, since analysts will be able to assess whether banks have provided a reliable projection of their risk exposure, and significant differences between the bank view and the supervisory view will be investigated.

Another new element of the EU-wide stress test will be the macro view, which will serve as a tool for supplementing the supervisory view with a top-down sensitivity analysis. It should help assess the aggregate robustness of the results of the supervisory test by illustrating how the results might change if the central scenario were modified or different methodological assumptions were used.

Finally, Enria envisages that in a near future it will be possible to develop a top-down approach for the supervisory view too, which is already employed in the United States. According to his words, it is reasonable to expect that these innovations will be implemented after 2022.

Conclusions

This paper has provided a description of the EU-wide stress test, highlighting the importance of this supervisory tool for the purpose of ensuring financial stability and increasing market transparency in the European Union, but it has also analysed the weaknesses of the current methodology.

The main problem is that, in the current framework, banks might have the incentive to misrepresent their actual exposure to risk. This is due to the fact that the outcomes of stress tests influence capital regulation and have to be publicly disclosed. Moreover, stress tests are conducted under a constrained bottom-up approach that allows banks a certain degree of flexibility in the application of the common methodology, thus enabling them to underestimate their actual risk exposure. The constraints included in the constrained bottom-up model are designed to limit the banks' latitude in the application of their internal models, but they involve

some unrealistic assumptions that ultimately reduce the reliability of stress tests results. A more effective way to discipline bank is represented by the quality assurance process conducted by the ECB at the end of bottom-up exercise, but this system alone is not sufficient to completely solve the problem.

Based on analysis of relevant literature as well as the opinion of important Authorities, this paper has suggested a set of possible systems that would contribute to overcome the weaknesses of the current EU-wide stress test. The proposed solutions include a change in the form of disclosure of stress tests results, the relaxation of the constraints contained in the bottom-up approach, and a reinforcement of the top-down supervisory scrutiny performed at the end of the test. Lastly, it has been shown that regulators have actually recognised the flaws of the current test methodology, and have envisaged a set of significant innovations aimed at correcting them. It can be concluded that, if the appropriate improvements are implemented, the importance and the effectiveness of the EU-wide stress will increase in the future.

Bibliography

- *2021 EU-wide stress test: Frequently Asked Questions*. (January 29, 2021). Available at <https://www.eba.europa.eu/risk-analysis-and-data/eu-wide-stress-testing>.
- *2021 EU-Wide Stress Test: Methodological Note*. (January 29, 2021). Available at <https://www.eba.europa.eu/risk-analysis-and-data/eu-wide-stress-testing>.
- De Guindos Luis (2019), *The evolution of stress-testing in Europe*. Speech delivered at the annual US-EU Symposium organised by the Program on International Financial Systems, Frankfurt am Main. Available at <https://www.bis.org/review/r190904j.pdf>.
- Enria Andrea (2018), *What we have learnt from EU-wide stress test*. Speech delivered at the National Bank of Romania. Available at https://www.eba.europa.eu/calendar%3Fp_p_id%3D8%26_8_struts_action%3D%252Fcalendar%252Fview_event%26_8_eventId%3D2453933.
- Enria Andrea (2019), *The future of stress testing – some further thoughts*. Speech delivered at the Annual Research Workshop “The future of stress tests in the banking sector – approaches, governance and methodologies”, organised by the EBA, in Paris. Available at <https://www.bankingsupervision.europa.eu/press/speeches/date/2019/html/ssm.sp191127~2f9bdabff9.en.html>.
- Goldstein Itay and Hareh Sapra, (2014), *Should Banks' Stress Test Results be Disclosed? An Analysis of the Costs and Benefits*, Foundations and Trends in Finance, 8, issue 1.
- IMF, *European Union: Publication of Financial Assessment Programme Documentation, Technical Note on Stress Testing of Banks* (2013). Available at <https://www.imf.org/en/Publications/CR/Issues/2016/12/31/European-Union-Publication-of-Financial-Sector-Assessment-Program-Documents-Technical-40396>.
- Kok Christoffer, Müllerz Carola and Pancarox Cosimo (2019), *The disciplining effect of supervisory scrutiny on banks' risk-taking: evidence from the EU-wide stress test*. Available at https://www.ecb.europa.eu/pub/financial-stability/macprudential-bulletin/html/ecb.mpbu201910_3~7da43c7c16.en.html
- Niepmann, Friederike and Stebunovs, Viktors (2017), *Modeling Your Stress Away*. Available at SSRN: <https://ssrn.com/abstract=3089817>.

- Ong Li Lian and Ceyla Pazarbasioglu (2013), *Credibility and Crisis Stress Testing*, IMF Working Paper, WP/13/178. Available at <https://www.imf.org/external/pubs/ft/wp/2013/wp13178.pdf>.
- Quagliariello, Mario (2019), *Are Stress Tests Beauty Contests?* European Banking Authority Research Paper No. 4. Available at <https://ssrn.com/abstract=3758401>.
- Schuermann Til (2016), *Stress Testing in Wartime and in Peacetime*, in Ronald W. Anderson (ed.), *Stress Testing and Macroprudential Regulation: A Trans-Atlantic Assessment*, CEPR eBook.

Sitography

- <https://www.eba.europa.eu/risk-analysis-and-data/eu-wide-stress-testing>.
- <https://www.eba.europa.eu/risk-analysis-and-data/eu-wide-transparency-exercise>.

