Banking and COVID: Past, Present, and Future

by Giorgio Barba Navaretti¹, Giacomo Calzolari², Alberto Franco Pozzolo³

1. The function of banks in emergency

"This time banks are not the problem but part of the solution." This is a statement with several implications and inherent meanings, that we explore in-depth in this issue of European Economy (EE).

First, the absence of wrongdoing. This is an economic crisis that started as an exogenous shock (the pandemic) and not because of financial mismanagement by banks and financial companies: the plaintiff is emptyhanded this time. In the aftermath of the great financial crisis (GFC), the leitmotif was that banks' profits were private and their losses public, as many had to be bailed out by taxpayers. The subsequent reforms in regulation and supervision, the steep rise of capital requirements, and the restrictions on public bailouts were precisely based on the principle that also losses had to be private, borne mainly by shareholders and junior creditors with the ultimate aim to reduce moral hazard in lending and financial allocations. This time, not only the initial shock was exogenous to the banking sector, but it also happened at a time when the industry was acting in good health on safe grounds, as clearly emphasised by Campa and Ouagliariello in this issue.

^{1.} University of Milan.

^{2.} European University Institute.

^{3.} Roma Tre University.

^{4.} Statement by the General Manager of BIS Agustín Carstens in his interview with Martin Wolf at Financial Times - The Global Boardroom 2nd Edition: Shaping the recovery, 13 November 2020 and also by Felix Hufeld, then the President of the Bafin, the German financial regulator, in June 2020.

Second, the solution. Banks were crucial in channeling funds to firms and families, indeed so in Europe. Loans to non-financial corporations and households rose substantially in most EU countries during the first half of 2020, as firms needed working capital to withstand a steep reduction in sales and started amassing liquidity as a safety measure, given the remarkable rise in uncertainty (as thoroughly reported by Falagiarda et al. in this issue). Moreover, banks granted moratoria and considerably extended the duration of outstanding exposures. Bank loans also increased in the US, even though firms relied more on the issuance of corporate bonds than their European counterparts. According to Darmouni and Siani in this issue, both investmentgrade and high-yield markets reached historical heights after March 2020. Yet, small firms still relied on bank loans. No other economic or financial, or public institution would have been equally pervasive to reach the broad public of firms and households like banks while being thoroughly regulated and supervised to assure the correct implementation of a centrally coordinated nation-wide and EU-level action.

Third, being able to *afford* to be the solution. As argued, banks were sufficiently capitalised, liquid, and well managed at the outburst of the pandemic (at least a large number of them) to be able to expand their assets without an excessive depletion of prudential capital. Also, because of the restrictions in distributing dividends and because of the moratoria extended to loans, Tier 1 capital, liquidity ratios, and the share of non-performing loans all improved during the crisis (as all the tables and figures reported in the Number section clearly illustrate, and as also argued in the papers by Angeloni and Campa and Quagliariello in this issue).

Fourth, this was possible because banks are subject to strict *regulations*, in Europe under a common regulatory framework. This had a double advantage. First, the quality of banks' balance sheets and the extent of their ability to act were well known to the authorities. Second, regulatory authorities knew there were sufficient margins to release many of the prudential provisions of the pre-COVID-19 regulatory framework (e.g., capital buffers) and to introduce some ad hoc prudential measures, such as the restrictions in the distribution of dividends. And also, there was political consensus to do so. Consequently, it was possible to launch a public-private joint action between supervisory authorities, central banks, governments, and the banks themselves, which

were at the forefront as the final actors and the enablers of the support operations. Banks would not have been able to act on similar grounds and to a similar extent in a pre-2009 environment. A tighter prudential regulatory framework was essential in creating the preconditions for banks' "social" action. Also, this could not have happened in Europe if there had not been a Banking Union (although yet to be completed). Ring-fencing and uncoordinated supervisory procedures would have prevented a swift action under comparable conditions within the Union.

Fifth, being *part* of the solution. For well capitalised and healthy that they were, banks could have never been a solution without several levers of extensive public support: massive liquidity from central banks; extensive public guarantees on new loans; comprehensive regulatory responses, allowing banks to use their capital, liquidity, and countercyclical buffers; suspension of State Aid rules. In Europe, no such action could have been carried out in a pre-2009 environment and in the aftermath of the financial crisis. Governments could not have enacted expansionary measures of support and increased public debt without a massive program of purchase of government bonds by the ECB. At the time, there was no, and there would not have been political consensus for the ECB to carry out a quantitative easing (QE) program first and then the Pandemic Emergency Purchase Program (PEPP). Also, without a Banking Union, it would not have been possible to carry out a coordinated action throughout Europe and also construct sufficient political consensus to soften the prudential requirements set up after the GFC and the Sovereign Debt Crisis and use them countercyclically.

But the next critical challenge is to avoid the solution becoming a problem. For banks to act as responsible social actors during the pandemic, it was necessary, as argued, to considerably smooth the existing regulatory framework. Yet, such a framework was essentially designed to avoid moral hazard, when the banks were indeed the problem: i.e., to provide the right incentives to avoid irresponsible economic behaviour and potential episodes of insolvency. Future problems will be less likely if banks during the pandemic have acted as both economically and socially responsible actors. For example, if the standards applied to the allocation of loans backed by a state guarantee have been adequately stringent. Or if credit forbearance has been granted only to solvent borrowers. Hence at the moment we do not know if banks have

carried out economically responsible actions even in the absence of adequate regulatory incentives to do so.

Clearly, to avoid the solution becoming a problem, a crucial aspect is the timing of the steps to go back to normality, which needs to be phased with the evolution of the pandemic and the uncovering of its effects. The legacy of the crisis, the exit strategy, the long-term impact on the banking and financial sectors, and what we have learned from a regulatory perspective are the main issues discussed below.

2. The legacy of the crisis and the exit strategy: notes of caution

The aftermath of the pandemic.

The legacy that the pandemic crisis will leave on the banking sector cannot be underestimated. As argued above, the size and scope of policy interventions have been pervasive, including: (i) *monetary policy measures*, such as ECB's Targeted Long-Term Refinancing Operations III (TLTRO III) and Pandemic Emergency Purchase Programme (PEPP); (ii) *fiscal policy measures*, such as national public guarantee schemes; (iii) *prudential and supervisory measures*, releasing capital and liquidity buffers, easing the classification of loans and their risk provisioning, and allowing for moratoria on lending. While these measures have been crucial to contrast the effects of COVID-19, they will also have substantial short- and long-run consequences on the banking sector and the economy as a whole.

The moral hazard problems at the core of the debate after the GFC appear not to be an issue in the current situation. Schnabel (2020) explicitly said that "the pandemic has not raised concerns of moral hazard." Of course banks had no bearing in the economic crisis triggered by the pandemic and were instrumental in supporting households and firms. However, it is not clear whether credit allocation has been biased towards riskier creditors by lifting several prudential conditions. At the same time, cheap credit, moratoria on bank loans, and government guarantees are helping firms to survive, but at the cost of increasing their indebtedness. When support measures will finally be lifted, many borrowers will find themselves more indebted and in a direr condition than before the crisis.

Expansionary monetary policies and government guarantees make it very easy for banks to grant credit, as it is necessary to contrast the pandemic. But they also raise the risk that banks lend to zombie firms, which most likely will not be able to pay back their debts, and the survival of which causes significant distortions in the allocation of economic resources. This would hamper the reorganization of economic activities necessary for an effective process of creative destruction to unfold (Beck et al., 2021). Not all banks have the same incentives to lend to zombie firms, and the available evidence shows that the weaker and less capitalized banks are precisely those that are more likely to do so (Dursun-de Neef and Schandlbauer, 2020; Schivardi et al., 2021).

Like all crises, also the pandemic will have a cleansing effect. The acceleration of some trends that were already unfolding will cause a substantial reshaping of profitability across and within economic sectors. Strong firms will sail such rough waters and possibly strengthen their position, while weaker firms will be in trouble. Entrepreneurs should base their decisions on realistic assumptions about their business perspectives, avoiding leveraging on the availability of easy credit to bet for resurrection.

Public spending has increased substantially all over the world in the last year. According to the IMF, the ratio of government debt to GDP in advanced economies has soared by 16.3 percentage points between 2019 and 2020, to 120.1 per cent (by 12.9 per cent in the euro area, to 96.9 per cent). Contingent liabilities related to the guarantees offered on bank loans (see Figure 10, in the Numbers section) may cause a further increase in the coming years.

Expansionary fiscal policies were needed to contrast the effects of the pandemic, and they will undoubtedly be effective in the short run, given the large output gap and the depressed aggregate demand. But government policies need to have a sufficient long-term perspective and the recovery must be sustainable, protracted and sizeable enough for firms to pay back their debts without triggering government guarantees. Adding further concerns to this scenario, moratoria are more widespread in countries with a higher debt-to-GDP ratio (see Figure 17, in the Numbers Section). If government spending during the pandemics and the recovery programs in the aftermath had no impact in the longer term, the unfolding of a new doom-loop between banks and sovereigns might become a possible scenario in the coming years.

Closely related is the issue of NPLs. While their level is still low, they might rise substantially. As reported by Campa and Quagliariello in this issue, the volume of loans classified under IFRS 9 stage 2 – those that are still performing but for which there was a significant increase in credit risk – increased by 24% in 2020. As argued by Angeloni in this issue, banks should set aside adequate provisions to cover for credit risk and keep screening their clients even when government guarantees cover the loans they grant. This is even more so because of the link between NPLs, moratoria, capitalization and profitability: the country share of loans under moratoria which are classified as Stage 2 is higher than the average share of loans classified as Stage 2 (see Figure 12, in the Numbers section), the share of loans under moratoria is larger in countries with higher NPL ratios (Figure 16) and where banks have lower Tier 1 capital ratios (Figure 18) and profitability (Figure 19). Careful attention must thus be paid that banks do not postpone uncovering their losses.

To this aim, asset management companies can be an effective tool to make it easier to sell NPLs at a fair price, avoiding inflated losses because of thin markets or fire sales (which, in turn, could hamper the incentives to uncover them), as suggested by Campa and Quagliariello and Beck in this issue (building on the proposal made by Enria, 2017, in a previous issue of this journal).⁵

The pandemic crisis also leaves us with a less stringent regulatory framework than what was agreed after the GFC. While this was necessary, an exit strategy must be devised. As argued by Beck in this issue and Beck et al. (2021), the right balance must be found between acting too soon, thus causing a credit crunch during the recovery phase, and acting too late, thus increasing the risk of moral hazard. To help banks and firms make credible budget plans for the coming years, a "forward regulatory guidance" should be provided, setting a clear path ahead. Given current and future uncertainties, such guidance would be more credible and effective if it were state-contingent (i.e., based on economic conditions) rather than time-time contingent (i.e., based on fixed dates in the future).

^{5.} Although NPLs which will derive from the pandemic are not a legacy of past misbehaviours by bankers, as in the case of GFC, the proposal is nonetheless encountering some opposition at the European level, as argued by Angeloni in this issue. For a thorough analysis of AMCs, see also Brescia Morra et al. (2021), Lamos and Lamandini (2021) and Avgouleas et al. (2021).

^{6.} Andrea Enria (2021) in a recent speech suggested a mixed strategy. He argued for the need to move ahead as planned for completing and implementing the Basel III framework on capital requirements, and at the same time grant other elements of flexibility, like for the Pillar 2 capital requirements.

Long-run implications

All the measures described above aim at tackling the short-run legacies of the pandemic crisis, setting the road for a stronger recovery and a sounder financial sector. But long-run legacies of the crisis will also unavoidably affect governments, banks, and firms alike.

Many governments will need to find a way of reabsorbing their massive debts, especially when central banks will phase out the QE. Firm over-indebtedness, especially with banks, will also be a major problem in the medium-run, since it will harm their investment ability. Even more so in the highly productive but riskier activities necessary to reach sustained economic growth.

During the pandemic, some firms have found easier access to the bond market than in the past, as shown by Darmouni and Siani, in this issue (partly thanks to the effects of central bank purchases). Also, in Europe, the number of firms issuing bonds has increased and their average size has declined (Darmouni and Papoutsi, 2020). Bond financing may become a problem if firms cannot roll-over their debt when the next crisis comes.

For firms to have more extensive access to arm-length financing, a larger number of investors should be willing to change their preferences towards higher risk-return strategies. This would be a crucial step to foster the reallocation of activities needed to recover from the COVID-19 pandemic and face future challenges, such as environmental problems. While all obstacles should be removed to facilitate firms' access to equity markets, including SMEs, a renewed cultural approach to financial investments is also needed. Policies helping firms to switch from government guaranteed bank debt to equity financing, for example along the lines of the proposal made by Boot et al. (2020), would help in this direction. Set within the Capital Market Union framework, their effectiveness would be further enhanced (see Barba Navaretti et al., 2019).

Banks could also play a more active role in helping firms to access the financial markets directly. Margins on traditional banking activities are shrinking due to the current low-interest environment and increased competition from non-bank financial intermediaries, such as in the payment business.⁷ A large amount of liquidity available in the financial markets may

^{7.} As suggested by the results of Bolt et al., in this issue, competition in the payment business is likely to increase in the coming years, due to the acceleration in the diffusion of digital payments during the pandemic and the likely introduction of central bank digital currencies.

give way to fintechs to increase lending, for example, through peer-to-peer platforms. Since investment banking has higher margins than traditional lending, underwriting services should be seen by banks as a profit opportunity, rather than as an activity that reduces their loan portfolios' size.

Also, the evolution of the entire financial intermediation sector, with new players such as fintechs and bigtechs, will undoubtedly push pressure on banks' profitability. Fintechs had apparently a temporary step-back during the pandemic. This is partly related to the fact that many of these new players like peer to peer landing platforms had no access to relief measures and funding sources and that the public preferred to fly to safety in hardship (see Davies in this issue).

Possibly this has been a temporary accident, as fintechs were not ready yet and diffused enough in Europe to act pervasively during the crisis. But they may come back soon, given the earlier observed speed in the expansion of their business. Also, not all activities faced a set-back. Bolt et al. in this issue have shown that within a few months in lockdown individual payments' habits have changed and probably permanently at a speed that usually would have taken several years.

The low profitability of traditional banks cannot last forever, with very low, if not still declining, book-to-value records for European banks. The articles in this issue of European Economy have discussed how banks can regain profitability (see Davies). Overall, there are not so many options available. A combination of traditional approaches, such as cost containment, national and cross-border M&As, and more transformative changes are the likely outcomes.

Excess capacity is still a characteristic of some, although not all, domestic banking sectors in Europe. In some countries, the concentration in the banking sector is already high (notably Spain), and there are narrow margins for other M&As. In others, there are options, notably in Germany and Austria, and also in France and Italy. But in this period of uncertainty with an unclear picture on the extent of future NPLs, the value of banks' assets is uncertain and difficult to assess.

^{8.} Market capitalization of Apple in 2018 was roughly half the combined European listed banks' capitalization. In 2020, the situation is reversed with Apple now valuing more than the double of the entire European banking sector.

 $^{9. \} See \ https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200608_ssi_table~3054d55051.en.pdf$

Also cross-country M&As could help to boost banks' efficiency, and they would be an interesting way forward also in light of the hopeful completion of the Capital Markets Union. But, as highlighted by Davies in this issue, also, in this case, the uncertainty in the value of assets, the yet uncompleted Banking Union (a still missing European Deposit Insurance Scheme) and some potential political opposition, higher than usual in these COVID times, may hamper this pattern in the short/medium term.

Another source of efficiency can come from the adoption of digital technologies, especially for customer engagement applications and the use of artificial intelligence and Big data that can help in credit allocation and asset management modelling. Adopting transformative digital technologies not only opens different sources of profitability but also a re-organization of the banking activities, with a rebalancing of revenues towards non interest based sources (fees and commissions), a useful shift in a negative interest rates environment.

Financial intermediaries would be more of a matching entity, that gains when a transaction takes place. Bigtechs have a similar business model where in many cases profits come from flat-rate subscription fees and the ability to retain customers. The current banking business model is very far from all this, but it could be now the right moment to move more in this direction. Yet, the pace of adoption rate of these technologies by traditional banks is not of the speediest. In this respect, as argued in an earlier issue of this journal on fintechs, banks may rely on third parties such as cloud computing for data storage and analysis rather than developing these technologies.

For regulation and supervision, this will be a process to monitor closely. If regained profitability may stabilize the banking sector, a new business model may come with different risks. It has been shown, for example, that relying more on fees enhances the operating risk of banks.¹⁰ Also, as regulators have already noted, outsourcing crucial banks' activities to third parties implies new risks.

^{10.} See DeYoung and Roland (2001) and more recently Köhler (2014).

3. What have we learnt? Rules as an anticyclical tool and the need for more European integration

Drawing conclusions on the effects of the pandemic on banking and financial markets at this stage is too early. However, the papers in this issue of European Economy help us identify some early observations about what we have learned.

The COVID is an unfortunate and prolonged stress test for the European banking sector and the regulations approved after the GFC, although the presence of unprecedented market interventions confound the test. We have learnt that rules have to be implemented with sufficient flexibility. They can work as powerful anticyclical measures. Using the available margins for releasing capital, liquidity requirements and State-aid rules has been essential to shelter as much as possible companies and households from the worst consequences of the pandemic.

As argued in the papers by Campa and Quagliariello, by Davies, and by Falagiarda et al., adequate capitalization levels were effective in fostering banks' resilience. However, different banks in different countries will sail through the crisis in very different conditions. How they will exit it will depend not only on the quality of their loan portfolios and on their level of capitalization, but also on how their domestic countries have been hit by the pandemic: the severity of the lockdowns, the sectors of exposure, the effectiveness of the support measures, the state of the public finances etc.

In this framework, it will be difficult not to consider that the process of recapitalization initiated after the GFC was still incomplete. Rescuing banks in a post-COVID-19 banking crisis, if needed, will be just an act of realism: as it turned out to be necessary after the GFC, it would be even more so when the cause of the banking crisis is an exogenous shock like the pandemic.

In light of this, one could try to understand what would have been the COVID-19 crisis had it taken place before the Banking Union, and also what are the challenges ahead for the architecture of European banking supervision and regulation.

A first issue concerns the Single Resolution Mechanism. This was meant to reduce the risk of bail-out and the vicious cycle between banks and sovereigns. However, the bail-in of 8% of a bank's balance sheet (contained in Banking

Recovery and Resolution Directive, to access the Single Resolution Fund) has never been applied, de facto. Several reasons can explain why this Mechanism has not been used so far (see among other Dewatripoint et al. Vox 2021).¹¹

What will happen now, in the aftermath of the COVID-19 crisis? In principle, hard hit and undercapitalized banks in need of recovery would face the 8% bail-in rule. However, given the current post-COVID-19 conditions, governments would likely invoke the financial stability exemption to rescue their banks. Especially if the pandemic evolves into a systemic rather than an idiosyncratic crisis involving more than a small number of banks, as argued by Beck in this issue. Paradoxically, this could lead to a claim of the irrelevance of the Single Resolution Mechanism - aside from the ex-ante disciplining effect on banks of the threat of its application. This would be an ill-judgement, given the extreme and exceptional conditions we are sailing through, yet it would certainly call for some deep rethinking on how to use public funds in rescuing banks in troubles within a common European framework.

A different perspective emerges if we instead consider jointly the Single Supervisory Mechanism and the Single Rulebook. If these two critical elements of the Banking Union had not been available, then probably the current situation, and the future, would be definitely darker. As we have seen, the increased capital requirements are now paying off. We can claim that, at least so far, even in the case of undercapitalized banks, they allowed for buying time for the public hands to support the economies, without having to worry too much for the banking sector, as far as the lockdowns will not continue in 2022. Also, the banking Union offered a framework for coordinating actions for granting the necessary flexibility in prudential requirements across the Union.

From the COVID-19 crisis we have also learned that it is not true that the only missing piece in the Banking Union is the European Deposit Insurance Scheme. There is still a lot to do in terms of coordination. As mentioned by Campa and Quagliariellio, payment moratoria and public guarantee schemes were launched from governments in a not sufficiently coordinated manner and significantly differed in terms of deadlines, coverage, and conditionality, notwithstanding the efforts of the ECB. This lack of coordination will impact the post-COVID-19 life of banks in Europe.

^{11.} https://voxeu.org/article/urgent-reform-eu-resolution-framework-needed

We also lack a functioning European AMC to deal with NPLs, as mentioned by Angeloni. The current European plans will most likely not materialize in time, and, retrospectively, we missed an occasion in the last phase of the GFC to introduce this tool. Had it been available now, this tense period when NPLs haven't realized yet, but everybody predicts they will, would have been less haunted by uncertainty.

And we further lack a convincing framework for cross-border banks. This is not a detail. As we argued above, these banks could be a solution for the current situation as a driver of the efficiency of the European banking sector. However, cross-border mergers are unlikely, given the current conditions. Political pressure might oppose such mergers for fear of losing control of national banking systems. Also, the highly uncertain environment in case of resolution of a pan-European bank is a formidable impediment for a cross-border merger. As in the past, the difficulty here is to a conflicting interest of home and host jurisdictions. The Single Supervisory System has made cross-border European banks more likely, but it has not yet lifted several still existing impediments.

As we have argued many times in this journal, a further and stronger integration of European banking and capital markets is a crucial way to improve the banking sector in Europe and certainly for a rapid recovery from the dreads of the pandemic.

References

Angeloni, I. (2021). Non-performing loans: an old problem in a new situation. European Economy – Banks, Regulation, and the Real Sector, this issue.

Avgouleas, E., Ayadi, R., Bodellini, M., Casu, B., De Groen, W.P., and Ferri, G. (2021). Non-performing loans - new risks and policies? What factors drive the performance of national asset management companies? European Parliament. Available at: https://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL_STU(2021)651386 (Accessed on May, 6, 2021).

Barba Navaretti, G., Calzolari, G., Ottaviano, G., and Pozzolo, A.F. (2019). Capital Market Union and Growth Prospects for Small and Medium Enterprises. Development Working Papers 449, Centro Studi Luca d'Agliano, University of Milano. Available at: https://ideas.repec.org/p/csl/devewp/449.html (Accessed on May, 6, 2021).

Beck, T. (2021). Banking and COVID-19 – through the crisis and beyond. European Economy – Banks, Regulation, and the Real Sector, this issue.

Beck, T., Bruno, B., and Carletti, E. (2021). When and how to unwind COVID support measures to the banking system? European Parliament. Available at: https://www.europarl.europa.eu/Reg-Data/etudes/IDAN/2021/659646/IPOL_IDA(2021)659646_EN.pdf (Accessed on May, 6, 2021).

Bholat, D., Thew, O., and Gharbawi, M. (2021). How Has the Covid-19 Crisis Impacted the Use of Machine Learning and Data Science in UK Banking? European Economy – Banks, Regulation, and the Real Sector, this issue.

Boot, A., Carletti, E., Kotz, H.H., Krahnen, J.P., Pelizzon, L., and Subrahmanyam, M. (2020). Corona and Financial Stability 4.0: Implementing a European Pandemic Equity Fund. VOXEU – CEPR. Available at: https://voxeu.org/article/implementing-european-pandemic-equity-fund (Accessed on May, 6, 2021).

Brescia Morra, C., and Guaccero, A., Pozzolo, A.F., Rojas Elgueta, G., Vardi, N., and Zoppini, A. (2021). Non-performing Loans - New risks and policies? What factors drive the performance of national asset management companies? Mimeo, Roma Tre University.

Campa, J.M., and Quagliariello, M. (2021). Lessons from the regulatory response to the Covid-19 crisis. European Economy – Banks, Regulation, and the Real Sector, this issue.

Cartens, A. (2020). Central bank plans to create digital currencies receive backing. Financial Times. Available at: https://www.ft.com/content/428a0b20-99b0-11e9-9573-ee5cbb98ed36 (Accessed on May, 6, 2021).

Darmouni, O., and Papoutsi, M. (2021). The Rise of Bond Financing in Europe. SSRN Working Paper. DOI: http://dx.doi.org/10.2139/ssrn.3748002

Darmouni, O., and Siani, K.Y. (2021). Corporate Bond Issuance and Bank Lending in the United States. European Economy – Banks, Regulation, and the Real Sector, this issue.

Davies, H. (2021). The European Banking Union: Challenges ahead. European Economy – Banks, Regulation, and the Real Sector, this issue.

Dewatripont, M., Reichlin, L., and Sapir, A. (2021). Urgent reform of the EU resolution framework is needed. VOXEU – CEPR. Available at: https://voxeu.org/article/urgent-reform-eu-resolution-framework-needed (Accessed on May 6, 2021).

DeYoung, R., and Roland, K.P. (2001). Product mix and earnings volatility at commercial banks: Evidence from a degree of total leverage model. Journal of Financial Intermediation, 10 (1), 54-84. DOI: https://doi.org/10.1006/jfin.2000.0305

Dursun-de Neef, Özlem, H., and Schandlbauer, A. (2020). COVID-19 and Zombie Lending of European Banks (March 24, 2021). Available at SSRN: https://ssrn.com/abstract=3681937 or http://dx.doi.org/10.2139/ssrn.3681937 (Accessed on May, 6, 2021).

Enria, A., Haben, P., and Quagliariello, M. (2017). Completing the Repair of the EU Banking Sector- A Critical Review of an EU Asset Management Company. European Economy – Banks, Regulation, and the Real Sector, 2017.1, 59-70.

Falagiarda, M., and Petra Köhler-Ulbrich, P. (2021). Bank lending to Euro area firms – What have been the main drivers during the COVID-19 pandemic? European Economy – Banks, Regulation, and the Real Sector, this issue.

Köhler, M. (2014). Does non-interest income make banks more risky? Retail- versus investment-oriented banks, Review of Financial Economics, 23 (4), 182-193. DOI: https://doi.org/10.1016/j.rfe.2014.08.001

Ramos, D., and Lamandini, M. (2021). Non-performing Loans - New risks and policies? What factors drive the performance of national asset management companies? STUDY Requested

by the ECON committee of the European Parliament. Available at https://www.europarl.europa.eu/RegData/etudes/STUD/2021/645734/IPOL_STU(2021)645734_EN.pdf (Accessed on May, 6, 2021).

Schivardi, F., Sette, E., and Tabellini, G. (2021). Credit Misallocation During the European Financial Crisis. The Economic Journal, ueab039, DOI: https://doi.org/10.1093/ej/ueab039

Schnabel, I. (2021). The sovereign-bank-corporate nexus – virtuous or vicious? European Central Banks Speech. Available at: https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp210128-8f5dc86601.en.html (Accessed on May 6, 2021).