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THE REGULATORY CYCLE IN BANKING: WHICH LESSONS FROM THE U.S. EXPERIENCE? (FROM THE DODD-FRANK ACT TO COVID-19)

by Maurizio Trapanese[1]

Abstract

This paper analyses the interactions between financial regulation and crises with reference to the experience of the United States in the period after the global financial crisis up to the Covid-19 emergency. In the last few years, a new regulatory system for large banks has arisen in the U.S., reversing some elements of the Dodd-Frank Act and introducing deviations from the international rules. This approach is also confirmed by some of the measures adopted in response to Covid-19. If this trend were to spread to other jurisdictions, the globally harmonized approach to regulation could break down. In the current exceptional circumstances as well, the international standards must not be breached, as they provide the resilience needed to sustain lending to the economy, and to keep banks safe. With the memory of the global financial crisis fading and the long post-crisis economic expansion coming to an end, the pressures to dilute the G-20 rules could grow stronger. The importance of maintaining a consistent approach to banking regulation needs to be emphasized.

JEL Classification: F53, G01, G20.
Keywords: financial crises; international regulation.
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[1] Bank of Italy. Directorate General for Economics, Statistics and Research.

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BOXES

1. Objective of the paper[1]

Central banks and supervisory authorities are adopting a number of measures to deal with the unexpected situation caused by COVID-19 and its economic consequences. At the global level, the Financial Stability Board (FSB) and the main standard-setting bodies have encouraged authorities and financial institutions to continue to provide access to funding for market participants, firms and households, and to ensure that capital and liquidity are available in the financial system.[2] Many FSB jurisdictions have taken action to release available capital and liquidity buffers, in addition to actions to support market functioning and accommodate business continuity plans. In the European Union (EU), important decisions have been taken to reduce the operational burden on banks and to allow them to focus on their critical functions.[3]

The overall policy standpoint emerging so far is that - in order to identify relief options and to ensure that banks continue to support lending to the economy - both authorities and banks should make full use of the degrees of flexibility already embedded in the current rules, rather than envisaging forms of deviation from the regulatory standards in place.[4] At the same time, financial regulators have been confronted with requests from academics and industry asking them to take the necessary steps to ease or even suspend prudential standards as a necessary policy response to offset the shock caused to the economy by the COVID-19 pandemic.[5]

A new debate has emerged on the role of financial regulation in response to economic fluctuations. This issue has long received the attention of the authorities responsible for financial stability as well as of academic scholars, especially in periods of major financial distress.

According to Visco (2013), cyclical patterns in public policies' attitude towards finance have constantly emerged in history, determined by the conditions of financial systems and by the

[1] I wish to thank Gabriele Bernardini, Pietro Antonio Catte, Marco Giornetti, Anna Marra and Raffaele Tartaglia Polcini for their useful comments and suggestions on earlier versions of this paper; any errors and omissions remain my own responsibility. The opinions expressed in this paper are those of the author and do not necessarily represent the views of the Bank of Italy.

[2] FSB, Press Release, 'FSB coordinates financial sector work to buttress the economy in response to COVID-19', March 20, 2020.

[3] See the several press releases and policy announcements available on the websites of the European Banking Authority (EBA) and of the Single Supervisory Mechanism (SSM) of the European Central Bank (ECB), as well the decisions adopted by the national competent authorities in March and April 2020.

[4] FSB, 'COVID-19 pandemic: Financial stability implications and policy measures taken', April 2020.

[5] Angeloni, I., 'European bank regulators aren't yet doing what it takes', available at Vox.eu.org, March 2020.

fluctuating political debate about the intervention of the state in the economy.[6] After World War II, the mainstream view was that economic forces *per se* were unable to correct market failures; consequently, there was a need for the state to intervene to ensure a smooth functioning of the economy (and finance). The tide turned in the 1970s, when the public debate shifted its focus to government failures, after public policies proved unable to prevent high inflation combined with high unemployment and there was a push to reduce the scope of state intervention in the economy. In the years that followed, financial innovation and technological progress helped create the conditions for a strong process of financial deregulation. This trend was only reversed with the Global Financial Crisis (GFC) of 2007-08, which triggered a move towards reregulation at the global level.

A significant amount of academic research finds that there is a pattern of regulatory changes that tends to repeat itself during economic cycles. Regulatory policies have the potential to behave procyclically if and when they contribute to credit expansion and the overvaluation of asset prices during booms, while increasing credit restrictions and depressing asset values during busts. In the same vein, financial supervision is procyclical when oversight is relaxed during a boom and reinforced during the subsequent bust, with effects on the real economy that, when cumulated, end up reinforcing the underlying trends.

The most significant financial crises of the past have occurred after periods during which the prevailing policy approaches had diminished the degree of stringency of financial regulation and supervision with the aim of fostering credit to the economy. Crises and major regulatory reforms eventually reverse the policy stances previously adopted. As a result, the financial regulatory framework is overhauled and new authorities, with new powers and tools, are established.

Several explanations have been put forward for such a regulatory cycle. First, this pattern is determined by financial and technological innovations, which tend to erode the capacity of regulators to keep the same degree of stringency over time as the financial system evolves; the tendency for risks to migrate away from the regulated parts of the system to less regulated parts also plays a part. Second, there is the mechanism of regulatory arbitrage: one jurisdiction tries to attract financial business by loosening standards and rules, determining an imitation process in other jurisdictions that can last for years. Third, there is the tendency to dismiss past events as irrelevant, that is to believe that 'this time is different', meaning that another crisis is unlikely to happen, at least with the same serious consequences.

After the GFC, the reform of banking and financial regulation was the centerpiece of the post-crisis financial repair coordinated internationally. The events of those years contributed

[6] Visco, I., 'The financial sector after the crisis', Lecture by the Governor of the Bank of Italy at the Imperial Business Insights, Imperial College, London, March, 2013.

greatly to building a consensus among all the stakeholders involved (politicians, regulators, academics and industry) that finance and markets could become safer, mainly through a significant overhaul of the existing financial regulatory framework. Understanding the failures in regulation that had created the environment leading to the crisis was seen as the most important tool for preventing the occurrence of analogous episodes in the future.[7]

According to the IMF (2009), the market failures observed during the crisis occurred - after a long period of high growth, low real interest rates and low volatility - mainly because financial regulation and macro-economic policies were not equipped to identify the growing risk concentrations in some specific economic sectors and were unable to take into account the build-up of systemic risks in the financial system and in the housing markets.

In the case of the United States, the G20 jurisdiction where the GFC had begun, the economic literature has pointed towards regulatory and supervisory shortcomings (also accompanied by the increased complexity of financial instruments and the inadequate management of risks by financial institutions) as the key factors that exacerbated both the impact and the propagation of the crisis. In particular, the move towards 'light-touch' regulation/supervision in finance and banking in the early 2000s was widely viewed as being one of the deregulatory mistakes that had set the stage for the crisis.[8] More importantly, these conclusions in terms of regulation failures have been extended to virtually all the advanced economies disrupted by the effects of the GFC.[9]

Since the GFC, the global governance of finance has been reinforced through the enhancement of the role and functions of the international standard-setting bodies and institutions. Financial regulation has been tightened: banks' capital and liquidity requirements are now stricter than before the GFC; a demanding stress test regime has been built and efforts have been made to end the too-big-to-fail problem, by developing a framework for the orderly resolution of large and complex financial institutions. According to the FSB, the aspects of non-bank financial intermediation that contributed to the GFC, including various forms of structured finance, have

[7] These shortcomings were illustrated in the years during or immediately after the crisis in: IMF, 'Initial Lessons of the Crisis', February, 2009; Obstfeld, M. Rogoff, K., 'Global Imbalances and the Financial Crisis: Products of Common Causes', IMF, 2009; and Claessens, S., Laeven, L., Igan, D. Dell'Ariccia, G., 'Lessons and Policy Implications from the Global Financial Crisis', IMF, Working Paper No. 44, 2010.

[8] For these analyses see Blinder, A., 'Six errors on the path to the financial crisis' The New York Times, January 24, 2009; Barth, J., Caprio, G. Levine, R., 'Guardians of Finance: Making Regulators Work for Us', MIT Press, 2012; and Schiller, R. J., 'The subprime solution: how today's global financial crisis happened, and what to do about it', Princeton University Press, 2012.

[9] Claessens, S. Kodres, L., 'The Regulatory Responses to the Global Financial Crisis: Some Uncomfortable Questions' IMF, Working Paper, No. 14, 2014; and Acharya, V., Cooley, T. F., Richardson, M. P. Walter, I., 'Market failures and regulatory failures: Lessons from past and present financial crises', Asian Development Bank Institute, Working Paper No. 264, 2011.

declined significantly.[10] Finally, in many jurisdictions (and monetary areas, such as the Eurozone) new institutional settings and powers have been created to better control and mitigate micro- and macroprudential risks.

However, notwithstanding these achievements, there is increasing evidence that the coordinated global approach - crucial in making the international financial system safer in the decade after the GFC - is losing consensus and could be at risk. This is a sign that the pendulum on financial regulation is swinging back again.[11]

Significant elements confirming this general trend can be inferred from a variety of circumstances and institutional contexts. First, the implementation of the internationally agreed post-GFC regulatory reforms is still uneven across regulatory areas and jurisdictions; although all G20 members have implemented the initial 2010 Basel III reforms, there are worrying signs of a lack of commitment in implementing other important standards in crucial segments of financial intermediation.[12] Second, there are concerns as to whether the post-Brexit United Kingdom will be able to remain 'equivalent' to - or closely aligned with - the more stringent EU rules for banking and finance in the years to come. Third, the policy initiatives pushed by the EU regulators to grant environmentally friendly investments a lighter capital treatment may also be interpreted as a way to distort risk-taking, albeit for a valuable public policy objective.[13]

Finally, with the global economy entering a serious recession due to the effects of the current pandemic, there have been requests from many quarters to suspend or ease prudential standards to alleviate the economic consequences of COVID-19.

Competitive pressures to deregulate could not have emerged at a less opportune time. As outlined recently by the FSB,[14] debt is rising fast among riskier companies with lower credit

[10] FSB, 'Implementation and Effects of the G20 Financial Regulatory Reforms', 5th Annual Report, October, 2019.

[11] Jenkins, P., 'Worrying Signs that a Great Global Deregulation Has Begun', Financial Times, December 9, 2019; and FSB, 'Report on Market Fragmentation', June 2019.

[12] FSB, 'FSB Chair's Letter to G20 Finance Ministers and Central Bank Governors', February 2020.

[13] See the letter of B. Coen, former Secretary General of the Basel Committee on Banking Supervision, to the Financial Times, reported in an article by Stacey, K., Jenkins, P., 'Easing Bank Rules for Green Causes 'Myopic', December 13, 2019. 'The myopic, feckless and piecemeal attempt to address socially desirable initiatives, such as green finance (and small and medium-sized enterprises) lending, via bank capital regulation risks thwarting the (Basel Committee's) progress in improving minimum global standards. This approach is ineffective and, in the long run, dangerous'. See also Binham, C., 'EU regulator considers rewarding banks' green investments,', Financial Times, December 7, 2019, who refers that A. Enria, Chair of the ECB Supervisory Board, insisted that financial institutions' capital requirements should be based on the level of risk they take and should not be altered to pursue other objectives. To this end, see also Enria, A., 'Regulation, proportionality and the sustainability of banking', November, 2019, where it is affirmed that 'any capital relief for green assets must be based on clear evidence that they are less risky than non-green assets'.

[14] FSB, 'Report on Vulnerabilities associated with leveraged loans and collateralized loan obligations (CLO)', December 2019.

ratings; a highly leveraged business sector could amplify any economic downturn, as companies are forced to cut back on investments. Today, banks have tougher regulatory buffers in the field of capital and liquidity and are supervised more tightly than before the GFC. Because of this, they appear to be better positioned to withstand the economic consequences of the COVID-19 emergency. A trend towards easing or suspending prudential rules now could expose the banking system to growing risks in the years to come.

In this paper, I will take the ongoing US regulatory cycle – from the Dodd-Frank Act to the current response to the pandemic – as a leading example to illustrate my belief that deregulating the financial system is not a viable option. Adherence to the internationally agreed framework still represents the 'safety net' for the resilience of individual banks and the overall financial stability in the current circumstances.

In the United States, a series of policy and regulatory initiatives are being undertaken with the objective of producing a structural change in the supervisory and regulatory approaches. The key word of this regime change is 'tailoring', that is, building prudential standards that are set in line with the size and risk profile of the supervised institutions. The overarching principle is to ease the 'unnecessary' regulatory burden to support the contribution of bank lending to the real economy.[15]

These initiatives are reversing the main elements of the Dodd-Frank Act (DFA), a piece of legislation introduced in 2010, as the most important regulatory response to the GFC adopted in the US in order to address the various weaknesses of its financial system, by allowing the US supervisory agencies to exercise stronger oversight and regulatory powers. The new US approach was outlined in the Economic Growth, Regulatory Relief and Consumer Protection Act (EGRRCPA), signed by President Trump in May 2018.

In October 2019, a number of rules applicable to large banks were changed, resulting in the relaxation of some of the enhanced requirements put in place after the GFC. The recent decision by the Federal Reserve Board on the leverage ratio, in April 2020, and the legislative action taken on banks' provisioning methodologies are additional pieces of evidence for what seems to be the willingness now prevailing among the US agencies to introduce some significant deviations from the global standards finalized under the aegis of the G20 and FSB since 2008. Signs of an even greater deviation can also be inferred from the forthcoming US implementation of the standards derived from the 2017 Basel III Accord.

These signs of a softened approach to banking regulation (and supervision) are also spreading beyond the United States. The cumulative effect of the trends described above could force the globally harmonized approach to regulation to be broken down, also given the current

[15] US Department of the Treasury, 'A Financial System That Creates Economic Opportunities - Banks and Credit Unions', June 2017.

situation triggered by the COVID-19 pandemic. The GFC had highlighted the limitations of the idea that self-regulation and market discipline are sufficient to ensure stable financial systems. The coordination of the post-GFC financial repair across borders and sectors was the key condition for restoring the stability of the global financial system.[16] This means that also in the current circumstances a major effort is needed, both at national and international level, to adjust and strengthen the regulatory and supervisory framework. The path towards easing or even suspending prudential standards, which may appear to be an appropriate response now, may backfire later. There is no need to change or suspend rules even in this situation. We all need banks that are safe and viable also once the COVID-19 emergency is over.

I have organized this paper as follows.

- Chapter 2 includes a survey of the economic literature, which has tried to explain the causes, patterns and consequences of financial crises and their links with (de)regulatory policies.
- Chapters 3 and 4 illustrate the main elements of the US regulatory cycle, from the Dodd-Frank Act to the proposals of the Trump administration to deregulate the US financial system.
- Chapter 5 examines the details of the rules applicable to large and systemic US banks, in force from January 2020.
- Chapter 6 offers some reflections on the new approach of the US authorities in implementing the global standards, also in the context of the regulatory stance they have adopted in response to the COVID-19 emergency.
- Chapter 7 elaborates on the importance of sound regulatory requirements for keeping the financial system safe in adverse economic conditions as well.
- Chapter 8 draws conclusions on some lessons learnt and on the importance of consistency in banking regulation.

2. A survey of the literature

In this chapter, I will provide an overview of the two main strands of the economic literature. The first one is tailored to the financial sector; it is derived from a number of contributions trying to explain causes, patterns and consequences of financial crises and their links with regulatory policies. In this regard, the paper illustrates the academic studies on the regulatory cycles observed across countries and over time. The second strand is more generally

[16] IMF, 'Global Financial Stability Report, Lower for Longer', October 2019. According to the IMF, it is crucial to complete and implement the regulatory reform agenda, avoiding any rollback of the international regulatory standards.

structured, since it is built on the theory of the economics of regulation, and has the objective to ascertain the driving forces of public policies aimed at correcting market failures.

2.1 Regulation and financial crises

The starting point for this literature can be identified with the financial instability hypothesis developed by Minsky.[17] This widely cited author underlines how modern capitalist economies periodically go through phases of inflation and debt-deflation, which tend to generate self-perpetuating movements, which put the economic system out of the control of the public authorities. These findings are based upon theoretical assumptions on the functioning of capitalism and business cycles and evidence stemming from the observation of historical episodes of crisis. It emerges that the reactions of the economic system to a movement of the economy tend to amplify these movements (Minsky says that inflation feeds upon inflation and debt-deflation feeds upon debt-deflation) and the government interventions tend to become ineffective. The background is the characterization of the modern economy as a capitalist economy with expensive capital assets and a sophisticated financial system.

The first theorem of the financial instability hypothesis is that the economy has some financing regimes that ensure stability, and other financing regimes that are likely to produce instability.[18] Financial fragility is an attribute depending on the balance sheets and income statements of individual firms, households and other economic agents. For the economy as a whole, the greater the ratio of hedge financing units the more robust is its financial structure; the opposite happens the greater the portion of speculative and Ponzi units.

The second theorem states that over periods of prolonged growth and wealth the economy tends to depart from stability-inducing financial relations. In particular, when the good times last sufficiently long, the financial structure of a capitalist economy changes: the predominance of hedge finance units diminishes, while the portion of units engaged in speculative and Ponzi

[17] For extensive references, see Minsky, H.P., 'Can It Happen Again? Essays on Instability and Finance', New York, M. E. Sharpe, 1982. A summary of this theory is in Minsky, H. P., 'The Financial Instability Hypothesis', The J. Levy Economics Institute of Bard College, 1992.

[18] Minsky identifies three distinct income-debt relations for economic units, labeled hedge, speculative and Ponzi finance. Hedge financing are those units which can fulfill their contractual payment obligations on both principal and interest by their cash flows over an extended period of time; the greater the weight of equity financing in the liability structure the greater the likelihood that the unit is a hedge unit. Speculative finance are units that can rely on income from their operations or from the way their assets perform only to repay the interest and not the principal of their debt; such units need to roll over their liabilities, that is, to issue new debt to repay previous debt. Minsky says that a government with floating debt, corporations with floating issues of commercial paper, and banks are typically hedge units. Ponzi finance is the character of those units for which the cash flows from their operations are not sufficient to fulfill either the repayment of principle or the interest due on their liabilities. Such units can sell assets or borrow to fulfill their payment obligations. Borrowing or selling assets to pay interest lowers the equity of a unit, thus decreasing the safety it can offer to its creditors.

finances becomes larger. According to Minsky, if an economy with speculative units is in an inflationary state and the authorities put in place a monetary tightening, 'then speculative units become Ponzi units and the net worth of previously Ponzi units evaporates'.[19] In these cases, units with cash flow shortfalls will sell assets, thus leading to a collapse of asset values in the overall system.

The financial instability hypothesis is a theoretical model in which business cycles of varying severity are exacerbated by endogenous dynamics of the economy and by government interventions and regulations aimed in principle to ensure stability. All these circumstances seem to confirm that the economy does not behave as envisaged in the classical views of authors like A. Smith and L. Walras, but rather as a system that is constantly in search of an equilibrium. Along the same lines, Kindleberger (1978) covers the history of financial crises over a period of four centuries; he views financial crises as the culmination of a process where expectations, financed by excessive credit growth, often result in speculative excesses or manias.[20]

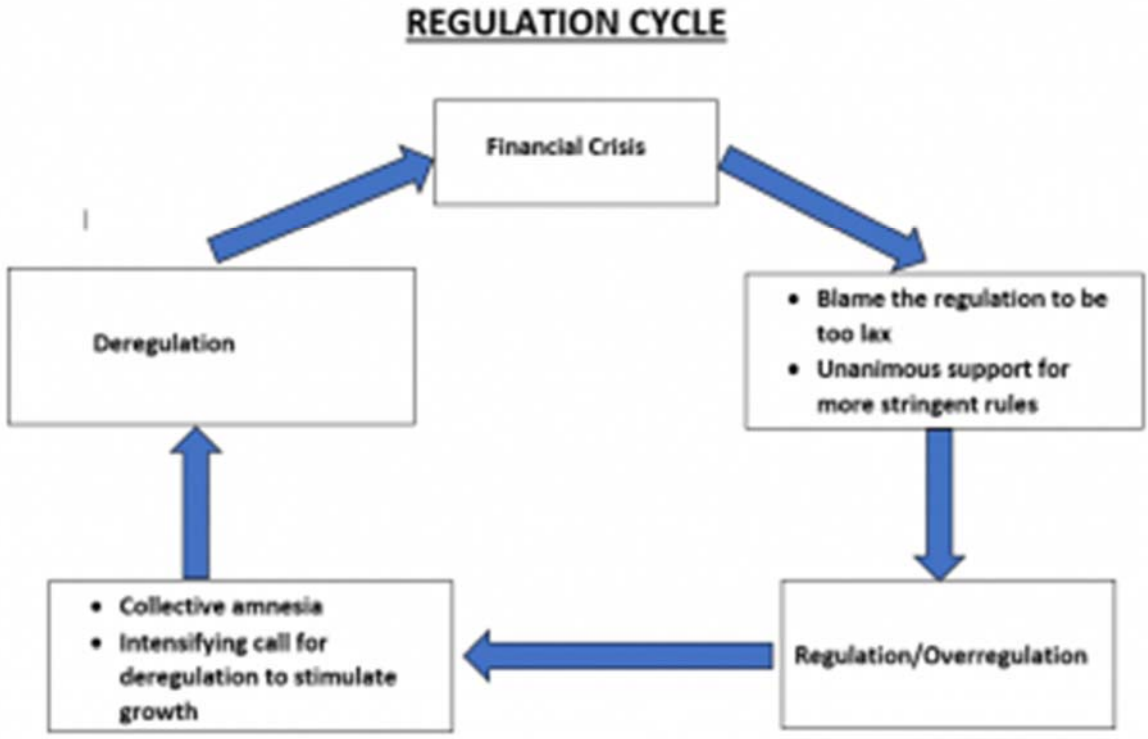
Reinhart-Rogoff (2008) offer a detailed quantitative overview of the history of financial crises dating from the mid-fourteenth century default of king Edward III of England to the subprime crisis in the United States, covering the full spectrum of typologies of crises: sovereign debt, banking, inflation, and exchange rate crises.[21]

According to these authors, financial crises often exhibit more similarities than differences, while highlighting how each episode is, at the time of occurrence, perceived as different from the others. For example, they illustrate the near universality of episodes of default and high inflation in emerging markets, extending to Asia, Africa, and Europe. Global debt crises have often radiated from the center through commodity prices, capital flows, interest rates, and shocks to investor confidence. They also devote much attention to the so-called "this time is different syndrome", which is in action when it is argued that the world is not likely to see again a major wave of defaults, because countries and creditors have learned from their mistakes, thanks to better-informed macroeconomic policies and more discriminating lending practices. A recent example of the "this time is different" syndrome is the false belief that domestic debt is a feature that characterizes modern financial systems.[22]

This paper is also much related to the literature that reviews financial crises with an emphasis on the historical context of each crisis. A crisis sometimes shifts the pendulum back

[19] Minsky, H. P., 'The Financial Instability Hypothesis', The J. Levy Economics Institute of Bard College, 1992.
[20] Kindleberger, C., 'Manias, Panics, and Crashes', New York, 1978.
[21] Reinhart, C. M., Rogoff, K. S., 'This Time is Different: A Panoramic View of Eight Centuries of Financial Crises' NBER Working Paper No. 13882, 2008.
[22] In this respect, the two authors confirm that the US sub-prime financial crisis is hardly unique if compared with the main episodes of the past.

toward stronger supervision; the cycle continues once memories of the crisis start to fade. In this case, 'regulation will erode and that erosion will be exported; this has happened before and will do so again. This time, too, is not different'.[23] In literature, this behavior is indicated as "disaster myopia": over time, regulation degrades, as the forces against it strengthen and those in its favour corrode[24]. The bigger the disaster, the longer tough regulation is likely to last.



Building on the famous work by Kindleberger, Dagher (2018) confirms the regulatory cycle (see the above figure for its main elements) over several episodes of financial crises. The examples of regulatory cycles mentioned in this paper are the following: the South Sea Bubble in the 1720s; the British financial crisis of 1825; the Great Depression of the 1930s; the Japanese financial crisis of the 1990s; the Swedish banking crisis of the 1990s; the Korean financial crisis of the 1990s; the US Dot-Com episode of the late 1990s; the Irish financial crisis of 2008; the US Great Recession of 2007-08; the Spain's housing boom and bust of the 2000s.[25] The author focuses on episodes characterized by either a private credit or a stock market boom; he does not cover other types of crises, such as sovereign debt or exchange rate crises. This paper closely

[23] Wolf, M., 'Why further financial crises are inevitable', Financial Times, March 20, 2019.
[24] Guttentag, J. M., Herring, R. J., 'Disaster Myopia in International Banking', Essays in International Finance, Princeton University, September 1986.
[25] Dagher, J., 'Regulatory Cycles: Revisiting the Political Economy of Financial Crises', IMF, Working Paper No. 8, 2018.

examines the pattern of financial regulatory policies, their political economy and the political consequences across different episodes over time and across countries.

Calomiris-Haber (2014) study the history and the political economy of banking regulations across countries.[26] In particular, they provide examples, derived by the wartime experience, of the special relation between politicians and bankers and discuss how the 'rule of the game' has been an outcome of bargaining. Governments needed banks to fund wars and in return, bankers obtained concessions such as monopoly rights. As a result, bankers and politicians are able to extract rents at the cost of a fragile and inefficient banking system.

While the nature of government needs and the concessions it is willing to provide changes over time, Calomiris-Haber (2014) argue that this bargaining game is at the heart of many banking regulations across countries and time. Nevertheless, the public benefit view cannot be dismissed completely; one might reasonably argue, however, that it might be more challenging to empirically establish a public benefit view, as one would have to rule out many private interest forces. Furthermore, evidence of an influence by a concentrated interest group does not rule out other forces nor imply that such regulations always fail the public interest test.[27]

Fernandez-Villaverde et al. (2013) have studied in depth the mechanisms through which the adoption of the Euro delayed, rather than fostered, structural economic reforms in a number of Euro zone periphery countries, particularly Greece, Portugal, Spain and Ireland.[28] Lacking monetary and fiscal national policies, the governments of these countries were supposed to undertake the structural reforms they had resisted to adopt in the years before the euro. The sharp decline in interest rates in connection with the advent of the single currency meant that the budget constraints facing these countries were loosened rather than tightened, with the result that countries with an easier access to financial markets were incentivized to delay reforms. Moreover, accountability was lost during the bubble as 'bad decisions have no negative short-run consequences when rising assets prices hide all mistakes'. The financial bubble fueled the deterioration of governance and of the institutional arrangements. For example, these developments can be followed in the case of Spanish *cajas*, the credit institutions that were dominated by local political elites and were mainly responsible for the financial crisis in Spain. This paper argues that the abandonment of the reforms prolonged the credit boom, delayed the

[26] Calomiris, C. W., Haber, S. H., 'Fragile by Design: The Political Origins of Banking Crises and Scarce Credit', Princeton Economic History of the Western World, Princeton University Press, 2014.

[27] Rajan, R. G., Ramcharan, R., 'Constituencies and Legislation: The Fight over the McFadden Act of 1927', NBER, No. 17266, 2011; Benmelech, E., Moskowitz, T. J., 'The Political Economy of Financial Regulation: Evidence from US State Usury Laws in the 19th Century', The Journal of Finance, 3, 2010; and Kroszner, R., Strahan, P., 'What Drives Deregulation? Economics and Politics of the Relaxation of Bank Branching Restriction', Quarterly Journal of Economics, 1999.

[28] Fernandez-Villaverde, J., Garicano, L., Santos, T., 'Political Credit Cycles: The Case of the Euro Zone', NBER, Working Paper No. 18899, Cambridge, MA, 2013.

response to its burst and reduced the growth prospects for these countries, with an adverse feedback on their financial conditions. The opposite happened in other countries, such as Germany, which, faced with the constraints imposed by the single monetary policy, chose the path of structural reforms to foster the growth of their economy.

Gerding (2013) advances what he calls the "Regulatory Instability Hypothesis", a conceptual framework for explaining how financial markets and financial regulation are locked into a deadly spiral leading to a crisis.[29] According to the financial instability hypothesis, strong forces tend to cause the decay of financial regulations at the precise moment when they are most needed - when markets boom, investors and financial institutions exercise less care and take on more risk and leverage, and financial crisis looms. According to this author, bubbles create strong pressure on governments to make regulatory changes to stimulate booming financial markets, in the form of deregulation (i.e., the repeal or roll back of legal rules) and skew the incentives of financial market participants against obeying financial laws. Moreover, some financial regulations interact with economic cycles to exacerbate market booms and busts. This occurs in the normal operation of these regulations.[30] Finally, in some contexts the ideology of free markets tend to erode the authority and power of regulators, above all in periods of booms. All these forces cause the regulatory pendulum to keep swinging constantly.

An important part of the academic literature discusses the close links between liberalization-deregulation in financial markets and boom-bust episodes.[31] These papers focus the attention on public policies aimed at lifting constraints on the financial markets (i.e. those on capital inflows and outflows, particularly in emerging markets) and analyze two fundamental issues: whether financial liberalization increases the risk of financial crises and whether it has an

[29] Gerding, E. 'Law, Bubbles, and Financial Regulation, New York, Rutledge, 2013.

[30] According to this author, some examples can be inferred from some recent regulatory interventions. First, loan loss reserves require banks to set aside money to cover the probability of defaults on their mortgages or other loans granted. If the amount of the reserve required by legal rule is based on the losses of the previous year emerged on mortgages or other loans, then a real estate or other bubble that lasts several years can lead to troubling results. Second, rising market prices can lead to fewer loan defaults. When real estate prices surge for long period, mortgage borrowers can exit loans they can no longer afford by selling their homes for a higher price (or by refinancing, if credit is cheap). Under the regulation, lower defaults allow banks to lower reserves. This allows a bank to lend more money. More credit can drive housing prices higher and a feedback loop can develop. However, the feedback loop jumps into reverse should real estate prices falter. Defaults rise. Lower prices narrow the exit options for borrowers to resell assets. Higher default rates leads to higher reserve rates, which throttles back bank lending. Less bank credit further depresses asset prices, prevents more borrowers from reselling or refinancing, and increases the default rate. This type of poorly designed (but unfortunately not uncommon) loan loss reserve requirements tend to amplify market cycles.

[31] Bekaert, G., Harvey, C., Lundblad, C., 'Does Financial Liberalization Spur Growth?', Journal of Financial Economics, 77, 2005; Tornell, A., Westermann, F., 'Boom-Bust Cycles and Financial Liberalization', MIT Press, Cambridge, Massachusetts, 2005; and Kaminsky, G. L., Schmukler, S. L., 'Short-Run Pain, Long-Run Gain: Financial Liberalization and Stock Market Cycles', Review of Finance, 12, 2008.

effect on long-run economic growth.[32] The views are not unanimous, as some authors believe that liberalization causes bubbles and crises, while others point towards its long-term stabilizing effects on markets and institutions.

Some contributions argue that the deregulation of financial markets was the trigger of many of the crises observed wince 1970s up to those of 1990s in Asia, Europe and Latin America. Kaminsky-Reinhart (1999) estimated that the probability of banking crises increases by 40 per cent after deregulating the domestic banking sector; in their analysis, crises are preceded by a significant increase of the bank credit to GDP ratio and by a boom-bust cycle in equity prices. According to many, this is because financial deregulation incentivizes the assumption of risks by banks.[33] Allen-Gale (2000) show that these lending booms may generate stock market bubbles because agency problems create incentives for borrowers to use bank loans to buy risky assets; usually these bubbles end up in banking crises and recessions. Tornell (2005) argues that financial liberalization causes lending boom-bust cycles in economies with credit restrictions and market imperfections.[34] Overall, these models rest on the idea that market failures and distortions pervade capital markets and are the sources of the boom-bust patterns.

On the contrary, others - building upon traditional neoclassical models - find that financial liberalization has the potential to bring significant benefits to economic systems, allowing a more efficient capital allocation, increasing productivity and growth. For example, Bekaert et al. (2005) find that liberalization determines a one-percentage point increase in annual GDP growth and a decline in output volatility. Henry (2000) finds an increase in the rate of aggregate investment and revaluation of stock prices in a large number of countries.[35]

Even empirical research is not in a position to deliver conclusive evidence. According to Kaminsky-Schmukler (2008), these conflicting results can be mutually consistent. In fact, financial deregulation has the potential to determine short-run financial boom-bust cycles and output declines in economies with distortions in capital markets; however, it may favor more efficient financial markets over the long run, producing stability and growth. These authors compare the behavior of financial cycles in the immediate aftermath of financial liberalization,

[32] Kaminsky, G. L., Reinhart, C., 'The Twin Crises: The Causes of Banking and Balance-of-Payments Problems', American Economic Review, 3, 1999; Demirguc-Kunt, A., Detragiache, E., 'Financial Liberalization and Financial Fragility', Annual World Bank Conference on Development Economics, World Bank, 1999; and Stiglitz, J., 'Capital Market Liberalization, Economic Growth, and Instability', World Development, Elsevier, 2000.

[33] These findings are stressed by Allen, F., Gale, D., 'Bubbles and Crises', Economic Journal, 1, 2000; Hellman, T., Murdock, K., Stiglitz, J., 'Liberalization, Moral Hazard in Banking, and Prudential Regulation: Are Capital Requirements Enough?', American Economic Review, 1, 2000; and Schneider, M., Tornell, A., 'Balance Sheet Effects, Bailout Guarantees, and Financial Crises', Review of Economic Studies, 2004.

[34] Tornell, A., Westermann, F., 'Boom-Bust Cycles and Financial Liberalization', MIT Press, 2005.

[35] Henry, P., 'Stock Market Liberalization, Economic Reform, and Emerging Market Equity Prices', Journal of Finance, 2, 2000.

and in the long run for a large number of countries and episodes of liberalization.[36] Their results for emerging markets indicate that there is a quite pronounced time-varying relation between liberalization and financial cycles: liberalization is followed by booms and crashes in the short run; in contrast, in the long-run financial cycles become less pronounced, perhaps because capital market distortions become less widespread. Their findings for mature markets support the view that liberalization leads to an increase in the value of the firms, but not to larger crashes, even in the aftermath of financial liberalization. In emerging economies, government reforms mostly occur following, not before, financial liberalization, suggesting that liberalization encourages the reforms needed for markets that are more efficient. According to these results, financial cycles become less pronounced after improvements in property rights, transparency, and the overall contractual environment.

By contrast, Dagher (2018) offers examples of financial liberalization episodes where the modernization of financial markets was followed by policies of credit subsidization and general sponsorship of the boom, which is against the economic principles behind liberalization.[37]

2.2 The economics of regulation

A significant strand of literature on the political economy of banking and financial regulation has tried to understand the structural elements that have a bearing in shaping these regulations. Academic papers have increasingly adopted an approach that treats regulation as an outcome of a process of compromise between groups of self-interested agents.

This piece of literature has developed since the publication of Stigler's 'The Theory of Economic Regulation', which goes back to 1971.[38] The most important input stemming from that paper - which has been very influential over the subsequent years - is its underlying idea that it is not always true that public regulation is designed only to pursue the overall public interest through

[36] The Kaminsky-Schmukler sample includes twenty-eight emerging- and mature-market economies. It is composed of four regional clusters: the G-7 countries (Canada, France, Germany, Italy, Japan, United Kingdom, United States); the Asian region (Hong Kong, Indonesia, Malaysia, Philippines, South Korea, Taiwan, Thailand); the European group (Denmark, Finland, Ireland, Norway, Portugal, Spain, Sweden); Latin American sample (Argentina, Brazil, Chile, Colombia, Mexico, Peru, Venezuela). This study covers 63 episodes of liberalization of the banking industry, 67 episodes of opening up of the capital account, and 49 episodes of deregulation of the stock market.

[37] Dagher, J., 'Regulatory Cycles: Revisiting the Political Economy of Financial Crises', IMF Working Paper No. 8, 2018.

[38] For this strand of literature, I will manly follow the paper by Carrigan, C., Coglianese, C., 'George J. Stigler, The Theory of Economic Regulation', University of Pennsylvania, Law and Economic Research Paper, No. 16, 2016. See also Stigler, R., G. J., 'The Theory of Economic Regulation', Bell Journal of Economics and Management Science, 2, 1971.

the correction of market failures.[39] Instead, it is argued that regulation may serve private interests, as it is bought by the industry and is designed and operated primarily for its benefit. This analysis has represented a structural change in economic thought; back in the 1960s and early 1970s, economists viewed regulation primarily as a mechanism designed to solve market failures, not as a tool that an industry may use to raise barriers to efficient competition.

The 'Theory of Economic Regulation' analyzes the behavior of regulators using the same theories and methods used in economic theory for any other producer and consumer behavior. In this context, regulation is simply a product, which is produced in a marketplace, as it happens for any other product. The difference between regulation and other products is that in the former case the political process defines the structure of the market. Regulation largely advances private interests because of the way political institutions create incentives for political leaders to emphasize an industry's interests over the broader public's interests. Businesses seek to "buy" one or more of government's four main products: subsidies; control over competitive entry; regulation of product substitutes or complements; and the fixing of prices.

Stigler assessed the business value of each of these four products. In his analysis, firms prefer regulations that operate as barriers to entry by potential competitors, or that otherwise create a disadvantage for substitute products or an advantage for products complementary to their own. Some of his famous examples of entry barriers include requirements that regulators approve new trucking routes or the entry of new airline carriers or the operation of new institutions in the financial sector. Stigler not only developed this theoretical explanation for industry's influence over the regulatory process, but he also sought to bring empirical evidence with references to different types of regulatory arrangements, such as oil import quotas. He also put forward regression analyses of two state-level regulatory schemes (trucking regulation and occupational licensing) to support his political economy of regulation. In Stigler's view, the idea that regulation benefits business not only grew out of economic theory, but it also found support in empirical analysis.

However, a careful reading of "The Theory" shows that Stigler did not argue that industry always uses regulation for its own interest. Rather, he sought to explain the general tendency of regulation to serve industry's interests, and he did so by reference to the general tendencies created by incentives embedded within a democratic political system. In the market for regulation, the structure of which is influenced by the political process, concentrated industry interests may prevail over the broader public interest. This is because businesses with large stakes in regulation

[39] For the impact of this article on the theoretical research on the economics of public regulation, see: Peltzman, S., 'The Economic Theory of Regulation after a Decade of Deregulation', Brookings Papers on Economic Activity (Microeconomics), 1989; Peltzman, S., 'George Stigler's Contribution to the Economic Analysis of Regulation', Journal of Political Economy, 101, 1993; and Mitchell, W. C., Munger, M. C., 'Economic Models of Interest Groups: An Introductory Survey', American Journal of Political Science, 35, 1991.

often get their way. These firms provide political parties and candidates with financial resources: campaign contributions, fund-raising efforts, jobs for political party members, and contracts with politicians' businesses, such as law firms. They also work to support get-out-the-vote efforts in favor of business-friendly representatives and causes. He sought to explain what happens "as a rule".[40]

Other scholars underline the risk that industry and established interests may try and often manage to exert influence over regulatory agencies to their own advantage. These usually describe cases where regulated industries manipulated regulatory authorities for their own benefit.[41] By using economic principles and methods to explain regulatory activity, this literature tries to show how and why regulatory regimes can be acquired - not just altered - by private interests; this provides economists and scholars of regulation with the theoretical foundations of what has been labelled the 'political economy of regulation'.[42]

Peltzman (1976) extended Stigler's analysis by postulating that regulators deal with both consumer and industry demands for regulation; he developed a formal model for the behavior of a rational regulator, who reacts by seeking an outcome that optimizes political support from all groups interested in regulation.[43]

According to Carrigan-Coglianese (2016), over the years other theoretical contributions further broadened Stigler's simple characterization of the interest group environment (Becker 1983); more carefully distinguished the incentives faced by legislators and their agents (Laffont-Tirole 1991); described how political actors can use regulation to extract rents (McChesney 1987); illustrated how attention to politicians' motivations can help distinguish between regulatory capture and the pursuit of public interest objectives (Levine-Forrence 1990).[44]

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[40] Carrigan, C., Coglianese, C., 'George J. Stigler, The Theory of Economic Regulation', University of Pennsylvania, Law and Economic Research Paper, No. 16, 2016. In their words, Stigler specifically stated that his theory "does not mean that every large industry can get what it wants or all that it wants". For these reasons, it should be clear that Stigler did not believe that all regulation is acquired by industry. Although he never referred to "regulatory capture" in his article, in his closing words he wondered if there really could be any realistic way to avoid having regulators who were "subservient" to industry.

[41] In the paper by Carrigan-Coglianese (2016), the following contributions are referenced: Lowi, T. J., 'The End of Liberalism: Ideology, Policy, and the Crisis of Public Authority', New York: Norton, 1969; Kolko, G., 'The Triumph of Conservatism: A Reinterpretation of American History, 1900–1916', New York, Free Press, 1963; and Bernstein, M. H., 'Regulating Business by Independent Commission', Princeton University Press, 1955.

[42] Posner, R. A, 'Theories of Economic Regulation', Bell Journal of Economics and Management Science, 5, 1974. See also Posner, R. A., 'The Concept of Regulatory Capture: A Short, Inglorious History', in Carpenter, D., Moss, D. A., (Eds.), 'Preventing Regulatory Capture: Special Interest Influence and How to Limit it', New York: Cambridge University Press, 2013.

[43] Peltzman, S., 'Toward a More General Theory of Regulation', Journal of Law and Economics, 19, 1976.

[44] The references provided in Carrigan-Coglianese (2016) are the following: Becker, G. S., 'A Theory of Competition among Pressure Groups for Political Influence', Quarterly Journal of Economics, 98, 1983;

The economic theory of regulation has fostered an extension of empirical analyses of government-business interrelations across different economic sectors, including airlines, mining, manufacturing, and banking.[45] Since the 1970s, the perception that regulatory agencies can be captured has been commonly accepted. A confirmation of Stigler's point may be seen in some episodes that have occurred in heavily regulated industries, for example, the early 1990s mortgage crisis in the United States, the Great Recession, the Gulf of Mexico oil spill, the Fukushima nuclear accident in Japan. Much of the blame for these recent crises has been laid upon regulators who 'purportedly made themselves too subservient to the industries they regulated'.[46]

The economics of regulation as outlined in the approach chosen by Stigler in 1971 has been put under critical review in a number of academic papers, which have challenged both his theoretical assumptions and empirical evidence. First, Stigler's article has been seen as having put an emphasis – disproportionate and not based upon solid facts - on the power of industry over regulatory agencies. His often quoted sentence that 'as a rule' regulation is acquired by the industry and is designed and operated primarily for its benefit appears to be contradicted by the opposition – often unsuccessful – of the industry to the introduction of costly regulatory burdens (above all those pieces of legislation adopted in the immediate aftermath of severe episodes of crisis). The same behavior shown by other industries could make it difficult even if not impossible for any single business to turn the policies of a regulatory body to its own exclusive advantage.[47]

In this context, the wave of deregulation of key economic sectors, such as airlines, telecommunications, trucking, natural gas, and banking, that occurred in the United States in the 1980s and in the 1990s seems to be in contrast with the claim on regulation as a barrier to entry

Laffont, J. J., Tirole, J., 'The Politics of Government Decision-Making: A Theory of Regulatory Capture', Quarterly Journal of Economics, 106, 1991; McChesney, F. S., 'Rent Extraction and Rent Creation in the Economic Theory of Regulation', Journal of Legal Studies, 16, 1987; and Levine, M. E., Forrence, J. L., 'Regulatory Capture, Public Interest, and the Public Agenda: Toward a Synthesis', Journal of Law, Economics, and Organization, 6, 1990.

[45] See: for airline, Levine, M. E., 'Revisionism Revised? Airline Deregulation and the Public Interest', Law and Contemporary Problems, 44, 1981; for mining, Kalt, J. P., Zupan, M., Zupan, A., 'Capture and Ideology in the Economic Theory of Politics', American Economic Review, 74, 1984; for banking, Kroszner, R. S., Strahan, P. E., 'What Drives Deregulation? Economics and Politics of the Relaxation of Bank Branching Restrictions', for manufacturing, Maxwell, J. W., Lyon, T. P., Hackett, S. C., 'Self-Regulation and Social Welfare: The Political Economy of Corporate Environmentalism', Journal of Law and Economics, 43, 2000.

[46] See for this quotation, Carrigan, C., Coglianese, C., 'Oversight in Hindsight: Assessing the US Regulatory System in the Wake of Calamity', in Coglianese (Ed.), Regulatory Breakdown: The Crisis of Confidence in US Regulation', University of Pennsylvania Press, 2012.

[47] Kamieniecki, S., 'Corporate America and Environmental Policy: How Often Does Business Get its Way?', Stanford University Press, 2006.

for outsiders (Levine 1981; Quirk 1981), although subsequent extensions of the analysis have been directed toward understanding deregulation (Peltzman 1989).[48]

The same happens if one looks at the new forms of regulation in the fields of environment, consumer protection, civil rights that have been recently introduced at an increasing pace, notwithstanding strong opposition by industry.

3. The US regulatory cycle: the road to the Dodd-Frank Act

History suggests that financial regulations are typically overhauled by thousands of cuts rather than by a single significant event.[49] This regularity can be found in the case of the United States. The earliest regulation on the US financial sector can be traced back to the 1907 bank run. The resulting liquidity crisis led to the closure of several banks. In response, the US Congress created the Monetary Commission in 1913, and adopted a set of rules designed to manage money supply and demand, through the Federal Reserve System, as well as to dampen boom-bust cycles and the risk of escalation.[50] The 1920s were marked by a series of deregulations promoted by policymakers, allowing a credit bubble to grow. The resulting Great Depression of 1929 led to the first stringent regulation of the financial sector: the 1933 Glass-Steagall Act, which imposed the separation of commercial and investment banking, designed to prevent banks from risking customers' deposits in financial gambling. Decades after its adoption, this Act was slowly eroded by a series of bills, culminating in the Gramm-Leach-Bliley Act in 1999, which repealed it. In doing so, this bill removed the barriers in the market between banking companies, securities companies and insurance activities.[51] Over the following years, through the absence of serious

[48] Levine, M. E., 'Revisionism Revised? Airline Deregulation and the Public Interest', Law and Contemporary Problems, 44, 1981; Quirk, P. J., 'Industry Influence in Federal Regulatory Agencies', Princeton, Princeton University Press, 1981; and Peltzman, S., 'The Economic Theory of Regulation after a Decade of Deregulation', Brookings Papers on Economic Activity (Microeconomics), 1989.

[49] Cornell University law professor S. Omarova states: 'Financial reform is like a big onion. The more layers you peel off, the harder you cry'. This sentence is reported in Dayen, D., 'Dismantling Dodd-Frank – And More', The American Prospect, February 2017.

[50] The classical reference for an overall view of the US monetary events in a longer time perspective is Friedman, M., Swartz, A., 'The Monetary History of the United States - 1867-1960', Princeton University Press, NBER publications, 1971.

[51] Dayen (2017) affirms that 'by the time the Gramm-Leach-Bliley law removed the Glass-Steagall firewall between commercial and investment banks in 1999, that separation was already effectively wiped out by administrative waivers granted by regulators. The 1994 Riegle-Neal Act that formally allowed banks to open branches across state lines came after a decade of states altering rules to undermine local control of finance. Deregulation of mortgage rules that led to the housing bubble rolled out over a 20-year period. And even then, it took the George W. Bush administration's laissez-faire supervision to really supercharge predatory lending. So while Donald Trump promised on the campaign trail to "dismantle" Dodd-Frank financial reform, he probably won't do it in one shot'.

rules to constrain financial actors in their activities, the way was paved for another major financial crisis. In 2007, the subprime crisis hit the US and spread quickly across borders.

The sequence of events that brought the US financial system to the crisis of 2007-08 and to the regulatory response represented by the Dodd-Frank Act (DFA) in 2010 is a leading example of a regulatory cycle. Many scholars share the view that the policies to be examined are those related to the regulation of the housing and financial markets and government interventions during the boom.

Acharya et al. (2011) identify some crucial regulatory and market failures which contributed to the crisis: the excessive risk-taking in the financial sector, due to mispriced government guarantees; the regulatory focus on individual institution risk rather than systemic risk; the opacity of positions in financial derivatives that produced externalities from individual firm failures; the runs on the unregulated banking sector that eventually threatened to bring down the entire financial sector.[52]

Dell'Ariccia et al. (2008) show evidence of the dangers arising from loosened credit standards during booms; in the US lending standards declined more in areas that experienced larger credit expansions and house price increases and in areas with higher mortgage securitization rates.[53] This paper is relevant for the debate on the cyclical management of prudential regulation and on the potential effects of monetary policy on banks' risk-taking. To the extent that during booms, standards decline more than justified by economic fundamentals, its findings are consistent with the view that bankers have "an unfortunate tendency" to lend too aggressively at the peak of a cycle and that most bad loans results from this aggressive type of lending.

According to Mian (2008), since the early 1990s, the housing pro-ownership policies were intensified; from 1993 to 2007 there was a raising number of legislative actions going into the direction of increasing mortgage credit and support for home-ownership, as reflected by the enhanced housing mandate for the two government sponsored agencies (GSEs), Fannie Mae and Freddie Mac.[54,55] These actions led the agencies to increase their purchases of subprime mortgage-backed securities, thus contributing to the dramatic increase in the volume of risky lending and securitization practices by the private sector. This evidence illustrates the commitment to further

[52] Acharya, V., Cooley, F., Richardson, M., Walter, I., 'Market failures and regulatory failures: Lessons from past and present financial crises', ADBI Institute, Working Paper No. 264, 2011.

[53] Dell'Ariccia, G., Igan, D., Laeven, L., 'Credit booms and lending standards: Evidence from the subprime mortgage market', IMF, Working Paper 106, 2008.

[54] "Fannie Mae" stays for Federal National Mortgage Association (FNMA). "Freddie Mac" stays for the Federal Home Loan Mortgage Corporation (FHLMC).

[55] Mian, A., Sufi, A., Trebbi, F. 'The political economy of the US mortgage default crisis', NBER No. 14468, November 2008; and Acharya, V., Richardson, M., Van Nieuwerburgh, S., White, L., 'Guaranteed to fail: Fannie Mae, Freddie Mac, and the debacle of mortgage finance', Princeton University Press, 2011.

support home-ownership at a time when the market was already booming and ownership was on the rise. No major legislation was passed to impose stricter regulations on the subprime lending. Dagher (2018) states that this period saw an increased preemption of state-level anti-predatory lending laws by bank regulators[56]. Mian (2010) presents a set of evidence showing how externally formed interests helped to shape government policies that encouraged the rapid growth of subprime mortgage credit.[57]

In the economic literature, there is a widespread view that the years leading to the financial crisis saw an increased deregulatory stance of the financial markets and the advent of the so-called light-touch approach to regulation in banking and financial market.

Some stylized facts can help in this regard: the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 was a positive development, allowing banks to diversify away risks. However, this Act opened the door to many subsequent deregulatory initiatives; the pressure to reinterpret and repeal the Glass-Steagall Act intensified during the second half of the 1990s. This can be attributed to the benign experience with expanded bank activities, the role of technological advance in facilitating synergies across businesses, as well to pressures from industry lobbies. In 2000, the US Congress passed the Commodity Futures Modernization Act (CFMA), which removed OTC derivatives transactions from all the requirements of exchange trading and clearing.[58]

The subsequent crisis called for a major reform of the US financial system. The main result was the Dodd-Frank Act (DFA), enacted in 2010, which was the most far-reaching overhaul of financial regulation since the 1930s. Much has been written (and well written) about DFA both

[56] 'The Office of Thrift Supervision preempted federally chartered banks (Savings and Loans) and their operating subsidiaries from state mortgage regulations in 1996. In 2004, at the height of the boom, the OCC followed suit. In the same years, the FDIC was also considering the pre-emption of host-state laws on state banks. The Responsible Lending Act proposed in 2005 sought to preempt state mortgage laws with a federal standard. The Act did not pass. In 2005, Rep B. Miller introduced the Prohibit Predatory Lending Act (2005) which aimed at preventing abusive lending while preserving access to credit, but this bill was never voted on. Related to the oversight of the GSEs, a congressional majority, made of both parties consistently rejected amendments aiming at constraining GSEs balance sheets and limiting their systemic risk'. For this quotation, see Dagher (2018).

[57] Mian, A., Sufi, A., Trebbia, F., 'The political economy of the US mortgage default crisis' The American Economic Review, No. 5, 2010.

[58] Following the 2008 crisis, many economists and policy makers, including earlier opponents of OTC regulations such as Greenspan (see for this reference, Andrews, E. L., 'Greenspan concedes error on regulation', New York Times, October 23, 2008) looked back at CFMA as being one of the factors that contributed to the crisis by removing a multi-trillion dollar swaps market from regulatory oversight. See Acharya (2009), Greenberger, M., 'The role of derivatives in the financial crisis', Testimony before the Financial Crisis Inquiry Commission, Washington D.C., June 30, 2010.

in the economic and legal literature, so I will not go into its details (see Box No. 1 for an overview of its main provisions).[59]

Box No. 1: Overview of the main provisions of the Dodd-Frank Act (DFA).[60]

In July 2010, the US Congress enacted the Dodd-Frank Wall Street Reform and Consumer Protection Act (DFA). DFA has been the most significant reform of financial regulation since the US regulatory response to the Great Depression of the 1930s (the so-called Glass-Steagall Act). DFA has significantly changed the federal financial regulatory landscape, imposed new requirements on a broad array of US financial institutions, prescribed more than 390 agency rulemaking requirements, and mandated 67 studies by various federal entities.

The key elements of DFA most relevant to the scope of this paper include the following.

Systemic Risk

DFA established the Financial Stability Oversight Council (FSOC), as a consolidated interagency body through which regulators can promote market discipline by identifying risks that could arise from material financial distress or failure and the activities of large inter-connected bank or non-bank companies.

The FSOC is chaired by the Secretary of the Treasury and its member agencies include: the Board of Governors of the Federal Reserve System (FRB), the Office of the Comptroller of the Currency (OCC), the Consumer Financial Protection Bureau (CFPB), the Securities and Exchange Commission (SEC), the Federal Deposit Insurance Corporation (FDIC), the Commodity Futures Trading Commission (CFTC), the Federal Housing Finance Agency (FHFA), the National Credit Union Administration (NCUA), and a member with insurance experience appointed by the US President.

The FSOC makes recommendations to the FRB, but has no direct supervisory or regulatory authority; it can designate non-bank financial companies for Federal Reserve supervision as a Systemically Important Financial Institution (SIFI); it may recommend that the SIFIs be more strictly regulated and adhere to prudential standards, enforced by the FRB. Regulatory requirements may include more stringent capital requirements, leverage limits, liquidity requirements, concentration limits, enhanced public disclosures, short-term debt limits, risk management requirements and the need to produce living wills, which are plans created for an orderly liquidation. The DFA also established the Office of Financial Research (OFR) to support

[59] Acharya, V., Cooley, F., Richardson, M., Walter, I., 'Market failures and regulatory failures: Lessons from past and present financial crises', ADBI Institute, Working Paper No. 264, 2011; Kroszner, R. S., Shiller, R.J., Friedman, B.M., 'Reforming US Financial Markets: Reflections Before and Beyond Dodd-Frank, MIT Press, 2011; and Schultz, P. H., 'Perspectives on Dodd-Frank and Finance', MIT Press, 2014.

[60] This Box is derived from the following papers: Mason, J., Balcombe, J., Dalrymple, W., 'Financial Supervision and Regulation in the US - Dodd-Frank Reform', European Parliament, December 2018; and US Department of the Treasury, 'A Financial System That Creates Economic Opportunities - Banks and Credit Unions', June 2017.

the FSOC and its member agencies.

Prudential standards

The DFA required the FRB to adopt enhanced prudential standards for the US Banking Holding Companies (BHCs) having total assets of at least $50 billion, along with certain foreign banking organizations and designated non-bank financial companies. These standards provide for higher capital and liquidity requirements, including requirements for annual supervisor-administered stress tests and living wills.

In addition, banks with assets over $10 billion and less than $50 billion are subject to annual company-run stress test requirements and certain risk-management requirements. Banks with total assets less of than $10 billion are exempt from the stress-test requirement.

Living wills

The DFA requires large BHCs (those with at least $50 billion in total consolidated assets) and non-bank financial companies designated by the FSOC to prepare living wills for their rapid and orderly resolution. The FRB and the FDIC, which may determine that a plan is not credible, review living wills. The firm has 90 days to resubmit a revised living will. If it is assessed negatively, the agencies may impose more stringent prudential requirements and even restrictions on the firms' activities.

Consumer protection

The DFA established the Consumer Financial Protection Bureau (CFPB) as an independent bureau in the Federal Reserve System to have primary regulatory authority for consumer financial products and services under federal laws, including supervisory and enforcement authority with respect to federal consumer financial laws over insured banks, thrifts, and credit unions having assets over $10 billion.

Under its mandate, the CFPB implements and enforces federal consumer financial laws to ensure that all consumers have access to markets for consumer financial products and services that are fair, transparent and competitive. In light of the significant role, that residential mortgage lending played in contributing to the crisis, the CFPB also has authority over all non-bank residential mortgage originators, brokers and servicers. The DFA also established several elements of structural reform of mortgage finance standards.

Volcker Rule

Section 619 of the DFA amended the Bank Holding Company Act to incorporate a new Section 13, which established rules to classify certain activities as commercial banking or investment banking. This Section 13 is known as the Volcker Rule.

Insured depository institutions shall not engage in proprietary trading and shall not acquire or retain any equity, partnership, or other ownership interest in or sponsor a hedge fund or a private equity fund (the so-called cover funds). This prohibition also applies to banks' affiliates and holding companies as well as foreign banking organizations with US operations. A key goal of the Rule is to ban 'proprietary trading' by banking entities by supervising more stringently the trading of short-term assets. The definition of short-term assets includes assets held by banks for

less than 60 days. Regardless of their purpose in the bank, assets held for less than 60 days are assumed to be held for short-term trading purposes and therefore generally prohibited by the Volcker Rule.

Responsibility for administering and supervising regulations pertaining to the Volcker Rule is shared among the Federal Reserve, SEC, FDIC, OCC and CFTC.

Central Clearing of Swaps and Derivatives

The DFA required the exchange trading and clearing of certain derivatives that were previously traded on an over-the-counter basis. The law also increased the reporting requirements for such trading through repositories, and required the registration of certain previously unregistered market participants. Central counterparties can be designated systemically important by the FSOC, which results in additional risk-management standards and potential access to the Federal Reserve discount window.

Investor Protection

The DFA addressed numerous investor protection concerns that arose during the financial crisis, including reform of the credit rating agencies.

Elimination of the Office of Thrift Supervision

The DFA eliminated the Office of Thrift Supervision and transferred its duties to the OCC, the Federal Reserve, and the CFPB. This reorganization made the Federal Reserve the consolidated regulator of savings and loan holding companies with insurance company subsidiaries.

The main objective of the DFA has been to prevent another financial crisis like the one that occurred in 2008 by enhancing regulation and supervision of banks and financial institutions. It has created new supervisory agencies and has redirected oversight and regulatory approaches in order to monitor those financial institutions and products that have the potential to pose a threat to the stability of the US financial system as a whole. It has established a new agency responsible for implementing consumer-financing laws, and introduced a comprehensive reform of the mortgage market, setting out detailed standards and requirements.

Since the beginning, the DFA has raised a significant debate about its effectiveness. It has been subject to heavy criticism as being unnecessarily restrictive and costly for the financial industry, as well as impractical to implement for the supervisory agencies.[61] Opinions remain divided on the extent to which the DFA addresses the roots of the 2007-08 crisis and whether it can prevent the recurrence of similar crises in the future. While some authors have pointed to missing elements in DFA, others see the DFA as an excessive regulatory reaction to the crisis,

[61] Frick, W., 'What You Should Know About Dodd-Frank and What Happens If It's Rolled Back', Harvard Business Review, 2, 2017; Greenspan, A., 'Dodd-Frank fails to meet test of our times', Financial Times, March 29, 2011; and 'The Dodd-Frank Act, Too Big not to Fail,' The Economist, February 18, 2012.

which has created a plethora of regulations and agencies.[62] Market participants have been vocal in affirming that the DFA provisions are overly stringent and impose unsustainable costs of regulatory compliance on financial institutions (above all on smaller ones), limiting the contribution of the financial system to the growth of the economy.

The massive campaign for amendment or even for repeal of the DFA has culminated with the advent of the Trump Administration in 2017, which has signaled a structural change in the attitude of the US authorities towards financial stability and prudential regulation. Under the Trump administration, there have been proposals, executive orders, and legislative actions to roll back the main provisions of the DFA.

4. A proposal for deregulating the US financial system

The President's Executive Order of February 2017 has set the grounds for a new financial policy agenda and the highway for a significant deregulation in the financial system.[63] Directed to the Secretary of the Treasury, who shall consult with the member agencies of the FSOC and report to the President, it had the aim to reshape the U.S financial and regulatory system in a manner consistent with a set of newly established core principles.

These core principles were the following: a) empower Americans to make independent financial decisions and informed choices in the marketplace, save for retirement, and build individual wealth; b) prevent taxpayer-funded bailouts; c) foster economic growth and vibrant financial markets through more rigorous regulatory impact analysis that address systemic risk and market failures, such as moral hazard and information asymmetry; d) enable American companies to be competitive with foreign firms in domestic and foreign markets; e) advance American interests in international financial regulatory negotiations and meetings; f) make regulation efficient, effective, and appropriately tailored; g) restore public accountability within Federal financial regulatory agencies and rationalize the Federal financial regulatory framework.

In June 2017, the Treasury issued a first Report[64] with a focus on the US depository system, making recommendations to reform the DFA by reducing regulatory overlaps and burdens on banks caused by overcomplicated rules and adapting the existing regulatory

[62] See, for example, a February 2012 issue of The Economist about 'Overregulated America'.

[63] Presidential Executive Order on Core Principles for Regulating the United States Financial System, No. 13772, February 3, 2017, 82 Fed. Reg. 9965.

[64] See US Department of the Treasury, 'A Financial System That Creates Economic Opportunities - Banks and Credit Unions', Washington, D.C., June 2017. In response to the Executive Order, in October 2017, the Treasury issued the second and third report respectively on capital market reform (including derivatives and market infrastructures) and asset management and insurance; in July 2018, the Treasury issued the last report on nonbank financial institutions, fintech technology and financial innovation.

requirements to support critical functions of the US economy. Meanwhile Congress has also passed the Financial Choice Act of 2017, which rolled back various aspects of the DFA.

This chapter addresses only the recommendations of the first Report, which have the objective to reform key aspects of the US prudential regulatory framework affecting the depository system[65] as derived from the DFA and the US implementation of the internationally agreed standards.[66]

The rationale guiding these reforms refers to the need to build rules better 'tailored' on the size and complexity of each a financial institution and to reduce the 'unnecessary' regulatory burden on the financial industry. In this way, the resulting regulatory relief - mainly related to banks' capital and liquidity - would have the potential to increase the capacity of banks to provide credit to the economy and increase the liquidity of the US markets.[67]

In the Treasury's view, regulatory restrictions significantly curtail the supply of credit in key areas of the US economy, mainly those with a prevalence of small enterprises, borrowers from small banks that are not in a position to comply with a complex and burdensome regulatory framework. The Treasury contends that its proposed reforms would break the cycle of low economic growth caused by the Act since the crisis of 2008.

However, many contend that the available evidence does not support the Treasury's argument that regulatory burdens have slowed lending and economic recovery. In fact, in the fourth quarter of 2016, the largest US banks all reported increases in their average loan figures. Bank lending has increased between 2012 and 2017, and opponents of reform argue that even if

[65] The US depository system covers banks, savings associations, and credit unions of all sizes, types and regulatory charters. The key segments of the banking system can be grouped as follows: G-SIBs; regional banks (bank holding companies or banks with more than $50 billion in assets that are not G-SIBs); mid-sized banks (bank holding companies or banks with $10 to $50 billion in assets); community banks (bank holding companies or banks with less than $10 billion in assets); foreign banking organizations, which can participate in the US financial system through bank holding companies, branches or agencies; credit unions (member-owned financial cooperatives generally with less than $1 billion in assets). The definition of regional banks includes large internationally active banks (banking organizations with more than $250 billion in assets or more than $10 billion in on-balance sheet foreign exposure) that are not G-SIBs.

[66] See chapter 6 for an overview of the US implementation of the main prudential standards issued by the Basel Committee on Banking Supervision (BCBS).

[67] See the following paragraph from the Treasury report: 'Strong capital requirements are critical in mitigating the harmful economic effects that result from an undercapitalized banking system. While some modest further benefits could likely be realized, the continual ratcheting up of capital requirements is not a costless means of making the banking system safer. Studies of the effects of higher capital requirements indicate that invariably some of the higher costs are passed on to borrowing households and business, although these studies disagree on the magnitude of such effects'.

the economy could have recovered faster without the Act, the benefits of regulation outweigh the costs.[68]

The regulatory requirements under scrutiny were the DFA enhanced prudential standards, which apply to financial companies with total consolidated assets of $50 billion or more, and the company-run and supervisory stress tests, which begin to apply to financial companies with total consolidated assets over $10 billion.[69]

An alternative approach for providing regulatory relief was identified in a 'regulatory off-ramp' from capital and liquidity requirements, nearly from all aspects of the DFA enhanced prudential standards, the Volker rule for depository institution holding companies and insured depository institutions, including the provisions of the stress test regime. This approach requires the institution to keep a sufficiently high level of capital, such as 10% non-risk-weighted leverage ratio.

In the following paragraphs, I will briefly report the main changes advocated in the Treasury Report, with reference to three main areas: regulatory framework (including living wills); stress test regime; foreign banking organizations.

4.1 A new prudential framework

The first change underlined in the Treasury report referred to the necessity to revise upward the $50 billion threshold indicated under DFA Section 165 for the application of the enhanced prudential standards, with the aim to tailor these standards to the effective balance sheet and business model of the BHCs.[70] Moreover, the Treasury recommended reducing reliance upon the advanced approaches for calculating firms' overall risk-based capital requirements, while incentivizing the use of standardized approaches for risk-weighting assets to simplify the capital regime.

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[68] Gelzinis, G., 'Tailoring banking regulations to accelerate the next crisis', Centre for American Progress, Washington, D.C., May 2019. According to this author, the Treasury's recommendations are mostly favorable to large banks by loosening restrictions on traders, relaxing stress tests, and advising regulators to reconsider capital level requirements. The proposed reform gives large banks greater flexibility and the ability to take greater risks with less oversight.

[69] The number of banks required to conduct stress test exercises has increased constantly from the 19 banks of the 2009 Supervisory Capital Assessment Program (SCAP), representing almost 66 per cent of the total US banking assets, to more than 100 of the 2016 Comprehensive Capital Analysis and Review (CCAR), covering more than 80 per cent of the US BHCs assets. See Press Release of the Federal Reserve Bank of New York, 'Statement Regarding the Supervisory Capital Assessment Program', May 7, 2009; and Press Release of the Federal Reserve Bank of New York, 'Federal Reserve Releases Results of Supervisory Bank Stress Tests', June 23, 2016.

[70] The Single-Counterparty Credit Limits were to apply only to banks that are subject to the revised threshold for the application of the enhanced prudential standards.

Risk-based capital requirements were to be revised to only apply to credit unions with total assets more than $10 billion or to eliminate risk-based capital requirements for credit unions satisfying a 10% simple leverage test. In line with the above, the Treasury recommended raising the scope of application for stress testing of federally insured credit unions to $50 billion in assets, from the $10 billion threshold. The rule requiring credit unions with assets greater than $100 million to satisfy a risk-weighted capital framework was also to be repealed. Instead, credit unions of all sizes should have a simple leverage test.

The Treasury invited regulators to simplify the overall capital regime of the US community banks (banks typically with less than $10 billion in assets), as the complex US capital rules implementing Basel III standards were deemed not to be appropriately tailored on them. The target was the exemption of community banks from the risk-based capital regime, while retaining the importance assigned to the Basel III Common Equity Tier 1 (CET1) standard, as an important element of post-crisis rules. In addition, section 171 of the DFA, the so-called Collins amendment, was to be amended, allowing an exemption for these banks.[71]

As to the liquidity requirements, the Treasury recommended: a narrowing of the scope of application of the US liquidity coverage ratio (LCR), to be limited to the G-SIBs; a less stringent standard for the internationally active BHCs that are not G-SIBs; an expanded treatment of certain qualifying instruments as assets of high quality (i.e. including categorizing high-grade municipal bonds). Adjustments to the calculation of the US leverage ratios were considered to address unfavorable impacts of the DFA requirements on market liquidity and low-risk assets. In particular, specific deductions from the leverage exposure had to be made, including for: 1) cash on deposit with central banks; 2) US Treasury securities; 3) initial margins for centrally cleared derivatives.

The US Treasury also recommended changing the threshold for compliance with living wills requirements for BHCs from the threshold of $50 billion to match the revised threshold for application of enhanced prudential standards. This change was justified in order to include only those banks that have a sufficient level of complexity to support the living will requirement.

As to the timeframe for submission of living will, the Treasury recommended a change from a one-year to a two-year cycle. The agencies could require firms to provide notice of material events that occur between living will submissions. If the agencies identify material concerns from such an event, they could require the firm to submit a revised living will. The Treasury recommended removing the FDIC from the living will process in order to improve the effectiveness of the procedure, promoting better regulatory harmonization and a timely response

[71]See Box No. 4 in Chapter 6 for the details about the Collins amendment.

following submission. In addition, the FRB was required to complete its review and give feedback to firms within six months.

4.2 A possible new stress test regime

The US Treasury recommended raising the threshold for participation in the company-run stress tests required by the DFA to $50 billion in total assets (from the level of more than $10 billion). In the same vein, the FRB was requested to revise the threshold for application of the Comprehensive Capital Analysis and Review (CCAR) to match the threshold for application of the enhanced prudential standards. The banking regulators had to be assigned authority to further calibrate this threshold upward based on factors related to a firm's risk profile and complexity.

In addition, the mid-year Dodd-Frank Act Stress Test (DFAST) cycle had to be eliminated and the number of supervisory scenarios should be reduced from three to two (the baseline and the severely adverse scenario). As regards the company-led process, leeway was to be granted for banks to determine the appropriate number of models sufficient to develop appropriate output results, aligned with the scale and complexity of the banking organization.

Box No. 2: The US Stress Test Regime after the DFA[72]

The Dodd-Frank Act Stress Test (DFAST) and the Comprehensive Capital Analysis and Review (CCAR) are Federal Reserve tools to assess whether financial institutions have adequate capital resources to continue to operate under economic/financial stress.[73]

Comprehensive Capital Analysis and Review

CCAR builds upon the 2009 framework for the Supervisory Capital Assessment Program (SCAP) as part of the plan to stabilize the US financial system after the 2008 crisis. CCAR is an annual exercise, which applies to large, complex bank holding companies and US intermediate holding companies, which are subsidiaries of foreign banking organizations with assets of $50 billion or more.

As of 2018, CCAR applies to the 34 largest US BHCs. It includes both (i) a quantitative "stress test" that evaluates a BHC's capital levels over a nine-quarter, forward-looking horizon under three sets of assumptions of economic and financial stress ranging from a baseline set of assumptions to severely adverse assumptions; and (ii) a qualitative assessment of a BHC's capital planning abilities. The Federal Reserve uses the results to review and approve a BHC's capital plan, including planned distributions to shareholders (e.g., dividend payments or stock repurchases).

[72] The data and the content of this box are derived mainly from the Report of the US Department of the Treasury, 'A Financial System That Creates Economic Opportunities - Banks and Credit Unions', Washington D.C. June 2017.

[73] See Board of Governors of the Federal Reserve System, 'Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress Testing Rules and the Capital Plan Rule', February 2018.

Dodd-Frank Act Stress Test

The DFAST is a forward-looking exercise conducted by both the Federal Reserve and financial companies (i.e. company-run) to determine whether they have sufficient capital to absorb losses and support operations during adverse economic conditions. It has a more quantitatively focused scope in that the main outcomes are the stress test results themselves.

The DFAST company-run stress tests apply to BHCs with more than $10 billion in assets. The DFAST is required of all financial companies with assets greater than $10 billion and that are regulated by a primary financial regulatory agency. As a result, the OCC and FDIC also have a role in issuing guidance and examining the company-run DFAST stress tests that are required of banks and savings associations of which they are the primary prudential regulator.

The Federal Reserve conducts the DFAST supervisory-run stress tests, which are required for BHCs with assets of $50 billion or more. The quantitative methodologies, data, and processes used in the supervisory-run DFAST and CCAR are largely the same. However, in conducting the supervisory run DFAST, each BHC and the Federal Reserve must assume capital distributions (e.g., dividends, stock buybacks) that are consistent with a BHC's prior capital distributions, which differ from the CCAR incorporation of a BHC's forward-looking capital plans.

While CCAR and DFAST operate under similar processes and data, they are distinct exercises.

The Treasury also recommended that the FRB consider changing the CCAR process to a two-year cycle, with more frequent reviews to allow revisions to capital plans in the case of extraordinary events. The CCAR qualitative assessment was deemed too subjective and non-transparent and hence had to be eliminated. It was to be adjusted for all banking organizations to conform to the horizontal capital review (as the Federal Reserve has already done for non-complex banking groups with assets of less than $250 billion, to decrease the regulatory burden).

4.3 A different approach for the foreign banking organizations in the US

According to the Treasury Report, the post-crisis regulatory framework for foreign banking organizations (FBOs) operating in the US has imposed excessive capital and liquidity requirements, since the ultimate parent of the FBOs is already regulated at the consolidated level (including its foreign operations) under the applicable international standards.

Box No. 3: The DFA provisions on Foreign Banking Organizations (FBOs)[74]

A variety of business models and sizes characterizes the presence of FBOs in the United States.

[74] The data and the content of this box are derived mainly from: i) the Report of the US Department of the Treasury, 'A Financial System That Creates Economic Opportunities - Banks and Credit Unions', Washington D.C., June 2017; ii) 'Final look: A practical guide to the Federal Reserve's enhanced prudential standards for foreign banks', Deloitte Centre for regulatory strategies, December 2014.

FBOs range from a single U.S branch to a mid-sized retail bank or even to some of the largest US broker-dealers. They cover approximately 20% of the total US banking assets and more than 30% of the business loans in the US and represent a large portion of the primary dealers of the Federal Reserve Bank of New York.

After the crisis, the DFA has defined new rules on FBOs with the aim to level the playing field with the US banks of similar size and complexity.[75]

Enhanced prudential standards

Based upon DFA Section 165, FBOs with $50 billion or more of US total assets are required by the FRB to meet enhanced prudential standards in the fields of capital, liquidity, risk management and stress test. FBOs with global total consolidated assets of $50 billion or more but less than $50 billion in US total assets are subject to less stringent, but still enhanced requirements. These 'smaller' FBOs can comply with the US enhanced rules if they demonstrate that their compliance with home country rules is consistent with the US rules. FBOs with global total assets between $10 and $50 billion can also satisfy the Federal Reserve's stress test requirements by certifying compliance with their home country stress test regime.

FBOs with $50 billion or more in global total consolidated assets are required to submit resolution plans to the Federal Reserve and FDIC in order to demonstrate the resolvability of their US operations under the US bankruptcy code. According to the Treasury Report, this requirement has resulted in more than 100 FBOs being required to submit resolution plans, even if some of them have only a small US presence.

Intermediate Holding Company (IHC)

The Federal Reserve requires FBOs with $50 billion or more in US non-branch assets to establish an intermediate holding company over its US banking and non-banking subsidiaries. This provision aims at providing the Federal Reserve with a platform for consolidated supervision/regulation of US operations of large and complex FBOs consistent with those applicable to US BHCs of a similar size/structure. IHCs of FBOs must meet the same risk-based capital, capital planning, and leverage standards that are applicable to US BHCs with $50 or more in total assets.

A report from Deloitte states that, in addition to the IHC requirement, the original enhanced prudential standards required that FBOs with at least $50 billion or more in total global consolidated assets and $50 billion or more in US non-branch assets to comply with the following: a) minimum 4.5 percent CET1 capital ratio and 6 percent Tier 1 capital ratio with additional capital conservation buffer requirements to avoid limitations on capital distributions; b) US Basel III supplementary leverage ratio; c) US Basel III countercyclical buffer; d) Unrealized gains and losses flowing through the IHC's CET1 capital.

[75] Tarullo, D. K., 'Regulating Large Foreign Banking Organizations', Speech to the Harvard Law School Symposium on Building the Financial System of the Twenty-first Century: An Agenda for Europe and the United States, Armonk, New York, March 27, 2014.

IHCs with trading assets and trading liabilities that equal or exceed 10 percent of total assets or $1 billion will need to obtain separate approval from the FRB for internal market risk models and are subject to market risk rules.

The liquidity buffer for FBOs' US branches and agencies needs to cover funding needs for only 14 days rather than the 30 days. Any cash component of the IHC liquidity buffer cannot be held at an FBO branch or agency, or by an affiliate not controlled by the IHC. The results of the home-country stress testing will have to be reported to the FRB.

US IHCs with assets of $50 billion or more are subject to the annual supervisory and semiannual company-run stress testing requirements similar to domestic BHCs. However, the IHCs of FBOs operating in the US do not have to comply with the US requirements for advanced approaches for capital calculations or the US enhanced supplementary leverage ratio (eSLR), applicable to US BHCs.

In addition, the Federal Reserve Total Loss-Absorbing Capacity (TLAC) and minimum debt rule requires IHCs of FBOs that are G-SIBs to keep a certain amount of internal TLAC (including a certain percentage of debt) issued to their foreign parent company.[76]

According to the Treasury Report, at the end of 2017 approximately 110 FBOs exceeded the DFA threshold of $50 billion in global total consolidated assets and as such are subject to some of the US enhanced prudential standards. Most of these 110 firms are not FBOs with a large US presence, with nearly 80% having less than $50 billion in US assets and nearly 60% having less than $10 billion in US assets.

In order to reinforce the FBOs' appetite to participate in US markets and promote a level playing field between domestic and foreign banks, the Treasury proposed that: i) the application of the enhanced prudential standards and living will requirements to FBOs should be based on their US risk profile rather than their global consolidated assets; ii) FBOs should meet the same revised threshold for the application to US BHCs of enhanced prudential standards.

The threshold for IHCs to comply with CCAR had to be raised from the $50 billion level to match the revised threshold for the application of enhanced prudential standards, subject to the ability of the Fed to impose these requirements on smaller IHCs in cases where the potential risks posed by the firm justify the additional requirements. The Treasury recommended that the Fed review the recalibration of the internal TLAC requirement. In assessing the appropriate calibration, the Fed should consider the foreign parent's ability to provide capital and liquidity resources to the US IHC, provided arrangements are made with home country supervisors for deploying un-allocated TLAC from the parent.

Other IHC regulatory standards such as living will and liquidity should also be recalibrated. In considering such a recalibration, greater emphasis should be given to the degree

[76] See Box No. 4 in Chapter 6 for the details on the US implementation of the BCBS standards.

to which home country regulations are comparable to the regulations applied to similar US BHCs. Where regulations are sufficiently comparable, FBOs should be allowed to meet certain US requirements through compliance with home country regimes.

5. The new US rules on large banks

5.1 The main building blocks of the new approach

In October 2019, the three US supervisory agencies have issued new rules on the most important standards applicable to large domestic and foreign banks operating in the United States. The new rules have established four risk-based categories for determining the applicability and stringency of some of the most important prudential standards. Large banks have been sorted into categories based on several factors, including asset size, interconnectedness and risk profiles; each factor is aimed at capturing the complexity and the risk each bank may pose to its own soundness and to US financial stability as a whole. The result is a complex framework based upon several layers, each involving the responsibility of the different US supervisory agencies.

Specifically, the new framework consists of the following blocks:

- Rules issued jointly by the Office of the Comptroller of the Currency (OCC), the Federal Reserve System (FRB) and the Federal Deposit Insurance Corporation (FDIC) aimed at 'tailoring' prudential requirements for large banks in the field of capital and liquidity coverage ratios;[77]
- Rules of the FRB only to 'tailor' standards on capital stress testing, risk management, liquidity risk management, liquidity stress testing, liquidity buffer requirements, single-counterparty credit limits;[78]
- Rules finalized jointly by the FRB and the FDIC regarding resolution plans of large US domestic and foreign banks.[79]

According to the Federal Reserve Board, these new rules build on the Board's already existing practices of 'tailoring' its requirements to the underlying risks of banks in a manner that

[77] Department of Treasury (Office of the Comptroller of the Currency), Federal Reserve System, Federal Deposit Insurance Corporation, 'Changes to applicability thresholds for regulatory capital and liquidity requirements, Final Rule', Washington, D.C., October 10, 2019.

[78] Federal Reserve System, 'Prudential standards for large bank holding companies, savings and loan holding companies and foreign banking organizations, Final Rule', Washington, D.C., October 2019. This Board-only final rule would apply prudential standards also to certain savings and loan holding companies to increase consistency of the regulatory framework across similarly situated banking organizations.

[79] Federal Reserve System, Federal Deposit Insurance Corporation, 'Resolution plans required, Final Rule', Washington, D.C., October 10, 2019.

is consistent with the provisions of the Economic Growth, Regulatory Relief and Consumer Protection Act (EGRRCPA).[80]

This Act is the U.S federal law signed by President Trump in May 2018, which introduces several modifications to the Dodd-Frank Act.[81] The EGRRPCA raised the $50 billion minimum total consolidated asset threshold to $250 billion for general application of enhanced prudential standards to bank holding companies and provided the FRB with a higher degree of discretion to apply standards to bank holding companies with total consolidated assets of between $100 billion and $250 billion.

The most controversial change introduced by the EGRRPCA concerns mandatory annual "stress tests." Under the DFA, all banks with more than $50 billion in assets were subject to a stress test. The new bill raises the threshold to $250 billion, thereby reducing the number of banks subject to the rule from 5,670 to 12. The collapse of even a few banks close to the limit of that threshold could induce a Lehman Brothers-like turmoil. Moreover, since financial markets tend to be highly correlated, especially in time of crisis, reducing the number of banks subject to the stress test tremendously increases the systemic risk of the financial sector.[82]

To further tailor its standards to large banks the Board invited several round of comments - between October 2018 and May 2019 - on the proposed new framework. Most comments from industry and large banking organizations were supportive of the proposed changes. At the end of the process, the final rules have not changed in substance.

It is worth referring that the new regulatory package was not approved by consensus at the Federal Reserve Board meeting of October 10.[83] The overall package is effective as of January 2020.

5.2 The application of prudential standards under different categories

These US rules define new categories of regulatory standards (for capital, liquidity, stress test and resolution planning) applicable to large US bank organizations (bank holding companies, savings and loan companies) and US intermediate holding companies (IHCs) of foreign banking

[80] Powell, J.H., 'Opening Statement', Board of Governors of the Federal Reserve System, Washington, D.C., October 10, 2019.

[81] When President Trump took office, he promised to give a "major haircut" to this centerpiece of the US response to the 2007– 2008 financial crisis. See Dye, J. 'Trump vows major haircut for Dodd-Frank', Financial Times, April 4, 2017.

[82] Rappeport, A., Flitter, E., 'Congress Approves First Big Dodd-Frank Rollback', The New York Times, May 22, 2018. See also Gelzinis, G. 'Tailoring banking regulations to accelerate the next crisis', Centre for American Progress, Washington, DC, May 2019.

[83] According to the published minutes of this meeting, Governor L. Brainard dissented.

organizations (FBOs).[84] In particular, banks are differentiated using indicators based on size, cross-border activity, short-term wholesale funding, non-bank assets and off-balance sheet exposures.[85] According to the Federal Reserve Board, the overall objective of this new framework is to align the requirements to the actual risk profile of the bank and apply consistent standards across banks falling in the same category.

As to foreign banks, the final framework applies the liquidity coverage ratio (LCR) on the basis of assets held by the IHC, while the other liquidity requirements (e.g. liquidity stress test, liquidity risk management) are determined upon the assets held also by the network of branches/agencies of the FBOs operating in the US (the so-called combined US operations).

The US agencies have decided not to finalize at this stage the proposal on the national implementation of the other liquidity indicator (Net Stable Funding Ratio – NSFR).

The new package does not contain proposals on the application of liquidity requirements on FBOs' US branches. On this issue, the FRB will engage in further evaluation at the international level, possibly within the Financial Stability Board (FSB) and with the directly involved foreign authorities.[86] This because branch liquidity rules should be imposed only after global co-ordination, since not doing so could result in an increased risk of market fragmentation.[87]

Under this approach, there are now four categories of standards:

- ***Category I*** standards apply solely to US G-SIBs, that is banking organizations that have a US G-SIB score of 130 or more under the scoring methodology. They remain subject to the most stringent prudential standards (relative to those imposed under the other categories) to reflect the highest risks these banks pose to the US financial stability.
- ***Category II*** standards apply to US banking organizations and US IHC-FBOs with $700 billion or more in total consolidated assets or with 75 billion or more in cross-border activity and $100 billion or more in total consolidated assets (that do not qualify as US G-SIB). These standards are based upon global standards and include other prudential standards appropriate to very large and cross-border banks.
- ***Category III***. Under this Category there are US banking organizations and US IHC-FBOs with $250 billion or more in total consolidated assets or with at least $75 billion in weighted

[84] The existing US rules require foreign banking organizations with $50 billion or more in US non-branch assets to establish a US intermediate holding company and to hold its ownership interests in all US subsidiaries through its US IHC. See Box No. 3 in Chapter 4 for the details.

[85] These indicators are calculated at the level of the top-tier banking organization, meaning top-tier bank holding company for US organizations and IHC for foreign ones.

[86] Quarles, R.K., 'Opening Statement', Board of Governors of the Federal Reserve System, Washington, DC, October 10, 2019.

[87] Stacey, K., Noonan, L., 'Fed rules out liquidity gauge for foreign banks' Financial Times, October 11, 2019.

short-term wholesale funding, nonbank assets, off-balance sheet exposures and $100 billion or more in total consolidated assets (that are not subject to Category I or II standards). These banks are subject to enhanced standards that are reduced relative to Categories I and II.

- Category IV standards apply to US banking organizations and US IHC-FBOs with $100 billion to $250 billion in total consolidated assets that are not subject to Category I, II, or III standards. They are subject to further reduced requirements relative to Categories I, II, and III.

The new rules eliminate the enhanced regulatory requirements for banking organizations with less than $100 billion in total assets.[88]

The following table gives the list of US banking organizations and IHC-FBOs included in each category.[89]

Table 1: List of domestic and foreign banks by Category[90]

	Category I	Category II	Category III	Category IV
US Domestic Banking Organizations	Bank of America Bank of New York Mellon Citigroup Goldman Sachs JPMorgan Chase Morgan Stanley State Street Wells Fargo	Northern Trust	Capital One Charles Schwab PNC Financial US Bancorp	Ally Financial American Express BB&T Corp. Citizens Financial Discover Fifth Third Huntington KeyCorp M&T Bank Regions Financial SunTrust Inc. Synchrony Financial
Intermediate Holding Company (IHC) of Foreign Banking Organizations (FBOs)			Barclays Credit Suisse Deutsche Bank HSBC Toronto-Dominion UBS	Bank of Montreal BNP Paribas MUFG Royal Bank of Canada Santander

[88] The US banks with total consolidated assets between $50 and $100 billion are estimated to be Comerica Inc., CIT Group Inc., E-TRADE Financial, NY Community Bancorp, Silicon Valley Bank. BBVA is the only HIC of FBO in this group.

[89] This table is based upon the Federal Reserve Board estimate based upon the data referred to the first quarter 2019; there are no public new estimate available for the time being.

[90] Board of Governors of the Federal Reserve System, Draft Final Rules to tailor prudential standards to large banking organizations, Memorandum, Annex B, Washington, DC, October 10, 2019.

5.3 The requirements applicable under each category

The capital requirements defined under Category I apply to US G-SIBs only, whereas the capital requirements under Categories II, III and IV apply to both large US banking organizations and US IHC-FBOs. This means that the capital requirements applicable to US intermediate holding companies are generally consistent with those applicable to US IHC-FBOs of similar size and risk profile, in line with the principle of equality of treatment; this approach is also consistent with the agreements reached by the Basel Committee on Banking Supervision (BCBS) since 2006.[91]

For US banking organizations (and for foreign banking organizations**)** the applicable category of regulatory capital and liquidity requirements is measured at the level of the top-tier banking organization (and top-tier US intermediate holding company); it applies to any of its depository institution subsidiaries for purposes of capital requirements or to any of its depository institution subsidiaries with $10 billion or more in total consolidated assets for liquidity requirements.

1) Requirements applicable to Category I. The new rules do not include any changes to the capital or liquidity standards applicable to the US G-SIBs; they continue to include the most stringent requirements, including those based upon standards that reflect agreements reached at the BCBS level.

- *Capital.* G-SIBs are subject to: both the advanced and the standardized approaches for the calculation of the capital ratios; requirement to recognize (in regulatory capital) unrealized gains/losses on securities; countercyclical capital buffer; enhanced supplementary leverage ratio standards; G-SIB surcharge; TLAC requirements.
- *Liquidity.* G-SIBs will continue to be required to hold an amount of High Quality Liquid Assets (HQLA) equal to at least 100% of its total net cash outflows as calculated under the Liquidity Coverage Ratio (LCR) rule each business day.[92]
- *Stress Testing.* Banking organizations in this category are (on an annual basis) subject to: company-run stress test; supervisory stress test; submission of capital plan.
- *Resolution plan.* G-SIBs are required to file resolution plans every two years, alternating between full and targeted plans. Targeted plans include core areas like capital and liquidity. A two-year cycle is consistent with the current filing rate for the G-SIBs.

[91] 'The framework would be generally the same for domestic and foreign banks. US regulators have a long-standing policy of treating foreign banks the same as we treat domestic banks. That is the fair thing to do. It also helps US banks because banking is a global business and a level playing field at home helps to level the playing field for US banks when they compete abroad'. See Powell, 'Opening statement', cited above.

[92] For Category I the new rules include a full daily NSFR (100%).

2) Requirements applicable to Category II. These standards include requirements based on global standards developed by the BCBS and other prudential standards appropriate for very large or internationally active banking organizations.

- *Capital*. Capital standards continue to include: internal model risk-based capital requirements; countercyclical capital buffer; supplementary leverage ratio; requirement to recognize (in regulatory capital) unrealized gains/losses on securities.
- *Liquidity*. The new rules apply the full (100%) LCR requirements to banking organizations subject to Category II standards.[93]
- *Stress Testing*: Banks are (on an annual basis) subject to: company-run stress test; supervisory stress test; capital plan submission.
- *Resolution plan*. Domestic and foreign firms are required to file resolution plans every three years, alternating between full and targeted plans.

3) Requirements applicable to Category III. These standards are less stringent than the requirements included in Category I or II to reflect the relatively lower risk profiles of the banks in this category. However, these requirements reflect the elevated risk profile of these banking organizations relative to smaller and less complex banks subject to Category IV standards.

- *Capital*. These banks are not subject to internal models-based risk-based capital requirements and to the requirement to recognize unrealized gains/losses on securities in regulatory capital. These banks remain subject to the countercyclical capital buffer and to the supplementary leverage ratio.
- *Liquidity*. A banking organization subject to Category III with a relatively lower reliance on short-term wholesale funding (less than $75 billion) is subject to a reduced LCR, calibrated at 85 percent of the full LCR requirement.[94] Banks with short-term wholesale funding of $75 billion or more are subject to the full set of LCR requirements applicable under Categories I and II.[95]
- *Stress Testing*: These banks remain subject to annual supervisory stress testing and submission of capital plan; they are required to conduct and publicly report the results of a company-run stress test every two years.
- *Resolution plan.* Domestic and foreign banks in this category are required to file resolution plans every three years, alternating between full and targeted plans.

4) Requirements applicable to Category IV. These standards include reductions from current requirements to reflect the relatively lower risk of these banks. Banks in this category are

[93] For Category II the new rules include a full daily NSFR (100%).
[94] For Category III in this case the rules include a reduced NFSR at 85%.
[95] For Category III in this case the rules include a full NFSR at 100%.

generally subject to capital and liquidity requirements that are similar to those applicable to banks with less than $100 billion in assets.

- *Capital*: These banks are not subject to: internal models-based risk-based capital requirements; requirement to recognize unrealized gains/losses in regulatory capital; countercyclical capital buffer; supplementary leverage ratio.[96]
- *Liquidity*. Generally, banks in this Category are not subject to an LCR requirement. If a holding company has $50 billion or more in weighted short-term wholesale funding (STWF) it is subject to a reduced LCR requirement, calibrated at 70 percent of the full LCR requirement[97]. If a bank shows a reliance on short-term funding below the above threshold it is not subject to an LCR requirement.
- Category IV standards also include quarterly (rather than monthly, as it is for Categories I, II, III) internal liquidity stress testing and simplified liquidity risk-management requirements.
- *Stress Testing*: These firms are subject to supervisory stress testing every two years, rather than annually, and are no longer required to conduct and publicly report the results of a company-run stress test. They remain subject to the annual submission of the capital plan.
- *Resolution plan.* Domestic banks in this category, owing to their limited systemic footprint, are not required to file resolution plans. Foreign banks with $250 billion or more in global assets, including those in this category, that do not fall in any other category are required to file a reduced resolution plan every three years, reflecting their limited US systemic importance.

For all banking organizations, including the US G-SIBs, the new rules have eliminated the mid-cycle company-run stress testing requirement, given (according to the Federal Reserve Board) the burden it posed without a commensurate benefit. However, the Board retains the ability to adjust the required frequency based on the risk profile of the bank.

Moreover, the final rules have also removed the adverse scenario from the list of the required macroeconomic scenarios. In addition, the minimum threshold for state member banks to conduct company-run stress test has been revised from $10 to $250 billion in assets. Banks falling under Category III have been moved to a two-year cycle for the company-run stress test. For the banks in Category IV the supervisory stress test regime is conducted every other year.

In the following table, I provide an overall picture of the most important aspects of the new framework.

[96] These banks will be subject to the generally applicable risk-based capital requirements and the US leverage ratio.

[97] For Category IV in this case the rules include a reduced NFSR at 70%.

Table 2: Requirements for domestic and foreign banks by Category[98]

	Category I	Category II	Category III	Category IV
Capital requirements	**TLAC requirements** **Stress Testing** • Annual company-run stress testing • Annual supervisory stress testing • Annual capital plan submission **Risk-Based Capital** • G-SIB surcharge • Advanced approaches • Countercyclical Buffer • Recognition unrealized gains/losses **Leverage capital** • Enhanced supplementary leverage ratio	**Stress Testing** • Annual company-run stress testing • Annual supervisory stress testing • Annual capital plan submission **Risk-Based Capital** • Advanced approaches • Countercyclical Buffer • Recognition unrealized gains/losses **Leverage capital** • Supplementary leverage ratio	**Stress Testing** • Company-run stress testing every other year • Annual supervisory stress testing • Annual capital plan submission **Risk-Based Capital** • Countercyclical Buffer • No recognition unrealized gains/losses **Leverage capital** • Supplementary leverage ratio	**Stress Testing** • Supervisory stress testing (two-year cycle) • Annual capital plan submission **Risk-Based Capital** • No Recognition unrealized gains/losses
Liquidity requirements (IHC level)	• Full daily LCR (100%)	• Full daily LCR (100%)	•If STWF < $75b: Reduced daily LCR (85%) • If STWF ≥ $75b: Full daily LCR (100%)	• If STWF < $50b: No LCR • If STWF ≥ $50b: Reduced monthly LCR (70%)
Resolution planning	Resolution plans every two years, alternating between full and targeted plans.	Resolution plans every three years, alternating between full and targeted plans	Resolution plans every three years, alternating between full and targeted plans.	No resolution plans

5.4 The impact analysis conducted by the Federal Reserve Board

The Federal Reserve Board has conducted an impact assessment of the new rules on the capital requirements for domestic and foreign banking organizations set by the reform. The FRB has also evaluated the impact of the final rule on liquidity standards, focusing on the potential changes in the applicability and the stringency of the LCR requirement.

According to this analysis, the final rules would: i) significantly reduce regulatory requirements for banks subject to Category IV standards; ii) modestly reduce requirements for

[98] Board of Governors of the Federal Reserve System, 'Draft Final Rules to tailor prudential standards to large banking organizations, Memorandum, Annex B', Washington, D.C., October 10, 2019.

banks subject to Category III standards; iii) largely keep in place the existing requirements for the largest and most complex banks subject to Category I or II standards.

In particular, regulatory capital requirements will be lowered by about $8 billion and $3.5 billion for domestic and foreign banking organizations subject to Category III and IV standards, respectively, or about 60 basis points of total risk-weighted assets for these banking organizations. Regulatory capital requirements will not change for banking organizations subject to Category I or II standards.

The final rules would not modify liquidity requirements for firms subject to Category I or II standards and would modify liquidity requirements only for firms subject to Category III or IV standards. In particular, the Board estimated that total HQLA requirements would decrease by $48 billion and $5 billion for domestic and foreign banking organizations respectively. The decrease would represent about a 2% reduction in the liquidity requirements for both domestic and foreign banking organizations with more than $100 billion in assets. The decrease in the liquidity requirements of banking organizations subject to Category III standards accounts for the majority of the total liquidity requirement reduction, both among domestic and foreign banking organizations. For banking organizations in Category III, the decrease would represent an approximately 8% reduction in liquidity requirements.

The Board also estimated the impact of the final rule on the HQLA holdings of the affected banking organizations. According to these estimates, total HQLA holdings are expected to decrease by about $56 billion and $6 billion at domestic and foreign banking organizations respectively. The decrease would represent an approximately 2% reduction in the HQLA holdings for both domestic and foreign banking organizations with greater than $100 billion in total assets. The estimated impact on HQLA holdings is about equally distributed across Category III and Category IV banking organizations and would represent an approximately 8 percent reduction in the HQLA holdings of these organizations.

The Board also expects the final rule to reduce compliance costs as a result of certain banking organizations no longer being subject to the advanced approaches capital requirements and as a result of LCR and certain capital requirements no longer applying to banking organizations with total consolidated assets of between $50 billion and $100 billion.

6. Are the US authorities challenging the global standards?

6.1 The US implementation of the international requirements

This chapter is aimed at illustrating another significant change for the U.S supervisory agencies under the new approach. It refers to the US stance with reference to the implementation of the standards that have already been agreed upon at the global level, and to the negotiations

affecting future prudential rules within the international standard-setting bodies.[99] Finally, the US regulatory approach to COVID-19 is assessed in terms of its consistency with some BCBS rules.

In the Treasury's view, the US banking supervisory agencies (FRB, FDIC, OCC) have so far implemented some of the international standards finalized by the BCBS and the FSB in a manner that is deemed to be more conservative for the US G-SIBs and other large internationally active US banks. This more stringent approach could create an undue burden of higher costs to US economy, while making US banks less competitive globally.[100]

Banking regulators have been invited to postpone the implementation of some still pending BCBS standards, since they are assessed to represent an additional regulatory burden on top of the existing requirements.[101] In order to alleviate the consequences derived from the more stringent US implementation, a recalibration is deemed necessary with respect to the US G-SIB risk-based surcharge, including its focus on the degree of reliance on short-term wholesale funding, the mandatory minimum debt ratio included in the FRB Total Loss-Absorbing Capacity (TLAC) and minimum debt rules and the enhanced supplementary leverage ratio (eSLR).

Box No. 4: The US implementation of the international regulatory standards

In this box, I refer to the so-called Basel III standards. It is important to say that under the definition of 'Basel III standards' are included the several reforms of the prudential rules adopted by the BCBS after the GFC and addressed to the large internationally active banks. These reforms refer to the prudential standards pertaining to the various aspects of the banking management issued since 2010 (also adapting and modifying the standards already in force at that time).

In particular, with the notion of '2010 Basel III standards', I refer to the interventions in the field of capital adequacy, liquidity and leverage; they include also the enhanced prudential requirements for the large banks systemically relevant on a global scale.

[99] US Department of the Treasury, 'A Financial System That Creates Economic Opportunities – Banks and Credit Unions', Washington, D.C., June 2017. See also the letter from the MP P. McHenry to the Chair of the FRB J. Jellen, on January 31, 2017, where he strongly (and using unusual words) recommended the FRB to align its strategic objectives in international negotiations on prudential standards to the new priorities of the Trump administration.

[100] An overview of the US implementation of the BCBS most relevant standards is in Box No. 4 in this Chapter.

[101] The two standards referred to in the report are the Net Stable Funding Ratio (NSFR - due for 2019) and the Fundamental Review of the Trading Book (FRTB), originally planned for 2017. It is worth recalling here that the BCBS has revised the FRTB extensively in 2018. In January 2019, the Group of Governors and Heads of Supervision (GHOS) endorsed the new standards with implementation starting in 2022. In the light of the decision by GHOS to postpone by one year the whole package of the 2017 Basel III, due to the COVID-19 emergency, the new FRTB will be implemented from 2023.

The '2017 Basel III standards' represent the last part of the post-GFC financial repair, finalized in December 2017 by the BCBS and aimed at addressing the excessive volatility of the risk-weighted assets of the international banks.

In the years between 2014 and 2017, the BCBS has issued a number of other important standards (for example those relative to the net stable funding ratio, the market risks, the margin requirements for non-centrally cleared derivatives, the rules on loss-absorbing capacity), in order to complete the revision of the prudential framework to address the several shortcomings outlined by the GFC.

The US implementation of the Basel III standards has been differentiated across banking organizations principally through two approaches: 1) the 'internationally active' bank threshold, which is generally set at having at least $250 billion in assets or at least $10 billion in total on-balance sheet foreign exposure; 2) the G-SIB methodology.

Internationally active banks are subject to a number of new requirements including the liquidity coverage ratio (LCR), the supplementary leverage ratio (SLR) and the countercyclical capital buffer. G-SIBs are subject to the most extensive capital requirements, including those on capital buffers, leverage ratio, Total Loss-Absorbing Capacity (TLAC) and minimum debt rules.

As of the end of 2018, the US banking rules involving additional stringency (with respect to other BCBS jurisdictions) would include the following: the G-SIB risk-based capital surcharge; the enhanced Supplementary Leverage Ratio (eSLR); the TLAC and long-term debt rule; the calculation of risk-weighted assets (RWA); the LCR.[102]

G-SIB Risk-based Capital Surcharge

For the US BHCs qualifying as G-SIBs under the FRB framework the final rules adopted in 2015 by the FRB resulted in estimated risk-based capital requirements higher than those required under the BCBS methodology. These US rules have been phased-in over a period of 3 years and became fully effective on January 1 2019.

US G-SIBs have to calculate their capital surcharges under two methods and shall use the higher of the two. The first is based on the BCBS methodology and takes into account size, interconnectedness, cross-jurisdictional activity, substitutability and complexity; the second includes similar factors but is generally calibrated to result in higher capital requirements and replaces substitutability with a measure that captures the bank's reliance on short-term wholesale funding.

There are 30 or more US BHCs that calculate a G-SIB score every year; currently only 8 meet the qualifying score of 130 or more to be eligible as a US G-SIB and are therefore subject to the FRB G-SIB surcharge.

Leverage Ratio

[102] Several other G20 jurisdictions have adopted internal rules in excess of the internationally agreed standards, among them the U.K and Switzerland, which have defined additional surcharges for the leverage ratio and risk-based capital requirements. See Bank of England, 'Supplement to the Financial Stability Report: The Framework of Capital Requirements for UK banks', December 2015.

The US has implemented this BCBS standard (which became effective in 2018) under the supplementary leverage ratio framework, which requires banks allowed to use advanced approaches to hold a minimum SLR of 3%, calculated with a numerator of Tier 1 Capital and denominator of on-balance and off-balance sheet exposures.[103]

In addition, US G-SIBs and their insured depository institution subsidiaries have to comply with an enhanced supplementary leverage ratio rule, according to which they must have a leverage capital buffer greater than 2 percentage points above the minimum SLR requirement of 3%, for a total of more than 5%, to avoid restrictions on capital distributions and discretionary bonus payments.

Moreover, insured depository institution subsidiaries of these BHCs must keep at least a 6% SLR to be considered "well capitalized" under regulatory prompt corrective action frameworks.

Total Loss-Absorbing Capacity (TLAC)

The US implementation of the December 2016 FRB final rule on TLAC - to apply to the 8 US G-SIBs and the US operations of foreign G-SIBs - is largely consistent with the international FSB TLAC standard.

However, the US rule is in some instances more conservative. It requires that covered institutions hold TLAC in an amount being the greater of (i) 18% of risk-weighted assets plus regulatory buffers and (ii) 7.5% of total leverage exposure plus a 2% buffer (the FSB standard refers to 6.75% of leverage ratio exposure and 18% of risk-weighted assets plus capital buffers).

In addition to the TLAC ratio, the US rule requires that covered institutions issue eligible long-term debt in an amount that is the greater of (i) 6% of risk-weighted assets plus the G-SIB surcharge and (ii) 4.5% of total leverage exposure (the FSB standard requires long-term debt equal to 33% of the TLAC). Eligible long-term debt includes the unpaid principal of eligible debt securities, subject to haircuts for amounts due to be paid within 2 years.

Compliance with the rule is by June 1 2019. The US TLAC and long-term debt requirement differs from the FSB standard in that it requires a higher minimum amount of long-term debt and sets stricter criteria for such long term debt.

Calculation of risk-weighted assets under the 2010 Basel III Risk-Based Capital

Based upon the Section 171 of the DFA, often referred to as the Collins Amendment, large banking organizations subject to the advanced approaches rule and relying on internal models must calculate their risk-based capital ratios and meet regulatory minimum capital requirements under the higher of the requirements calculated using: (i) risk-weighted assets as calculated under Advanced Approaches and (ii) risk-weighted assets under Standardized Approaches.

[103] This is referred to as a "supplementary" leverage ratio because US banking regulators have long required US banks to meet a US leverage ratio, calculated with a numerator of Tier 1 Capital and a denominator of total on-balance sheet assets (reported on a GAAP basis).

As to operational risk, US regulators have adopted - since 2007 - only the advanced measurement approach for application to banks that use the advanced approaches; this implies an additional stringency because of a supervisory overlay.

As to securitizations, banks are subject to a risk-weight floor of 20% based on a generally more conservative risk-weight approach, known as the simplified supervisory formula. This approach was adopted because the DFA generally prohibits reliance on external ratings.

Liquidity Coverage Ratio

The FDIC, OCC, and FRB jointly adopted the final LCR rule in September 2014. This rule contains a stricter definition of high quality liquidity assets (e.g. it excludes most municipal securities) and uses the largest liquidity mismatch over a 30-day stress period (while the BCBS standard focuses on cumulative cash flows over the 30-day window).

It applies to banks with $250 billion or more in assets or $10 billion or more of on-balance sheet foreign exposure and their depository institution subsidiaries with $10 billion or more in assets; bank holding companies with assets in excess of $50 billion are subject to a modified, less stringent version of the rule.

Net Stable Funding Ratio (NSFR)

In 2016 the FDIC, OCC and FRB proposed a US rule implementing the NSFR international standard. The proposed US NSFR uses a stricter definition of high-quality liquid assets (as for the US LCR) and is tailored to the size of the organization, with more stringent requirements for holding companies with $250 billion or more in assets or $10 billion or more in foreign exposure and their depository institution subsidiaries with $10 billion or more in assets.

Less stringent requirements apply to holding companies with less than $250 billion in assets and less than $10 billion in total on-balance sheet foreign exposure but in excess of $50 billion in assets. The proposed rule does not apply to institutions with less than $50 billion in assets.

Single-Counterparty Credit Limits (SCCLs)

In March 2016 the Federal Reserve, as required by section 165 of Dodd-Frank, proposed a single counterparty credit limit rule. The rule would apply to bank holding companies with assets of $50 billion or more, and the rule's credit limits increase in stringency with a firm's systemic importance. For internationally active banks (i.e., those with $250 billion or more in assets or $10 billion or more in on balance sheet foreign exposure), the rule would limit aggregate net credit exposure to a single-counterparty and its subsidiaries on a consolidated basis to 25% of a bank's Tier 1 capital. G-SIBs would also be subject to a limit of 15% of tier 1 capital if the counterparty is another systemically important financial institution.

Non-internationally active banks with $50 billion or more in total assets would be subject to a 25% limit against the bank's regulatory capital, which is a broader measure than tier 1 capital. The proposed rule is similar to the BCBS large exposure standard.

As to 2017 Basel III, the Treasury recommends that the banking agencies should carefully consider its implication on the US financial system before start implementation. Treasury supports efforts to finalize remaining elements of the international reforms at the BCBS, including establishing a global risk-based capital floor in order to promote a more level playing field for US firms and strengthen the capital adequacy of global banks. However, a proper assessment has to be done in order to take into account that US banks already operate with higher levels of capital compared to their international counterparts.

For the future, the US regulators should provide clarity on how the US specific adoption of any new BCBS standards will affect capital requirements and risk-weighted asset calculations for US banks. In general, in the Treasury view, these agencies have to reconsider their participation in the international negotiations under the guiding principle of a proper assessment of their alignment with domestic objectives and their impact on the US financial system. Finally, Treasury has recommended an increased transparency and accountability in international financial regulatory standard-setting bodies. Improved inter-agency coordination should be adopted to ensure the best harmonization of US participation in the international standard setters.

6.2 Some concerns arising from the new US rules on large banks

The new US rules on large banks introduce a number of significant changes to the main building blocks of the US post-GFC regulation reforms.

These reforms had substantially improved the resiliency of the U.S large banks and of the US financial system as a whole. Their major achievements included better quality and an approximate doubling in the overall amount of regulatory capital; more than doubled liquid asset buffers; a rigorous and dynamic stress test framework; improvements in the resolvability framework. More importantly, it is worth recalling that the US regulatory response to the GFC was built in a manner largely consistent with the global standards developed by the G20/FSB in the years after the crisis.[104]

Under the new framework, each individual change is justified by the US supervisory agencies in terms of the need to "tailor" regulation and supervision to the effective risks posed by each individual bank.[105] However, these regulatory actions, when taken together, could

[104] FSB, 'Implementation and Effects of the G20 Financial Regulatory Reforms', 5th Annual Report, Basel, October, 2019.

[105] According to Vice-Chair Quarles, the new rules have developed 'a regulatory framework that more closely ties regulatory requirements to underlying risks, in a way that does not compromise the strong resiliency gains we have made since the financial crisis'. See Quarles, 'Opening Statement', cited above.

potentially soften the impact of the 2010 Dodd-Frank Act and introduce a degree of deregulation in the US financial system.[106]

Some possible sources of concern stemming from these new rules are discussed below.

The introduction of waivers/reduced calibration for key prudential requirements (for large banks) would be not take into account the fact that the standards developed at the global level (such as those of the BCBS) are minimum standards; single jurisdictions are allowed to go above (not below) the internationally agreed levels.[107] The implementation of such new rules has the potential to introduce some differentiation of the US prudential regulation (in the areas affected by the reform) from global standards involving an issue of level playing field globally. Moreover, such a situation might exacerbate the growing concerns of the G20 on the need to ensure that all jurisdictions follow a path of consistent (and timely) implementation of the international standards.

The immediate outcome of these new rules seems to be a reduction in key prudential requirements applicable to banks that are not small banks.

As to capital requirements, according to Governor L. Brainard[108], domestic and foreign banking organizations with $250 billion and $700 billion in assets, which collectively account for $2.7 trillion in total assets, would face lower capital requirements by $9 billion. Others refer to even more relevant capital reduction across the US banking system.[109] As to liquidity**,** the new rules would substantially reduce the liquidity requirements for US domestic banks with between $100 and $700 billion in assets for amounts above $200 billion.[110]

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[106] Gelzinis, G. 'Tailoring banking regulations to accelerate the next crisis', Centre for American Progress, Washington, D.C., May 2019.

[107] See for example, BCBS, 'Basel III: International framework for liquidity risk measurement, standards and monitoring', December 2010.

[108] L. Brainard, 'Statement' at the Board of Governors meeting, Washington, D.C., October 10 2019.

[109] According to G. Gelzinis 2019, cited above, 'The Fed and OCC issued a proposal that would lower the capital buffers at the taxpayer-backed commercial banking units of the eight Wall Street G-SIBs by $121 billion, or 20 percent. Additionally, the proposal could lead to an $86 billion reduction over time at their holding companies, as banks seek to optimize their other capital requirements'.

[110] For US domestic banks in Category III, which account for $1.500 billion in assets overall – a group that includes Capital One, Charles Schwab, PNC Financial, US Bancorp - the LCR requirement is reduced by 15 per cent (i.e. $34 billion) if their reliance on short-term wholesale funding is less than $75 billion. For US domestic banks in Category IV, which account for $1.900 billion in assets overall - in this group you may find, among others, American Express, Ally Financial, Citizens Financial - the LCR requirement is eliminated if their reliance on short-term wholesale funding is less than $50 billion (meaning a reduction of the LCR requirement by $167 billion); in case this reliance is above $50 billion, the LCR is reduced by 30 per cent. See Brainard (2019), cited above. For Foreign Banking Organizations (FBOs), the picture is more mixed, with some facing heightened requirements. Under the new rules Barclays, Credit Suisse, Deutsche Bank, HSBC, Toronto Dominion, UBS have been classified among the largest and most complex banks in Category III,

From a regulatory point of view, some concerns refer to the possibility - allowed to banks in Category III and IV - to avoid taking into account the unrealized gains/losses on securities for the calculation of their regulatory capital. That requirement was aimed at addressing an important drawback stemming from the crisis and at ensuring that bank regulatory capital accurately reflects the amount fully available to absorb both realized and unrealized losses on financial markets.

Furthermore, the new rules allow banks in Category III and IV not to apply the so-called advanced approaches in the calculation of the risk-based capital requirements. In this way, these banks can take advantage of this capital simplification rule that was originally aimed at reducing burden for smaller banks, while their size, capital structure and risk profile would continue in most cases to justify a more risk sensitive approach.

Another source of concern regards the choice to change the basis for the calculation of the LCR requirement for FBOs. The new rules apply the LCR on an Intermediate Holding Company (IHC) basis rather than on the combined US operations of FBOs (this is a wider measure of risk that includes also the liquidity risks posed by the network of branches and agencies of FBOs). It is to be noted that in 2014 the Federal Reserve Board had decided to implement the LCR in the US based upon this wider measure, recognizing the important liquidity risks associated with the US branches and agencies of FBOs.[111]

Another element to take into consideration is that the changes to the bank stress-testing regime might weaken this important regulatory tool. Stress tests are meant to ensure banks have sufficient capital buffers to deal with a severe financial shock and economic downturn, while still serving the credit needs of the real economy. The first stress tests were conducted in 2009, and since then they have played an important role in improving both the capital levels and internal capital planning capabilities at big banks. These changes could make the stress tests easier for banks and reduce the utility of this tool. As a result, bank balance sheets and internal capabilities might be less resilient to a financial shock.

In addition to the proposed changes to the liquidity rules, the new US rules change the living-wills process to a two-year cycle, instead of the current practice of an annual cycle, as well as removing the FDIC from the process. The FDIC has considerable experience and expertise in winding down failed banks and is the regulator in charge of dealing with the failure of a large, complex financial institution, if the Ordinary Liquidation Authority (OLA) is used. Removing

while Bank of Montreal, BNP Paribas, MUFG, Royal Bank of Canada, Santander are in Category IV. See Ackerman, A., 'Federal Reserve gives large banks a break on post-crisis rules', WSJ online, October 11, 2019.

[111] Brainard (2019), cited above, emphasizes that one of major lessons of the crisis is that U.S branches of foreign banks - which serve as important sources of dollar funding for their parent organization - can face important risks of run during period of stress given their reliance on short-term wholesale funding. According to Stacey, K., Noonan, L., 'Fed rules out liquidity gauge for foreign banks' FT, October 11, 2019, Deutsche Bank potentially has the most to gain from this decision, since it has the biggest branching of any other foreign lender with assets of $175 billion in its main US branch.

the FDIC from the process and blinding the very regulator in charge of winding down a failed firm makes little sense and is counterproductive.

These changes would weaken the effectiveness of the living-wills process, which has been instrumental in improving bank liquidity. Large, complex financial institutions are ever changing and it is important for firms and regulators to maintain an up-to-date plan for a firm's orderly failure. Liquidity and other deficiencies can arise rapidly, and submitting the resolution plans every two years would create a regulatory blind spot.

The new rules would entirely eliminate the resolution planning requirement for banks with between $100 billion and $250 billion in assets. These are not small banks. The new rules would also decrease the frequency of submissions for all banks with more than $250 billion in assets. Initially, resolution plans submissions were required annually, but over time, the process shifted to the current biennial timetable. Under the new rules, banks with between $250 billion and $700 billion in assets would submit full plans only once every six years.

The US G-SIBs would be required to submit a full resolution plan once every four years rather than every year. Less stringent requirements in this field could decrease the likelihood of orderly failures and increase the likelihood of taxpayer bailouts in the event of a crisis.

6.3 The US regulatory response to COVID-19: a further deviation from Basel?

The economic and financial disruptions precipitated by the COVID-19 pandemic triggered an unprecedented response by the US authorities. The FRB applied its usual tools to mitigate these effects, cutting its policy rates and providing liquidity to the banking system, as well as tools rarely used or newly created, including several liquidity and credit facilities.[112] These interventions are aimed at ensuring that credit continues to flow to households and businesses during this emergency and that the financial system does not amplify the shock to the economy.

The FRB has taken several supervisory and regulatory actions to support financial institutions and the economy. In particular, the FRB has: encouraged banks to use their regulatory capital and liquidity buffers, so they can increase lending during the downturn (to preserve capital, big banks also are suspending buybacks of their shares); eliminated banks' reserve requirement; relaxed the leverage ratio that large and community banks have to maintain; relaxed the growth restrictions imposed on, as part of an enforcement action related to widespread

[112] The main elements of FRB response to the COVID-19 emergency can be referred to: Cheng, J., Skidmore, D., Wessel, D., 'What's the Fed doing in response to the COVID-19 crisis?', Brookings Institute, April 30, 2020; and Fleming, M., Sarkar, A., Van Tassel P., 'The COVID-19 Pandemic and the Fed's Response', Liberty Street Economics, Fed NY, April 15, 2020.

consumer protection violations, so that the bank could increase its participation in the Fed's lending programs for small- and mid-sized businesses.

Among the measures adopted by the FRB to address the COVID-19 emergency, it is important - within the scope of this paper - to analyze in detail the decision taken with respect to an important regulatory tool, which is one of the centerpieces of the post-GFC financial repair: the leverage ratio.[113] I wish to put this rule-change in a more general context, trying to relate it to the path followed so far by the US supervisory agencies in challenging the implementation of the internationally agreed standards.

On April 1, 2020, the FRB decided a change - indicated as temporary - to the supplementary leverage ratio rule applicable to US banking holding companies.[114] This change would have the effect to exclude certain sovereign exposures (such as the US Treasury securities) and deposits at Federal Reserve Banks from the total assets, which enter the denominator of the ratio, making it easier for banks to meet their regulatory minimum requirements until March 2021.

Based upon FRB estimates, this modification would temporarily decrease Tier 1-capital requirements of US banking holding companies by approximately 2 percentage points in aggregate.[115] The FRB has motivated its decision with the need to ease strains in the Treasury market, while increasing banks' ability to provide credit to the economy. According to the FRB, the liquidity conditions prevailing in Treasury markets have deteriorated rapidly since the beginning of the COVID-19 emergency, and financial institutions have received significant inflows of customer deposits along with increased reserve levels. The regulatory restrictions that accompany this balance sheet growth could constrain the banks' ability to provide credit to households and businesses. The new rule on the supplementary leverage ratio has the objective to mitigate the effects of these restrictions.

This change has been possible, because - as the FRB has stated – the US financial institutions have more than doubled their capital and liquidity levels over the past decade. The

[113] In 2010 the BCBS decided to introduce a simple, transparent, non-risk based leverage ratio, calibrated to act as a credible supplementary measure to the risk based capital requirements. The leverage ratio was intended to constrain the build-up of leverage in the banking sector, helping avoid destabilizing deleveraging processes which can damage the broader financial system and the economy; and reinforce the risk based requirements with a simple, non-risk based "backstop" measure. The leverage ratio, calculated as regulatory capital (Tier1) divided by total assets (on a non-weighted basis) is a response to the incentives banks have to underestimate risks. See BCBS, 'Basel III: A Global Regulatory framework for more Resilient Banks and Banking Systems', December 2010.

[114] See Box No. 4 in Chapter 4 for the details.

[115] FRB, 'Federal Reserve Board announces temporary change to its supplementary leverage ratio rule', Press Release and Accompanying Document, Washington, D.C., April 1, 2020.

FRB has provided this temporary exclusion to allow banking organizations to expand their balance sheets as appropriate to continue to serve as financial intermediaries, rather than to allow banking organizations to increase capital distributions.

According to Veron (2020), by exempting sovereign exposures, this new rule may signal a non-marginal deviation from the internationally agreed definition of the leverage ratio in the Basel III framework, finalized 2010 by the BCBS in response to a mandate by the G20.[116] This exemption might encourage other jurisdictions to follow the same change, putting at risk the BCBS's[117] effort to build consensus among its member jurisdictions for an holistic approach for the treatment of sovereign exposures under its regulatory framework.[118]

Another piece of evidence for this trend is from Section 4014 of the Coronavirus Aid, Relief, and Economic Security (CARES) Act, signed on March 27, 2020, which provides banks with the option not to apply the current expected credit loss (CECL) provisioning rules, whose implementation has started in January 2020.[119]

Making use of this option, 'banks can avoid booking losses that are expected from the deterioration in the economic outlook from the pandemic and make their capital positions look correspondingly more flattering'.[120] Similarly, concerns about the pro-cyclical impact of CECL

[116] Veron, N., 'Is the United States reneging on international financial standards?', Peterson Institute for International Economics, Washington, April 15, 2020. In this article, this author refers also another recent rule change in the US, potentially signaling a departure from the international standards. In November 2019, the FRB, the OCC and the FDIC announced a final rule - effective as from April 2020 - updating how certain banking organizations are required to measure counterparty credit risk for derivative contracts. This rule implements the BCBS "standardized approach for measuring counterparty credit risk," (the so-called SA-CCR), which better reflects improvements made to the derivatives market since the 2007-2008 financial crisis such as central clearing and margin requirements. SA-CCR would replace the "current exposure methodology" for large, internationally active banking organizations, while other, smaller banking organizations could voluntarily adopt SA-CCR. The November 2019 final rule allows to not applying (above all for larger banks) SA-CCR for some derivatives contracts with non-financial counterparties. According to the FRB, while this rule will not change the current amount of capital in aggregate, the effect on individual banks will vary depending on their portfolios.

[117] BCBS, 'The regulatory treatment of sovereign exposures', Discussion Paper, December, 2017.

[118] The recent developments in the Treasuries markets are analyzed in Schrimpf, A., Shin, S. H., Sushko, V., 'Leverage and margin spirals in fixed income markets during the COVID-19 crisis' BIS Bulletin No. 2, April 2020.

[119] The rules on the calculation of provisions making reference to expected losses rather than incurred ones have been defined under the aegis of G20 in the aftermath of the GFC, as a response to the drawbacks revealed by the incurred loss model and the need to dispose of a more forward-looking methodology for determining losses in banks' balance sheets during economic cycles. They were implemented in 2016 by the US Financial Accounting Standards Board (FASB) and separately earlier in 2014 by the International Accounting Standards Board (IASB), whose standards apply in most of the other G20 jurisdictions.

[120] Veron, N., 'Is the United States reneging on international financial standards?', Peterson Institute for International Economics, Washington, April 15, 2020.

could and should have been addressed by using the standard's embedded flexibilities, similar to what was recommended outside the United States and implemented by the EU authorities and the United Kingdom.[121]

In general terms, it is important to highlight here that the response developed so far by the international bodies and the national authorities seems to prefer the use of the flexibility already embedded in the standing rules, avoiding to adopt departures from the internationally agreed standards. It is not without importance to stress that the banking systems more able to withstand the present shock - since they have higher on average levels and quality of prudential requirements - seem to be precisely those that are more advanced in the implementation of the international standards as defined in the last years after the crisis of 2007-08.

Specifically on the issue of loan classification, the regulatory stance finalized in the EU goes in the direction to avoid any automaticity in the classification of loans and encourage flexibility under certain conditions in the decisions of authorities and banks. This is of essence for the banking systems of the countries that are most impacted by the COVID-19.

It is also important to say that also the request for banks to continue to assess in objective terms the underlying credit risk of exposures (even those benefiting from public support measures) goes in a right direction, given the relevance of this issue (now and in the periods to come) in order to maintain an accurate picture of risks in the banking sector.

7. The cycle of (de)regulation: why post-GFC financial reforms should not be weakened

7.1 Capital requirements and financial stability

Many economic research contributions show that that financial stability safeguards and enhanced micro-prudential requirements are essential for ensuring economic growth, given the crucial role of banks in the savings intermediation process.

According to results made available by the Bank for International Settlements (BIS), jurisdictions with active regulatory policies on the financial system - namely those aimed at addressing systemic risk - experience higher and less volatile paths for a number of indicators of macroeconomic performance. These findings are confirmed also with reference to the effects of micro-prudential requirements; banks with higher levels of regulatory capital not only limit the

[121] Veron, N., 'Banks in the COVID-19 turmoil: Capital relief is welcome, supervisory forbearance is not', Peterson Institute for International Economics, March 25, 2020.

likelihood (and costs) of financial crises but are also in a condition to support higher lending if compared with banks that are undercapitalized.[122]

Using data for a panel of 64 advanced and emerging market economies, this research investigates empirically the link between macro-prudential policies and economic performance as measured by output volatility and growth over a five-year period. The main result is that the more a country uses macro-prudential policies, the higher is the growth rate of its per capita GDP and the less volatile its GDP growth. These results hold also for the US large banks on average: if compared to their global competitors, these banks have shared a more stringent regulatory regime (at least in the years up to 2016), while performing better in terms of lending capacity and profitability results.[123]

Financial regulation fulfils an important role in protecting the economic sectors against the volatility and the negative impact that follow the build-up of risk in the financial sector. For example, in this long period of low interest rates, now likely to last even longer than previously expected given the negative consequences of the current pandemic, banks may take on increasing risks to boost profitability, thus creating the conditions for market distortions and assets bubbles in the future.[124]

These potential risks call for sound regulatory responses in order to protect long-term economic growth. If the opposite happens, we risk opening the door to financial instability, which represents a concrete threat for the real economy. Financial instability has often been the outcome of ineffective regulatory policies. In this context, in investigating the effects of public policies on prudential standards there is the risk to replay trends observed repeatedly in the past, when authorities loosened financial regulations, based on the recurring argument that a stringent regulatory approach would restrict bank credit and hamper economic growth. Such arguments

[122] Boar C., Gambacorta, L., Lombardo, G., Pereira da Silva, L., 'What are the effects of macro-prudential policies on macroeconomic performance?' BIS Quarterly Review, Basel, September 2017. See also Gambacorta, L., Shin, H.S., 'Why bank capital matters for monetary policy', BIS Working paper, No. 558, Basel, April 2016; these authors find that bank equity is an important determinant of both the bank's funding cost and its lending growth. In a cross-country bank-level study, they find that a 1-percentage point increase in the equity-to-total-assets ratio is associated with a 4 basis point reduction in the cost of debt financing and with a 0.6 percentage point increase in annual loan growth.

[123] 'When implementing the 2010 Basel III agreement, US regulators opted for a higher supplementary leverage ratio on the largest US banks than the level set in Basel III. The American Bankers Association (ABA) argues that this higher leverage requirement hurts American banking sector competitiveness globally. That charge, however, does not hold water when looking at the compared to the relative weakness in the profitability of European banks. US banks are in a much stronger position globally because of more robust financial regulations—not despite them'. See Gelzinis, G., 'Three Flawed Banking Industry Arguments Against a Key Post-Crisis Capital Requirement', Center for American Progress, October 2017.

[124] IMF, 'Global Financial Stability Report, Lower for Longer', Washington, D.C., October 2019.

have been put forward both during good times and in times of crisis such as the current circumstances.

Blinder (2014) illustrates the main elements of this regulatory cycle in his financial entropy theorem; in this paper examples of the deregulatory cycle are the erosion over time of the Glass-Stegall Act separation between commercial and investment banking and the loosening of interstate banking regulations in the 1980s and 1990s.[125]

The same arguments can be found in the regulatory instability hypothesis outlined by Gerding (2013): the basic concept refers to the fact that financial regulation is eroded when it is most needed.[126] This author outlines that the policy initiatives that in the US are eroding the provisions of the DFA - such as those referred to in the previous paragraphs - appear to be a repetition of this well-known historical pattern. These initiatives have been motivated with the claim that the DFA provisions have restricted lending and economic growth while also damaging markets' liquidity.[127] The focus of the reform is the increase of the threshold for enhanced prudential standards to $250 billion in total assets, meaning that a significant number of large banks would be subject to less stringent requirements. The failure of one or more of these banks would negatively affect the regional economies they serve and could have a bearing on US financial stability.

The economic literature is almost unanimous on the view that banks' regulatory capital is one of the most powerful tools in the hands of supervisors to lower the likelihood of bank failures.[128] The need to strengthen the amount and the quality of banks' capital has been the

[125] Blinder, A.S., 'Financial Entropy and the Optimality of Over-Regulation', Working Paper No. 242, Griswold Center for Economic Policy Studies, 2014.

[126] Gerding, E.F., 'Introduction: the Regulatory Instability Hypothesis', in Gerding E.F., 'Law, Bubbles, and Financial Regulation', Abington, U.K., 2013.

[127] Examples of such claims can be the following: the Clearing House, representing the largest global commercial banks, has affirmed in several occasions that enhanced prudential standards increase the cost of banking services, and can significantly reduce lending and economic growth; the US Chamber of Commerce has constantly warned that increased risk-weighted capital requirements (above all those on the largest banks) would determine a drag on the US financial services sector, and raise the costs of capital for all businesses; the American Bankers Association has claimed that the G-SIB surcharge "would be detrimental to US bank customers'. See for these references: Gelzinis, G., 'Three Flawed Banking Industry Arguments Against a Key Post-Crisis Capital Requirement', Center for American Progress, Washington D.C., October, 2017; and Newell, J., 'Doing the Math on the Leverage Ratio', The Clearing House, July 14, 2016. This line of reasoning seems to be shared by the June 2017 US Treasury Report, which extensively refers to the costs of bank capital, i.e. the burden bank capital places on loan asset classes, and argues that the recovery of lending after the crisis has been historically low, also due to excessive regulations (i.e. those derived by the DFA); see US Department of Treasury, 'A Financial System that Creates Economic Opportunities, Banks and Credit Unions', Washington D.C., June 2017.

[128] For more references on bank regulatory capital, see: Dagher, J., Dell'Ariccia, G., Laeven, L., Ratnovsky, L., Tong, H., 'Benefits and Costs of Bank Capital', IMF Staff Discussion Note, No. 16, March 2016.

centerpiece of the global regulatory post-crisis adjustment. This because in the years before the financial crisis, banks were severely undercapitalized, leaving them unable to absorb the amounts of losses that emerged rapidly during the crisis.[129]

The low level of regulatory capital ratios was not the only cause of the undercapitalization; there was also an issue referred to the quality of the instruments eligible for meeting the regulatory requirements, which at the end were not able to absorb losses due to their contractual features. Moreover, banks and other financial institutions used derivatives and other off-balance-sheet vehicles to take on additional risk while avoiding the capital requirements that would accompany the same types of activities if recorded on the balance sheet. The combination of low capital requirements, a loose definition of capital and the use of off-balance-sheet instruments left the banking sector extremely leveraged and vulnerable to a negative financial shock.[130]

After the GFC, these shortcomings have been addressed at the global and jurisdiction levels. Firstly, the BCBS finalized in 2010 the so-called Basel III framework, which has significantly strengthened capital requirements for internationally active large banks, including the definition of the instruments qualifying as capital and the treatment of off-balance-sheet exposures. The result of these regulatory interventions (and of their US implementation) has been that risk-based capital requirements for the US banks have reached – above all for the largest banks – levels not experienced in the past.[131]

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[129] For a comprehensive research analysis on the banks' capital erosion during the crisis, see Strah, S., Haynes, J., Shaffer, S., 'The Impact of the Recent Financial Crisis on the Capital Position of Large US Financial Institutions: An Empirical Analysis', Federal Reserve Bank of Boston, April 2013. This study indicates that the capital depletion during the financial crisis at large US financial institutions was extensive and rapid. Specifically, of the 26 large institutions examined, half had losses that would deplete capital ratios by at least 200 basis points. Of that number, 12 institutions had capital ratio erosion in excess of 300 basis points and eight institutions had capital ratio erosion in excess of 450 basis points. These authors conclude that 'When our estimates of capital depletion at large US firms are compared to the adopted and proposed Basel III capital standards for the largest US firms, capital requirements do not appear excessive as some observers have alleged'.

[130] Board of Governors of the Federal Reserve System, 'The Supervisory Capital Assessment Program: Design and Implementation', April 2009.

[131] Since the first quarter of 2009, the 34 largest bank holding companies (representing more than 75 percent of the total banking assets) have raised their common equity capital-to-risk-weighted assets ratio from 5.5 percent to 12.5 percent by the first quarter of 2017. These 34 banks have increased their highest quality capital buffers by $750 billion. According to the FDIC, the banking industry's aggregate risk-based equity capital ratio has exceeded 11 percent every quarter since mid-2010 (a level that the industry had previously never surpassed). Furthermore, there were fewer than 10 bank failures in both 2015 and 2016, compared with the more than 500 banks that failed during the crisis. For these figures and references see: Board of Governors of the Federal Reserve System, 'Comprehensive Capital Analysis and Review 2017: Assessment Framework and Results', 2017; and Gruenberg, M.J., 'Fostering Economic Growth: Regulator Perspective', Testimony before the US Senate Committee on Banking, Housing and Urban Affairs, June 2017.

It is worth recalling here that lending in the US had rebounded significantly since the crisis, while market liquidity had been within its historical trends.[132] This means that lending growth and economic recovery occurred at the time when the banking sector significantly increased its capital levels.[133]

These trends mirror the findings of significant pieces of economic research, which point out that banks' capital requirements do not harm economic growth. Research from the BIS shows that an increase in a bank's equity capital lowers the cost of that bank's debt and is associated with an increase in annual loan growth.[134] Further analyses show that banks coming out of the financial crisis with higher capital were able to expand lending more quickly; in other words, there is no evidence that higher capital requirements have constrained lending.[135]

Analytical studies from the IMF have challenged the idea that capital requirements (then in place) were calibrated to socially optimal levels, suggesting that increases in capital requirements at the largest banks could have been appropriate at that time, i.e. in 2016.[136] The concept of the socially optimal level of capital refers to the calibration of capital requirements that maximize the economic benefits of lowering the chances of financial crises, while limiting an increase in bank funding costs that could increase the cost of lending.

This IMF study concluded that capital in the range of 15 percent through 23 percent of risk-weighted assets would have been sufficient for banks in advanced economies to absorb losses and avoid previous financial crises. The study takes a global view and looks at losses across countries, particularly those classified as advanced economies.

In 2017, the Federal Reserve released a paper using a methodology similar to the IMF's but with specific tweaks to reflect the specific conditions of the US financial sector and the fact that additional financial regulations such as liquidity requirements also lower the probability of a

[132] Berry, K., 'Four Myths in the Battle over Dodd-Frank', American Banker, March 10, 2017; and Cecchetti, S., Schoenholtz, K., 'The US Treasury's Missed Opportunity', Vox, July 14, 2017.

[133] In the FDIC's Quarterly Banking Profile for the third quarter of 2017, banks reported a combined net income of $47.9 billion, and the industry's average return on assets remained strong after hitting a 10-year high in the second quarter. Lending continues to climb, with total loans and leases up 3.5 percent in the past 12 months; moreover, bank profits are at record levels and banks are choosing to return even more capital to their shareholders instead of using it to fund more loans. See FDIC, 'Quarterly Banking Profile: Third Quarter 2017', Washington, D.C., 2017.

[134] Gambacorta, L. Shin, H.S., 'Why bank capital matters for monetary policy', BIS Working paper, No. 558, Basel, 2016.

[135] Cohen, B.H., Scatigna, M., 'Banks and Capital Requirements: Channels of Adjustment', BIS Working Paper No. 443, 2014; and Liang, N., 'Financial Regulation and Macroeconomic Stability', Brookings Institution, 2017.

[136] For a summary of this research, see Dagher, J., Dell'Ariccia, G., Laeven, L., Ratnovsky, L., Tong, H., 'Benefits and Costs of Bank Capital', IMF Staff Discussion Note, No. 16, March 2016.

financial crisis.[137] The paper finds that the level of capital that maximizes net economic benefits is in a range between slightly more than 13 percent and over 26 percent of risk-weighted assets. With the 2017 equity capital levels around 12.5 percent, and regulatory requirements at less than that, the US banking system was at best at the low end of this range and at worst below it.

In his farewell address in April 2017, former FRB member D. Tarullo stated that a modest increase in the capital requirements might be appropriate (at that time). This conclusion was strengthened by the finding that, as bank capital levels fall below the lower end of ranges of the optimal trade-off, the chance of a financial crisis increases significantly, whereas no disproportionate increase in the cost of bank capital occurs as capital levels rise within this range.[138]

In the same vein, former Treasury Secretary T. Geithner in 2016 expressed concern about the then-in-place capital requirements. He argued that current capital requirements looked high compared with the actual losses experienced during the 2007-2008 financial crisis, but those losses would have been much higher had the government not intervened extensively.[139]

Important academics have researched the question of adequate bank capitalization levels and have argued for years that more capital is needed. While the specific levels of capital that they prescribe differ, most fall within the general bounds of the IMF and Federal Reserve studies previously referenced.[140] While additional tools, such as long-term bail-in-able debt, are important and can play a role especially in the resolution of a complex firm, common equity capital has proved to be the best loss-absorbing option.

7.2 Liquidity standards as a tool against bank runs

In the run-up to the GFC, the international financial system missed adequate liquidity standards. Banks were highly dependent on short-term liabilities, extensively used to fund long-term illiquid assets (i.e. loans). Insured deposits were not the only short-term liability used by banks to fund their assets; other liabilities included interbank lending, deposits of more than $250,000, repo agreements, and other wholesale funding; thus determining a situation in which banks could not keep their maturity transformation under acceptable levels.

[137] Firestone, S., Lorenc, A., Ranish, B., 'An Empirical Economic Assessment of the Costs and Benefits of Bank Capital in the US', Board of Governors of the Federal Reserve System, 2017.
[138] Tarullo, D.K., 'Departing Thoughts', Board of Governors of the Federal Reserve System, April 2017.
[139] Geithner, T.F., 'Are We Safer? The Case for Strengthening the Bagehot Arsenal', Per Jacobsson Foundation Lectures, 2016.
[140] Cline, W.R., 'The Right Balance for Banks: Theory and Evidence on Optimal Capital Requirements', Peterson Institute for International Economics, 2017; Goldstein, M., 'Bank Final Exam: Stress Test and Bank Capital Reform', Peterson Institute for International Economics, 2017.

This happened also outside the traditional banking sector, involving entities belonging to the so-called non-bank financial intermediation.[141] These institutions were large and highly interconnected with the rest of the system. In this way, the stress they experienced was spread out to other financial institutions.[142] The runs on the highly leveraged investment banks were an example of how systemic risk can build up beyond the traditional banking sector.

The failure of Lehman Brothers in 2008 is a leading example of this type of liquidity risk.[143] Lehman had funded its long-term, illiquid assets mainly with repos and commercial paper. When the subprime mortgage market started to experience difficulties, spreading negative consequences also in the market for collateralized debt obligations (CDOs), the entire financial system was impacted. After the collapse of Bear Stearns, concerns increased for the situation at Lehman Brothers, given the similarity in the assets funding and business model between the two banks. As the deterioration in the value of Lehman's real estate assets and CDOs continued, creditors stopped rolling over their repos and commercial paper, with a strong bearing on the liquidity conditions of the bank; they shortened the length of the liabilities; and they demanded higher haircuts. Therefore, Lehman's access to the short-term credit markets was severely restricted.

In the Autumn of 2008, $200 billion of Lehman's assets were funded overnight, meaning that on any given day Lehman was at risk of creditors refusing to roll over their loans. If that occurred, Lehman would either have to liquidate enough assets at solvency-threatening losses to come up with the cash, or file for bankruptcy. On September 15, 2008, Lehman could not roll over enough loans and indeed filed for bankruptcy. The freezing of short-term credit markets caused this type of run throughout the financial system.

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[141] Tarullo, D.K., 'Thinking Critically about Nonbank Financial Intermediation', Board of Governors of the Federal Reserve System, November 2015.

[142] Deposit-taking banks were also significantly exposed to the short-term credit markets, both directly through their broker-dealer subsidiaries and through guarantees made to off-balance-sheet vehicles. Banks were also used to set up structured investment vehicles (SIVs) and other similar vehicles off their balance sheets. These vehicles issued short-term liabilities such as commercial paper to fund long-term assets such as CDOs, packed with subprime mortgages with a layer of investor equity. The sponsoring banks offered explicit or implicit liquidity guarantees to the SIVs, meaning that the bank would purchase the short-term liabilities if the market for them dried up. The run on repo and commercial paper crushed the SIVs, and many banks took the SIVs and other vehicles back onto their balance sheets at the price of steep losses. Other parts of the financial sector - such as money market funds (MMFs) - that had invested in these short-term notes also suffered severe runs. The MMF investors viewed their accounts as high-yield checking accounts, but when they experienced losses, they immediately pulled their funds - as one would do if questioning the safety and soundness of a traditional bank pre-FDIC. For this footnote, see Gelzinis, G., Green, A., Jarsulic, M., 'Resisting Financial Deregulation', Centre for American Progress, September 2017.

[143] For these considerations see Gelzinis, G., Green, A., Jarsulic, M., 'Resisting Financial Deregulation', Centre for American Progress, Washington, September 2017.

In addition to its effects on Lehman, the freezing had a severe impact on banks such as Bear Stearns and Merrill Lynch, which also relied mostly on short-term funding while holding toxic assets. Lehman Brothers, Bear Stearns, Merrill Lynch, and other investment banks were not traditional banks and did not issue FDIC-insured deposits.

During the crisis, the US authorities have undertaken extraordinary measures to prevent a total collapse in liquidity. At the same time, there was an increasing awareness of the need to define appropriate liquidity requirements within the post-crisis financial regulatory adjustment. The goal was to have a situation in which banks and other financial institutions could meet their obligations in times of stress without having to revert to asset fire sales that can threaten their solvency and transmit risks throughout the markets. The bulk of the regulatory response in the field of liquidity was the 2010 Basel III agreement, which included two new liquidity requirements: the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR).

The US LCR rule –finalized in 2014 - required banks with more than $250 billion in assets or with more than $10 billion in foreign exposure to hold enough high-quality liquid assets - those that can be easily converted to cash - to meet their expected obligations in a time of stress for 30 days. Banks can use a tiered mix of cash, federal or foreign government securities, and other liquid and readily marketable securities to meet this requirement. If banks hold enough liquid assets during a stressed period, they will not have to revert to selling off longer-term illiquid assets at losses that threaten their solvency. A modified, less stringent version of this rule applies to banks with above $50 billion in assets.

The NSFR requires banks to better match longer-term illiquid assets with more stable forms of funding over a one-year time horizon. US regulators proposed the rule in 2016; it has not yet been finalized. It applies to the same category of banks as the LCR, with a less stringent version applying to banks with more than $50 billion in assets.

In addition to these two liquidity rules, the Federal Reserve analyzes the liquidity of the largest banks through the Comprehensive Liquidity Assessment and Review, as well as in the annual stress tests and the living-wills process. According to FRB estimates, in the US the eight G-SIBs increased their levels of high-quality liquid assets - those needed to comply with the LCR rule - from $1.5 trillion in 2011 to $2.3 trillion in the first quarter of 2017.[144] Banks have started to shift their funding profiles toward more stable, longer-term liabilities; in 2006, the current G-SIBs funded 35 percent of their assets with short-term liabilities. At the end of 2017, that number has dropped to 15 percent of assets.

The new approach adopted by the US supervisory agencies represents a clear move towards less stringent liquidity requirements; this reversed attitude seems not to take into

[144] Powell, J.H., 'Statement', before the US Senate Committee on Banking, Housing and Urban Affairs, Washington D.C., June 2017.

appropriate consideration one of the most robust lesson from the crisis, which is that liquidity requirements represent necessary conditions to keep the financial system sound and safe.[145] With less stringent liquidity requirements, even large banks - with regulatory capital ratios above the minimum and relying heavily on short-term liabilities - could face losses if they need to resort to asset sales in the face of a stress in the markets for liquidity.

The LCR and NSFR are two much-needed liquidity rules that require banks to hold more liquid assets and to better match their illiquid assets with stable funding. These requirements can be supplemented with additional prudential requirements that vary depending on the extent to which a bank utilizes short-term wholesale funding.

Indeed, the calculation for the current US G-SIB capital surcharge for the largest, most systemically important bank holding companies depends in part on a bank's reliance on short-term wholesale funding.[146] According to some authors, this element should play a more important role in determining the capital surcharge. G-SIBs with a heavy reliance on short-term funding should face significantly higher capital surcharges relative to G-SIBs with more stable sources of funding.[147]

Others point out that, in order to make the financial system less vulnerable to the types of runs experienced in the 2007-08 crisis, regulators should not only enhance the G-SIB capital surcharge calculation to further incentivize less reliance on short-term funding but also require that repo agreements, a type of secured short-term funding that featured prominently during the financial crisis, as well as other securities-financing transactions, be centrally cleared.[148]

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[145] The new US rules only apply the full LCR to the eight banks designated as G-SIBs instead of all banks with more than $250 billion in assets; subjecting banks with more than $250 billion in assets to a less stringent version of the LCR; and exempting banks with $50 billion to $250 billion in assets even from the less stringent LCR that currently applies to them.

[146] Currently, the surcharge calculation is broken up into two parts. The first part, known as method 1, is used to determine which banks are G-SIBs and will therefore be subject to the surcharge. Method 1 takes into equal consideration a bank's size, interconnectedness, substitutability, complexity, and cross-jurisdictional activity. If a bank's method 1 score qualifies it as a G-SIB, the bank must calculate a method 2 score, which swaps out the substitutability factor for a bank's use of short-term wholesale funding. The wholesale funding factor is weighted equally with the other four factors and counts toward 20 percent of the score. The bank is then subject to the G-SIB capital requirement that corresponds to the higher of the two scores. See Board of Governors of the Federal Reserve System, 'Calibrating the G-SIB Surcharge', Washington D.C., 2015.

[147] Americans for Financial Reform, 'Risk-Based Capital Guidelines: Implementation of Capital Requirements for Global Systemically Important Bank Holding Companies', Federal Reserve System, Washington, D.C., April 2015.

[148] Gelzinis, G., Green A., Jarsulic, M., 'Resisting Financial Deregulation', Center for American Progress, Washington, D.C., September 2017.

8. Some concluding remarks: the importance of conservatism in banking regulation

In this paper, I have examined the interactions between financial regulation and crises, with reference to a concrete historical example, namely that of the US in the years between the GFC and the COVID-19 emergency in the first half of 2020. The US experience deserves to be studied carefully, also in view of the leading role played by the US in the international community of central banks and regulators, which implies that the choices and decisions adopted in the US may be imitated abroad.

The main findings (and lessons) stemming from this paper can be summarized as follows.

I have framed the US experience in a more general context, making extensive reference to the theoretical literature that has examined in depth the interactions between financial laws and crises throughout the centuries (and across countries).

This analysis shows that financial regulation has often been unable to prevent crises or to mitigate their impact on the real economy; moreover, in a number of episodes, it has actually contributed to the crisis itself and to the severity of the crash. Financial regulation and economic cycles have interacted recurrently, determining frequent feedback loops: after each crisis, economic systems have responded with a policy backlash, which has brought a new regulatory framework, with new authorities and new powers and tools. However, it is also true that many of these new settings failed when the next crisis emerged. In the end, these feedback loops have damaged financial markets and worsened the effectiveness and efficiency of financial regulations.

In the case of the United States, I have described the various steps through which a new regulatory system on large and systemic banks has been built in the last few years (2017-2020), that is the reforms finalized by the Trump administration that have reversed the main elements of the DFA.

This new system has been based on the need to have rules tailored to the size and complexity of the supervised entities and to foster banks' credit to the economy. It is worth outlining that these regulatory changes occurred in the pre-COVID-19 years (2017-2019), in which the US industry reported record profits and the economy performed better than in other developed countries, banks' capital levels increased as much as tenfold over the previous decade, and the banking industry was profitable on average, with lending at high levels and the number of problem institutions at its lowest since 2007.[149]

Even if the objectives (tailoring, and reducing complexity in rulemaking) of this regulatory approach appear sensible in principle, it is fair to say that these measures have had the effect of reversing the main elements of the Dodd-Frank Act, introducing a non-marginal degree of

[149] The small number of bank failures could be a sign that hidden risks are building; apart from 2018, the only years with no failures were 2005 and 2006, when home prices soared and banks feasted on subprime mortgage debt in the run-up to the financial crisis. For these considerations see Ackerman, A., 'Few Bank Failures Could be a Warning Sign for US Financial System', Wall Street Journal Online, January 7, 2020.

deviation from the internationally agreed post-GFC rules. The recent decision by the Fed on the leverage ratio in April 2020 and the legislative action taken on CECL are additional pieces of evidence showing what seems to be the intention now prevailing among US agencies to depart significantly from the global regulatory framework finalized under the aegis of the G20 and FSB since 2008.

Signs of an even greater deviation can also be inferred from the forthcoming US implementation of the standards derived from the 2017 Basel III Accord. In preparation for this, it has recently been stated that these new rules would be implemented in a way to maintain the current level of loss absorbency within the banking industry, i.e. by preserving aggregate capital and liquidity levels in large banking organizations and avoiding an additional burden on smaller ones.[150]

In this context, the decision, due to the COVID-19 emergency, taken by the BCBS (and its oversight body, that is the Group of Governors and Heads of Supervision - GHOS) to allow an additional year for the implementation of the 2017 accord could give renewed room to its ancient opponents to roll back some of its main achievements, given that this behaviour is not likely to be counter-balanced – as it was in the past - by a firm US stance in its favour.[151]

In doing so, the US agencies will scale back their commitment built in the years after the GFC, when they often acted as hardliners within the main SSBs during the various waves of negotiations for finalizing the post-GFC standards. During that period, even when departing from the international accords, implementation in the US was consistent with them, bringing prudential requirement generally above (not below) the international minimums.[152]

It could be possible that these decisions will not last for long, given that they have been formally adopted on a temporary basis. However, they could have the potential to open the door to similar patterns of behaviour worldwide, thereby undermining the main results of the post-GFC financial repair, i.e. an increase (on average) in the resilience of the international financial system and its capacity to withstand situations of huge economic losses.

[150] Quarles, R.K., 'Statement of the Vice Chair for Supervision Board of Governors of the Federal Reserve System', before the US Senate Committee on Banking, Housing, and Urban Affairs, December 5, 2019.

[151] BCBS, 'Governors and Heads of Supervision announce deferral of Basel III implementation to increase operational capacity of banks and supervisors to respond to COVID-19', Press Release, March 27, 2020.

[152] According to Veron (2020), cited above, 'Neither are the recent American breaches wholly unprecedented, if one goes far enough back. US authorities had been reluctant to adopt the previous Basel II accord in the years before the financial crisis of 2008–10, for prudential reasons that the subsequent crisis experience largely vindicated. But from the first G20 summit in late 2008 to recent months, the United States had been the leading champion of G20 financial reforms, and that compliant stance was maintained under the first few years of the Trump administration. Even as some financial rules were relaxed, they were kept above the minimum levels set in international accords'. I tend to disagree with the last part of this sentence, as I have tried to illustrate in the previous paragraphs, the current US administration has started to deviate from the BCBS standards since its inception.

In addition, this door could remain open for a long time and it is hard to tell how it could be closed.

These signs of a softened approach to banking regulation (and supervision) might also spread beyond the United States. It may be true that some significant parts of the post-GFC regulatory reforms need to be re-evaluated and fine-tuned; this is a job that the FSB and the international standard-setting bodies have already undertaken as part of their programme for evaluating the post-crisis reforms.[153] However, the cumulative effect of the trends described above could cause the globally harmonized approach to regulation to break down. In any case, by breaching G20 standards, these decisions seem to be inconsistent with the overall policy stance taken at the global level also in this pandemic situation.

In the COVID-19 situation, the policy relief options decided by supervisors in terms of Pillar 2, capital and liquidity buffers should potentially allow banks to respond effectively to the demand for credit stemming from the current situation. Moreover, the authorities have also clarified that banks should properly take into account the mitigating impact on the quality of loans associated with the moratoria and public guarantee measures that many governments are enacting. This also means that banks will have a considerable capacity to absorb losses in the near future, without breaching their regulatory and supervisory capital requirements.

It is important to stress that the banking systems that seem to be in a better position to withstand the present shock - having higher average levels and quality of prudential requirements - are those more advanced in the consistent implementation of the international standards as defined in the years after the GFC.[154]

It is worth recalling that the FSB has recently published a report on the financial stability implications of the pandemic, while drawing the attention of the international regulatory and supervisory community to the appropriate policy response for addressing them.[155] The FSB recommends that the authorities take action in a manner consistent with the objective of maintaining common international standards, given that these standards provide the resilience needed to sustain lending to the real economy, and preserve an international level playing field. Such actions will not roll back regulatory reforms or compromise the underlying objectives of existing international standards.

Moreover, the authorities are supposed to coordinate with the FSB and SSBs the future timely removal of the temporary measures, to assist in returning financial conditions and firms'

[153] FSB, 'Work Programme for 2020', December 2019.

[154] According to the Financial Times, faced with the coronavirus fallout, the global banking system of 2007 would already have imploded by now; see Crow, D., Morris, S., Noonan, L., 'Will the coronavirus crisis rehabilitate the banks? FT, April 1, 2020.

[155] FSB, 'COVID-19 pandemic: Financial stability implications and policy measures taken', Basel, April 15, 2020.

operations to normal in a smooth and consistent manner and to maintain financial stability in the longer term.

The FSB stresses that it is thanks to the G20 regulatory reforms enacted in the aftermath of the GFC if the global financial system is now more resilient and better placed to sustain financing to the real economy. In particular, this greater resilience of the major banks at the core of the financial system has to date allowed the system mainly to absorb rather than amplify the current macroeconomic shock. Along the same lines, the IMF argues that the considerable international efforts to bolster regulation of the financial system since the global financial crisis should be maintained and any rollback of regulation, or fragmentation through domestic actions that undermines international standards, should be avoided.[156]

A recent paper available from the BIS stresses that the post-GFC regulation has increased the shock-absorbing resources of the international financial system.[157] According to these authors, there is a consensus within the international regulatory and supervisory community that the priority now is the full, timely and consistent implementation of the G20 regulation reforms. This is especially important at a time when the regulatory cycle opened by the GFC is close to its peak and economic cycles tend to reverse.

With the memory of the GFC fading, the pressure to dilute the agreed standards could increase even further in the near future. These are all reasons for underlining the importance of maintaining a consistent approach to banking regulation.

[156] IMF, 'Global Financial Stability Report', Washington, D.C., April, 2020.

[157] Borio, C., Farag, M., Tarashev, N., 'Post-crisis international financial regulatory reforms: a primer', BIS Working Papers No. 859, April 2020

GLOSSARY

- American Bankers Association (ABA).
- Banking Holding Companies (BHCs).
- Bank for International Settlements (BIS).
- Basel Committee on Banking Supervision (BCBS).
- Collateralized Debt Obligations (CDOs).
- Commodity Futures Modernization Act (CFMA).
- Commodity Futures Trading Commission (CFTC).
- Common Equity Tier1 (CET1).
- Comprehensive Capital Analysis and Review (CCAR).
- Consumer Financial Protection Bureau (CFPB).
- Coronavirus Aid, Relief and Economic Security Act (CARES).
- Current Expected Credit Loss (CECL).
- Dodd-Frank Wall Street Reform and Consumer Protection Act (DFA).
- Dodd-Frank Act Stress Test (DFAST).
- Economic Growth, Regulatory Relief and Consumer Protection Act (EGRRCPA).
- Enhanced-Supplementary Leverage Ratio (eSLR).
- European Banking Authority (EBA).
- European Central Bank (ECB).
- European Union (EU).
- Federal Deposit Insurance Corporation (FDIC).
- Federal Housing Finance Agency (FHFA).
- Federal Reserve Board (FRB).
- Financial Accounting Standards Board (FASB).
- Financial Choice Act (FCA).
- Financial Stability Board (FSB).
- Financial Stability Oversight Council (FSOC).
- Foreign Banking Organizations (FBOs).
- Fundamental Review of the Trading Book (FRTB).
- Global Financial Crisis (GFC).
- Global Systemically Important Banks (G-SIBs).
- Government Sponsored Agencies (GSEs).
- Gross Domestic Product (GDP).
- Group of Governors and Heads of Supervision (GHOS).
- Group of Twenty (G20).
- High Quality Liquid Assets (HQLA).
- Intermediate Holding Company (IHC).
- International Accounting Standards Board (IASB).
- International Monetary Fund (IMF).
- Liquidity Coverage Ratio (LCR).
- National Credit Union Administration (NCUA).

- Net Stable Funding Ratio (NSFR).
- Office of the Comptroller of the Currency (OCC).
- Office of Financial Research (OFR).
- Ordinary Liquidation Authority (OLA).
- Office of Thrift Supervision (OTS).
- Over-The-Counter (OTC).
- Risk-Weighted Assets (RWA).
- Securities and Exchange Commission (SEC).
- Short-Term Wholesale Funding (STWF).
- Single-Counterparty Credit Limits (SCCLs).
- Single Supervisory Mechanism (SSM).
- Standardized Approach for Counterparty Credit Risk (SA-CCR).
- Supervisory Capital Assessment Program (SCAP).
- Supplementary Leverage Ratio (SLR).
- Systemically Important Financial Institution (SIFI).
- Total Loss-Absorbing Capacity (TLAC).
- United States (US).
- Volcker Rule (VR).

ESSENTIAL REFERENCES

- Acharya, V., Cooley, T. F., Richardson, M. P., Walter, I., 'Market failures and regulatory failures: Lessons from past and present financial crises', Asian Development Bank Institute, Working Paper No. 264, 2011.
- Acharya, V., Richardson, M., Van Nieuwerburgh, S., White, L., 'Guaranteed to fail: Fannie Mae, Freddie Mac, and the debacle of mortgage finance', Princeton University Press, 2011.
- Ackerman, A., 'Few Bank Failures Could be a Warning Sign for US Financial System', Wall Street Journal Online, January 7, 2020
- Allen, F., Gale, D., 'Bubbles and Crises', Economic Journal, 1, 2000.
- Andrews, E. L., 'Greenspan concedes error on regulation', New York Times, October 23, 2008.
- Angeloni, I., 'European bank regulators aren't yet doing what it takes', available at Vox.eu.org, March 24, 2020.
- Bank of England, Supplement to the Financial Stability Report: 'The Framework of Capital Requirements for UK banks', December 2015.
- Basel Committee on Banking Supervision (BCBS), 'Basel III: A Global Regulatory framework for more Resilient Banks and Banking Systems', December 2010.
- BCBS, 'Basel III: International Framework for Liquidity Risk Measurement, Standards and Monitoring', December 2010.
- BCBS, 'Global Systemically Important Banks: Updated Assessment Methodology and Higher Loss Absorbency Requirement', July 2013.
- BCBS, 'Regulatory Consistency Assessment Programme (RCAP) - Assessment of Basel III Regulations – European Union', December 2014.
- BCBS, 'Regulatory Consistency Assessment Programme (RCAP) - Assessment of Basel III LCR Regulations – European Union', July 2017.
- BCBS, 'High-level Summary of Basel III Reforms', December 2017.
- BCBS, 'Finalizing Post-Crisis Reforms', December 2017.
- BCBS, 'The regulatory treatment of sovereign exposures', Discussion Paper, December, 2017.
- BCBS, 'Fifteenth Progress Report on Adoption of the Basel Regulatory Framework, October 2018.
- BCBS, 'Minimum Capital Requirements for Market Risks, February 2019.
- BCBS, 'Survey on the Interaction of Regulatory Instruments: Results and Analysis', March, 2019.
- BCBS, 'Sixteenth Progress Report on Adoption of the Basel Regulatory Framework', May 2019.
- BCBS, 'Basel III Monitoring Report', May 2019.
- BCBS, 'Governors and Heads of Supervision announce deferral of Basel III implementation to increase operational capacity of banks and supervisors to respond to COVID-19', Press Release, March 27, 2020.
- Barth, J., Caprio, G., Levine, R., 'Guardians of Finance: Making Regulators Work for Us', MIT Press, 2012.
- Bekaert, G., Harvey, C., Lundblad, C., 'Does Financial Liberalization Spur Growth?', Journal of Financial Economics, 77, 2005.
- Becker, G. S., 'A Theory of Competition Among Pressure Groups for Political Influence', Quarterly Journal of Economics, 98, 1983.

- Benmelech, E., Moskowitz, T.J., 'The Political Economy of Financial Regulation: Evidence from US State Usury Laws in the 19th Century', The Journal of Finance, 3, 2010.
- Bernstein, M. H., 'Regulating Business by Independent Commission', Princeton University Press, 1955.
- Berry, K., 'Four Myths in the Battle over Dodd-Frank', American Banker, March 10, 2017.
- Binham, C., 'EU regulator considers rewarding banks' green investments', Financial Times, December 7, 2019.
- Blinder, A.S, 'Six errors on the path to the financial crisis' The New York Times, January 24, 2009.
- Blinder, A.S., 'Financial Entropy and the Optimality of Over-Regulation', Working Paper No. 242, Griswold Center for Economic Policy Studies, 2014.
- Boar C., Gambacorta, L., Lombardo, G., Pereira da Silva, L., 'What are the effects of macro-prudential policies on macroeconomic performance?' BIS Quarterly Review, September 2017.
- Borio, C., Farag, M., Tarashev, N., 'Post-crisis international financial regulatory reforms: a primer', BIS Working Papers No. 859, April 2020.
- Brainard, L., 'Statement at the Board of Governors Meeting', Washington, October 10, 2019.
- Calomiris, C.W., Haber, S.H., 'Fragile by Design: The Political Origins of Banking Crises and Scarce Credit', 2014.
- Carrigan, C., Coglianese, C., 'Oversight in Hindsight: Assessing the US Regulatory System in the Wake of Calamity', in Coglianese, C., (Ed.), 'Regulatory Breakdown: The Crisis of Confidence in US Regulation', University of Pennsylvania Press, 2012.
- Carrigan, C, Coglianese, C., 'George J. Stigler, The Theory of Economic Regulation', University of Pennsylvania, Law and Economic Research Paper, No. 16, 2016.
- Cecchetti, S., Schoenholtz, K., 'The US Treasury's Missed Opportunity', Vox, July 14, 2017.
- Cheng, J., Skidmore, D., Wessel, D., 'What's the Fed doing in response to the COVID-19 crisis?', Brookings Institute, April 30, 2020.
- Claessens, S., Laeven, L., Igan, D., Dell'Ariccia, G., 'Lessons and Policy Implications from the Global Financial Crisis', IMF, Working Paper No. 44, 2010.
- Claessens, S., Kodres, L., 'The Regulatory Responses to the Global Financial Crisis: Some Uncomfortable Questions' IMF, Working Paper, No. 14, 2014.
- Cline, W.R., 'The Right Balance for Banks: Theory and Evidence on Optimal Capital Requirements', Peterson Institute for International Economics, 2017.
- Cohen, B.H., Scatigna, M., 'Banks and Capital Requirements: Channels of Adjustment', BIS Working Paper No. 443, 2014.
- Crow, D., Morris, S., Noonan, L., 'Will the coronavirus crisis rehabilitate the banks?', Financial Times, April 1, 2020.
- Dagher, J., Dell'Ariccia, G., Laeven, L., Ratnovsky, L., Tong, H., 'Benefits and Costs of Bank Capital', IMF Staff Discussion Note, No. 16, March 2016.
- Dagher, J., 'Regulatory Cycles: Revisiting the Political Economy of Financial Crises', IMF Working Paper No. 8, 2018.
- Dayen, D., 'Dismantling Dodd-Frank - And More', The American Prospect, February, 2017.
- Dell'Ariccia, G., Igan, D., Laeven, L., 'Credit booms and lending standards: Evidence from the subprime mortgage market', IMF, Working Paper 106, 2008.

- Deloitte Centre for regulatory strategies, 'Final look: A practical guide to the Federal Reserve's enhanced prudential standards for foreign banks', December 2014.
- Demirguc-Kunt, A., Detragiache, E., 'Financial Liberalization and Financial Fragility', Annual World Bank Conference on Development Economics, World Bank, 1999.
- Department of Treasury (Office of the Comptroller of the Currency), Federal Reserve System, Federal Deposit Insurance Corporation, 'Changes to applicability thresholds for regulatory capital and liquidity requirements, Final Rule', October 10, 2019.
- Dye, J. 'Trump vows major haircut for Dodd-Frank', Financial Times, April 4, 2017.
- Enria, A., 'Regulation, proportionality and the sustainability of banking', November, 2019.
- Fernandez-Villaverde, J., Garicano, L., Santos, T., 'Political Credit Cycles: The Case of the Euro Zone', NBER, Working Paper No. 18899, 2013.
- Federal Deposit Insurance Corporation (FDIC), 'Quarterly Banking Profile: Third Quarter 2017', 2017.
- Federal Reserve Bank of New York, 'Statement Regarding the Supervisory Capital Assessment Program', May 7, 2009.
- Federal Reserve Bank of New York, 'Federal Reserve Releases Results of Supervisory Bank Stress Tests', June 23, 2016.
- Federal Reserve System, Federal Deposit Insurance Corporation, 'Resolution plans required, Final Rule', October 10, 2019.
- Federal Reserve System, Board of Governors, 'The Supervisory Capital Assessment Program: Design and Implementation', April 2009.
- Federal Reserve System, Feedback from Americans for Financial Reform, 'RE: Risk-Based Capital Guidelines: Implementation of Capital Requirements for Global Systemically Important Bank Holding Companies', April 2015.
- Federal Reserve System, Board of Governors, 'Calibrating the G-SIB Surcharge', June 2015.
- Federal Reserve System, Board of Governors 'Comprehensive Capital Analysis and Review 2017: Assessment Framework and Results', December 2017.
- Federal Reserve System, Board of Governors, 'Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act Stress Testing Rules and the Capital Plan Rule', February 2018.
- Federal Reserve System, Board of Governors, 'Draft Final Rules to tailor prudential standards to large banking organizations, Memorandum, Annex B', October 10, 2019.
- Federal Reserve System, Board of Governors, 'Prudential standards for large bank holding companies, savings and loan holding companies and foreign banking organizations, Final Rule', October 2019.
- Federal Reserve system, Board of Governors, 'Federal Reserve Board announces temporary change to its supplementary leverage ratio rule', Press Release and Accompanying Document, April 1, 2020.
- Financial Stability Board (FSB), 'Report on Market Fragmentation', June 2019.
- FSB, 'Implementation and Effects of the G20 Financial Regulatory Reforms', 5th Annual Report, October 2019.
- FSB, 'Report on Vulnerabilities associated with leveraged loans and collateralized loan obligations (CLO)', December 2019.

- FSB, 'Work Programme for 2020', December 2019.
- FSB, 'FSB Chair's Letter to G20 Finance Ministers and Central Bank Governors', February 18, 2020.
- FSB, 'FSB coordinates financial sector work to buttress the economy in response to COVID-19', Press Release, March 20, 2020.
- FSB, 'COVID-19 pandemic: Financial stability implications and policy measures taken', April 15, 2020.
- Firestone, S., Lorenc, A., Ranish, B., 'An Empirical Economic Assessment of the Costs and Benefits of Bank Capital in the US', Board of Governors of the Federal Reserve System, Washington D.C., 2017.
- Fleming, M., Sarkar, A., Van Tassel P., 'The COVID-19 Pandemic and the Fed's Response', Liberty Street Economics, Federal Reserve Bank of New York, April 2020.
- Friedman, M., Swartz, A., 'The Monetary History of the United States - 1867-1960', Princeton University Press, NBER publications, 1971.
- Frick, W., 'What You Should Know about Dodd-Frank and What Happens If It's Rolled Back', Harvard Business Review, 2, 2017.
- Gambacorta, L., Shin, H.S., 'Why bank capital matters for monetary policy', BIS Working Paper No. 558, April 2016.
- Geithner, T.F., 'Are We Safer? The Case for Strengthening the Bagehot Arsenal', Per Jacobsson Foundation Lectures, 2016.
- Gelzinis, G., Green, A., Jarsulic, M., 'Resisting Financial Deregulation', Centre for American Progress, September 2017.
- Gelzinis, G., 'Three Flawed Banking Industry Arguments Against a Key Post-Crisis Capital Requirement', Center for American Progress, October, 2017.
- Gelzinis, G. 'Tailoring banking regulations to accelerate the next crisis', Centre for American Progress, Washington, DC, May 2019.
- Gerding, E. 'Law, Bubbles, and Financial Regulation', Rutledge, 2014.
- Greenspan, A., 'Dodd-Frank fails to meet test of our times', Financial Times, March 29, 2011.
- Goldstein, M., 'Bank Final Exam: Stress Test and Bank Capital Reform', Peterson Institute for International Economics, Washington, D.C., 2017.
- Greenberger, M., 'The role of derivatives in the financial crisis', Testimony before the Financial Crisis Inquiry Commission, June 30, 2010.
- Gruenberg, M.J., 'Fostering Economic Growth: Regulator Perspective', Testimony before the US Senate Committee on Banking, Housing and Urban Affairs, June 2017.
- Guttentag, J. M., Herring, R.J., 'Disaster Myopia in International Banking', Essays in International Finance, Princeton University, September 1986.
- Hellman, T., Murdock, K., Stiglitz, J., 'Liberalization, Moral Hazard in Banking, and Prudential Regulation: Are Capital Requirements Enough?', American Economic Review, 1, 2000.
- Henry, P., 'Stock Market Liberalization, Economic Reform, and Emerging Market Equity Prices', Journal of Finance, 2, 2000.
- IMF, 'Initial Lessons of the Crisis', February 2009.
- IMF, 'Global Financial Stability Report, Lower for Longer', October 2019.
- IMF, 'Global Financial Stability Report', April 2020.

- Jenkins, P., 'Worrying signs that a great global deregulation has begun', Financial Times, December 9, 2019.
- Kalt, J. P., Zupan, M. A. Zupan, 'Capture and Ideology in the Economic Theory of Politics', American Economic Review, 74, 1984.
- Kamieniecki, S., 'Corporate America and Environmental Policy: How Often Does Business Get its Way?', Stanford University Press, 2006.
- Kaminsky, G. L., Reinhart, C., 'The Twin Crises: The Causes of Banking and Balance-of-Payments Problems', American Economic Review, 3, 1999.
- Kaminsky, G. L., Schmukler, S. L., 'Short-Run Pain, Long-Run Gain: Financial Liberalization and Stock Market Cycles', Review of Finance, 12, 2008.
- Kindleberger, C., 'Manias, Panics, and Crashes', New York, 1978.
- Kolko, G., 'The Triumph of Conservatism: A Reinterpretation of American History, 1900–1916', New York, Free Press, 1963.
- Kroszner, R., Strahan, P., 'What Drives Deregulation? Economics and Politics of the Relaxation of Bank Branching Restrictions', Quarterly Journal of Economics, 1999.
- Kroszner, R. S., Shiller, R. J., Friedman, B. M, 'Reforming US Financial Markets: Reflections Before and Beyond Dodd-Frank', MIT Press, 2011.
- Laffont, J. J., Tirole, J., 'The Politics of Government Decision-Making: A Theory of Regulatory Capture', Quarterly Journal of Economics, 106, 1991.
- Levine, M. E., Forrence, J. L., 'Regulatory Capture, Public Interest, and the Public Agenda: Toward a Synthesis', Journal of Law, Economics, and Organization, 6, 1990.
- Levine, M. E., 'Revisionism Revised? Airline Deregulation and the Public Interest', Law and Contemporary Problems, 44, 1981.
- Liang, N., 'Financial Regulation and Macroeconomic Stability', Brookings Institution, 2017.
- Lowi, T. J., 'The End of Liberalism: Ideology, Policy, and the Crisis of Public Authority', New York Norton, 1969.
- Mason, J., Balcombe, J., Dalrymple, W., 'Financial Supervision and Regulation in the US - Dodd-Frank Reform', European Parliament, December 2018.
- Maxwell, J. W., Lyon T. P., Hackett S. C., 'Self-Regulation and Social Welfare: The Political Economy of Corporate Environmentalism', Journal of Law and Economics, 43, 2000.
- McChesney, F. S., 'Rent Extraction and Rent Creation in the Economic Theory of Regulation', Journal of Legal Studies, 16, 1987.
- Mian, A., Sufi, A., Trebbia, F., 'The political economy of the US mortgage default crisis' The American Economic Review, 5, 2010.
- Mitchell, W. C., Munger, M. C., 'Economic Models of Interest Groups: An Introductory Survey', American Journal of Political Science, 35, 1991.
- Minsky, H. P., 'Can It Happen Again? Essays on Instability and Finance', New York, M..E. Sharpe, 1982.
- Minsky, H. P., 'The Financial Instability Hypothesis', The J. Levy Economics Institute of Bard College, 1992.
- Newell, J., 'Doing the Math on the Leverage Ratio', The Clearing House, July 14, 2016.
- Obstfeld, M., Rogoff, K., 'Global Imbalances and the Financial Crisis: Products of Common Causes', IMF, 2009.

- Peltzman, S., 'Toward a More General Theory of Regulation', Journal of Law and Economics, 19, 1976.
- Peltzman, S., 'The Economic Theory of Regulation after a Decade of Deregulation', Brookings Papers on Economic Activity 1989.
- Peltzman, S., 'George Stigler's Contribution to the Economic Analysis of Regulation', Journal of Political Economy, 101, 1993.
- Posner, R. A, 'Theories of Economic Regulation', Bell Journal of Economics and Management Science, 5, 1974.
- Posner, R. A., 'The Concept of Regulatory Capture: A Short, Inglorious History', in Carpenter, D., Moss, D. A., (eds.), 'Preventing Regulatory Capture: Special Interest Influence and How to Limit it', New York Cambridge University Press, 2013.
- Powell, J. H., 'Statement', before the US Senate Committee on Banking, Housing and Urban Affairs, June, 2017.
- Powell, J. H., 'Opening Statement', Board of Governors of the Federal Reserve System, October 10, 2019.
- Presidential Executive Order on Core Principles for Regulating the United States Financial System', No. 13772, February 3, 2017, 82 Fed. Reg. 9965.
- Quarles, R. K., 'Opening Statement', Board of Governors of the Federal Reserve System, Washington, D.C., October 10, 2019.
- Quarles, R. K., 'Statement of the Vice Chair for Supervision Board of Governors of the Federal Reserve System', before the US Senate Committee on Banking, Housing, and Urban Affairs, December 5, 2019.
- Quirk, P. J., 'Industry Influence in Federal Regulatory Agencies', Princeton University Press, 1981.
- Rajan, R. G., Ramcharan, R., 'Constituencies and Legislation: The Fight over the McFadden Act of 1927', NBER, No. 17266, 2011.
- Rappeport, A., Flitter, E., 'Congress Approves First Big Dodd-Frank Rollback', The New York Times, May 22, 2018.
- Reinhart, C. M., Rogoff, K. S., 'This Time is Different: A Panoramic View of Eight Centuries of Financial Crises' NBER Working Paper No. 13882, 2008.
- Stacey, K., Jenkins, P., 'Easing Bank Rules for Green Causes 'Myopic', Financial Times, December 13, 2019.
- Stacey, K. - Noonan, L. 'Fed rules out liquidity gauge for foreign banks' Financial Times, October 11, 2019.
- Schiller, R. J., 'The subprime solution: how today's global financial crisis happened, and what to do about it', Princeton University Press, 2012.
- Schneider, M., Tornell, A., 'Balance Sheet Effects, Bailout Guarantees, and Financial Crises', Review of Economic Studies, 2004.
- Schrimpf, A., Shin, S. H., Sushko, V., 'Leverage and margin spirals in fixed income markets during the COVID-19 crisis' BIS Bulletin No. 2, April 2020.
- Schultz, P. H., 'Perspectives on Dodd-Frank and Finance', MIT Press, 2014.
- Stigler, R., G.J., 'The Theory of Economic Regulation', Bell Journal of Economics and Management Science, 2, 1971.

- Stiglitz, J., ‘Capital Market Liberalization, Economic Growth, and Instability’, World Development, Elsevier, 28(6), 2000.
- Strah, S., Haynes, J., Shaffer, S., ‘The Impact of the Recent Financial Crisis on the Capital Position of Large US Financial Institutions: An Empirical Analysis’, Federal Reserve Bank of Boston, April 2013.
- Tarullo, D. K., ‘Thinking Critically about Non-bank Financial Intermediation’, Board of Governors of the Federal Reserve System, November 2015.
- Tarullo, D. K., 'Regulating Large Foreign Banking Organizations', Speech to the Harvard Law School Symposium on Building the Financial System of the Twenty-first Century: An Agenda for Europe and the United States, Armonk, New York, March 27, 2014.
- Tarullo, D.K., ‘Departing Thoughts’, Board of Governors of the Federal Reserve System, Washington, D.C., April 2017.
- The Economist, ‘The Dodd-Frank Act, Too Big not to Fail’, February 18, 2012.
- Tornell, A., Westermann, F., ‘Boom-Bust Cycles and Financial Liberalization’, MIT Press, 2005.
- US Department of the Treasury, ‘A Financial System That Creates Economic Opportunities - Banks and Credit Unions’, June 2017.
- Veron, N., ‘Is the United States reneging on international financial standards?’, Peterson Institute for International Economics, April 15, 2020.
- Veron, N., ‘Banks in the COVID-19 turmoil: Capital relief is welcome, supervisory forbearance is not’, Peterson Institute for International Economics, March 25, 2020.
- Visco, I., ‘The financial sector after the crisis’, Lecture by the Governor of the Bank of Italy at the Imperial Business Insights, Imperial College, London, March, 2013.
- Wolf, M., ‘Why further financial crises are inevitable’, Financial Times, March 20, 2019.