

## Beyond the Horizon of Banking Regulation: What to Expect From Basel IV

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*Since its inception, the Basel III international regulatory framework for banks has manifested a number of weaknesses in tackling the idiosyncratic and systemic risks arising from highly leveraged credit institutions. The continuing reliance on internal rating models to calculate capital requirements and the loss-absorbing capacity of prudential buffers have come under severe scrutiny by competent authorities. Against this backdrop, rumors of new structural reforms in banking regulation have started spreading into the G20 financial markets. The re-modulation of international capital and disclosure requirements for global banks—already labeled the “Basel IV package”—seems to be emerging, and the potential impact on the industry as a whole is likely to be significant. Sketching what might be the major elements of this new regulatory proposal is therefore critical for predicting how global banks will need to adjust their risk management and governance structure in the upcoming years.*

### I. THE BASEL III FRAMEWORK SIX YEARS LATER

The formalization in 2010 of the Basel III regulatory framework,<sup>1</sup> aimed at strengthening the resilience of internationally active banks, was one of the major accomplishments of the Basel Committee on Banking Supervision (“BCBS”) and its national participants.<sup>2</sup> Basel III amply satisfied the promise of G20 leaders to catalyze

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<sup>1</sup> BCBS, *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems* (rev. 2011) [hereinafter BCBS, *Basel III: A Global Regulatory Framework*]. For a thorough analysis of Basel III capital and liquidity standards, see BASEL III AND BEYOND: A GUIDE TO BANKING REGULATION AFTER THE CRISIS (Francesco Cannata & Mario Quagliariello, eds., 2011); Michael S. Barr, Howell E. Jackson & Margaret E. Tahyar, FINANCIAL REGULATION: LAW AND POLICY (2016), 307–332. For a discussion on the implementation of Basel III prudential framework, *inter alia*, see Peter King & Heath Tarbert, *Basel III: An Overview*, BANKING & FIN. SERV. POL. REP. (May 2011), at 1–18.

<sup>2</sup> The institutions represented in the BCBS are the Central Bank of Argentina (Argentina), the Reserve Bank of Australia and Australian Prudential Regulation Authority (Australia), the National Bank of

their policy efforts in order to establish a multi-dimensional regulatory regime for global banks.<sup>3</sup>

For the first time, the microeconomic dimension of prudential rules came to be surrounded by a macro-prudential layer intended to target systemic risks,<sup>4</sup> while concerns over liquidity shortages in bad times led regulators to establish standards for liquidity coverage<sup>5</sup> and stable funding.<sup>6</sup> Moreover, the deployment of a leverage ratio,<sup>7</sup> along with the implementation of extended disclosure requirements,<sup>8</sup> set the stage for limiting risk-taking behaviors and empowering market discipline.

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Belgium (Belgium), the Central Bank of Brazil (Brazil), the Bank of Canada and Office of the Superintendent of Financial Institutions (Canada), the People's Bank of China and China Banking Regulatory Commission (China), the European Central Bank (EU), the Bank of France and the Prudential Supervision and Resolution Authority (France), the Deutsche Bundesbank and Federal Financial Supervisory Authority (BaFin) (Germany), the Hong Kong Monetary Authority (Hong Kong), the Reserve Bank of India (India), the Bank Indonesia and Indonesia Financial Services Authority (Indonesia), the Bank of Italy (Italy), the Bank of Japan and Financial Services Agency (Japan), the Bank of Korea and Financial Supervisory Service (Korea), the Surveillance Commission for the Financial Sector (Luxembourg), the Bank of Mexico and Comisión Nacional Bancaria y de Valores (Mexico), the Netherlands Bank (Netherlands), the Central Bank of the Russian Federation (Russia), the Saudi Arabian Monetary Agency (Saudi Arabia), the Monetary Authority of Singapore (Singapore), South African Reserve Bank (South Africa), the Bank of Spain (Spain), the Sveriges Riksbank and Finansinspektionen (Sweden), the Swiss National Bank and Swiss Financial Market Supervisory Authority (FINMA) (Switzerland), the Central Bank of the Republic of Turkey and Banking Regulation and Supervision Agency (Turkey), the Bank of England and Prudential Regulation Authority (UK), the Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, Office of the Comptroller of the Currency, and Federal Deposit Insurance Corporation (USA). The observers are the Central Bank of Chile and Banking and Financial Institutions Supervisory Agency (Chile), the Central Bank of Malaysia (Malaysia), the Central Bank of the United Arab Emirates (UAE), the Bank for International Settlement, the Basel Consultative Group, the European Commission (EU), the European Banking Authority (EU), and the International Monetary Fund.

<sup>3</sup> See Daniel K. Tarullo, Speech at the Clearing House Business Meeting and Conference: The Evolution of Capital Regulation (Nov. 9, 2011) (arguing that prudential regulation must be multi-dimensional and rigorous in each of its constituent parts).

<sup>4</sup> BCBS, *Basel III: A Global Regulatory Framework*, *supra* note 1, at 2. For an overview of the macroprudential dimension of Basel III framework, see Andrew Baker, *The Gradual Transformation? The Incremental Dynamics of Macroprudential Regulation*, 7 REG. & GOVERNANCE 417, 426–28 (2013). For a wider discussion on macroprudential approach to banking regulation, see Samuel G. Hanson, Anil K. Kashyap & Jeremy C. Stein, *A Macroprudential Approach to Financial Regulation*, 25 J. OF ECON. PERSPECTIVES 3, 3–28 (2011).

<sup>5</sup> See BCBS, *Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools* (Jan. 2013). For an in-depth legal analysis of the Basel III liquidity coverage requirement, see Andrew W. Hartlage, *The Basel III Liquidity Coverage Ratio and Financial Stability*, 111 MICH. L. REV. 453 (2012).

<sup>6</sup> See BCBS, *Basel III: The Net Stable Funding Ratio* (Oct. 2014). For a discussion of the Basel III net stable funding ratio, see Jeanne Gobat, Mamoru Yanase & Joseph Maloney, *The Net Stable Funding Ratio: Impact and Issues for Consideration* (Intl. Monetary Fund, Working Paper No. 14/106, 2014); Michael R. King, *The Basel III Net Stable Funding Ratio and Bank Net Interest Margins*, 37 J. OF BANKING & FIN. 4144 (2013).

<sup>7</sup> See BCBS, *Basel III Leverage Ratio Framework and Disclosure Requirements* (Jan. 2014).

<sup>8</sup> See BCBS, *Revised Pillar 3 Disclosure Requirements* (Jan. 2015).

Over the last few years, G20 countries have sought to implement the whole banking reform at the national level and have hailed the structural changes of banks' capital and liquidity as a great achievement.<sup>9</sup> The expansion of the regulatory boundaries pursued by Basel III has been regarded, in fact, as a decisive step toward establishing a well functioning, level playing field for banks,<sup>10</sup> which can now compete at the global level, having internalized the costs of their risk-related misbehaviors.

Certainly, the implementation of the Basel III framework came at a significant price. Compliance with the new prudential provisions required banks to sustain tremendous costs for recapitalization and risk management improvements. Some banks preferred to re-size their balance sheets, cutting billions of dollars of assets and rebalancing their portfolios.<sup>11</sup> Over time, this structural transformation has had an impact for the whole economy, resulting in a decline in credit availability for the real economy.<sup>12</sup>

One may wonder whether the overall benefits provided by Basel III in terms of stability of the financial system and resilience of its components outweigh these costs. Several studies sought to make this analysis by forecasting the overall impact of Basel III

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<sup>9</sup> In particular, G20 leaders endorsed the Basel III regulatory framework at their 2010 Summit in Seoul. For more details, see G20 Seoul Summit Document, Seoul, South Korea (Nov. 12, 2010), at point 29: "We endorsed the landmark agreement reached by the BCBS on the new bank capital and liquidity framework, which increases the resilience of the global banking system by raising the quality, quantity and international consistency of bank capital and liquidity, constrains the build-up of leverage and maturity mismatches, and introduces capital buffers above the minimum requirements that can be drawn upon in bad times."

<sup>10</sup> The establishment of a global level playing field for banks has been one of the main drivers of Basel reforms on prudential regulation since the adoption of the Basel I Accord. See BCBS, *International Convergence of Capital Measurement and Capital Standards* (July 1988) (stating that the "framework should be in fair and have a high degree of consistency in its application to banks in different countries with a view to diminishing an existing source of competitive inequality among international banks"). However, to what extent this level playing field has been actually achieved is debatable. For a critical analysis of the desirability of a level playing fields in international financial regulation, see Alan D. Morrison & Lucy White, *Level Playing Fields in International Financial Regulation*, 64 J. OF FIN. 1099 (2009).

<sup>11</sup> For an overview of how Wall Street banks are changing their capital structure and business in view of Basel III prudential reforms, see Victoria McGrane & Julie Steinberg, *Wall Street Adapts to New Regulatory Regime*, WALL STREET J. (July 21, 2014), <http://www.wsj.com/articles/wall-street-adapts-to-new-regulatory-regime-1405951482> (last visited Oct. 12, 2016). For example, Goldman Sachs decided to cut its business ties to hedge funds and moved to less profitable clients in order to adjust its balance sheet structure to the new prudential framework. See Justin Baer & Juliet Chung, *Goldman Sachs Cuts Roster of Hedge-Fund Clients*, WALL STREET J. (Aug. 4, 2014), <http://www.wsj.com/articles/goldman-rethinks-services-it-provides-hedge-funds-1407194493> (last visited Oct. 13, 2016). For the same reasons, since 2013 Deutsche Bank has taken steps to reduce the size of its balance sheet. For a detailed explanation of the prudential adjustment that Deutsche Bank is intended to pursue in the upcoming years to comply with the Basel III requirements, see Press Release, Deutsche Bank, *Deutsche Bank Announces Details of Strategy 2020* (Oct. 29, 2015), [https://www.db.com/newsroom\\_news/2015/medien/deutsche-bank-announces-details-of-strategy-2020-en-11247.htm](https://www.db.com/newsroom_news/2015/medien/deutsche-bank-announces-details-of-strategy-2020-en-11247.htm).

<sup>12</sup> Since 2010, the BCBS has conducted a number of comprehensive quantitative studies on the impact of Basel III on banks, finding a substantial decrease in credit availability for the real economy due to the higher capital and liquidity requirements. See, e.g., BCBS, *Results of the Comprehensive Quantitative Impact Study* (Dec. 2010).

on the banking industry and the real economy.<sup>13</sup> The results of these studies have not always been consistent, and they have produced several different answers.

What is certain, however, is that today the Basel III framework is under international pressure. Only a few years after the enactment of Basel III, critics have highlighted concerns about the fundamental underpinnings of its prudential rules. And, more importantly, international policymakers are already at work to reframe some of its most significant components in response to these criticisms.

## II. THE LIMITS OF BASEL III

Despite general support from the global community, Basel III has not been free of criticism. Immediately after its introduction, a number of scholars and officers started questioning its effectiveness in addressing idiosyncratic and systemic risks.<sup>14</sup> The main arguments against the effectiveness of Basel III framework move along four lines: (a) the extreme complexity of the Basel III requirements; (b) the continuing reliance on internal model-based regulation to calculate capital requirements; (c) the failure to fully capture a number of off-balance sheet risks; and (d) the incompleteness of the disclosure requirements.

### A. *The complexity of the Basel III framework*

In a notable speech, Andrew Haldane, Bank of England Executive Director, described the intricate structure of Basel III, arguing that the new prudential provisions resulted in:

“a ballooning in the number of estimated risk weights. For a large, complex bank, this has meant a rise in the number of calculations required from single figures a generation ago to several million today (Haldane (2011)).

That increases opacity. It also raises questions about regulatory robustness since it places reliance on a large number of estimated parameters. Across the banking book, a large bank might need to estimate

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<sup>13</sup> A number of empirical studies have found a consistent relationship between higher capital requirements and lower economic growth. For a survey, see Natalya Martynova, *Effect of Bank Capital Requirements on Economic Growth: A Survey* (De Nederlandsche Bank, Working Paper No. 467, 2015); Paolo Angelini et al., *Basel III: Long-term Impact on Economic Performance and Fluctuations*, 83 THE MANCHESTER SCHOOL 217 (2015); Patrick Slovik & Boris Cournède, *Macroeconomic Impact of Basel III* (Org. for Econ. Cooperation & Dev. Econ. Dept., Working Paper No. 844, 2011).

<sup>14</sup> See, e.g., Bill Allen Kai Ke Chan & Alistair Milne, *Basel III: Is the Cure Worse Than the Disease?*, 25 INTL. REV. OF FIN. ANALYSIS 159 (2012); Ahmed Al-Darwish et al., *Possible Unintended Consequences of Basel III and Solvency II* (Intl. Monetary Fund, Working Paper No. 187, Aug. 2011); Thomas M. Hoenig, Vice Chairman, Federal Deposit Insurance Corporation, Remarks at the International Association of Deposit Insurers 2013 Research Conference: Basel III Capital: A Well-Intended Illusion (Apr. 9, 2013).

several thousand default probability and loss-given-default parameters . . . . To turn these into regulatory capital requirements, the number of parameters increases by another order of magnitude. . . .

This degree of complexity complicates greatly the task for investors pricing banks' financial instruments. For example, serious concerns have been expressed about the opacity of the Basel risk weights and their consistency across firms (Haldane (2011), Le Leslé and Avramova (2012)). Their granularity makes it close to impossible to account for differences across banks. It also provides near-limitless scope for arbitrage.

This degree of complexity also raises serious questions about the robustness of the regulatory framework given its degree of over-parameterisation. This million-dimension parameter set is based on the in-sample statistical fit of models drawn from short historical samples. If previous studies tell us it may take 250 years of data for a complex asset pricing model to beat a simple one, it is difficult to imagine how long a sample would be needed to justify a million-digit parameter set.”<sup>15</sup>

Against this backdrop, the massive structure of Basel III can hardly be seen as an efficient and rational framework.

*B. The continuing reliance on internal model-based regulation to calculate capital requirements*

Since Basel II became effective in 2008, banks have been allowed to use their own internal models for the calculation of their funds and capital requirements, subject to approval by the competent authorities.<sup>16</sup> Banks that use their own models instead of the standardized approach uniformly set by the BCBS are permitted to estimate fundamental credit risk parameters—such as exposure at default (“ED”), loss given default (“LGD”), probability of default (“PD”), and maturity (“M”)—relying on their own assessment of exposures and counterparties' creditworthiness.

The use of internal models by global banks, permitted under and incentivized by the Basel II framework, has resulted in a number of negative spillover effects. A number of analytical studies show how banks using these models can easily play with their own

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<sup>15</sup> Andrew G. Haldane, Speech at the Federal Reserve Bank of Kansas City's 36th Economic Policy Symposium: The Dog and the Frisbee (Aug. 31, 2012).

<sup>16</sup> See BCBS, *International Convergence of Capital Measurement and Capital Standards: A Revised Framework* ¶¶ 48–49 (June 2004). For an analytical explanation of the internal-ratings based models allowed by the Basel II framework, see Hugh Thomas & Zhiqiang Wang, *Interpreting the Internal Ratings-Based Capital Requirements in Basel II*, 6 J. OF BANKING REG., 274 (2005).

estimates in order to reduce the amount of capital required to be put aside.<sup>17</sup> These internal models, in fact, do not always reflect the underlying credit risks of different exposures and may foster regulatory capital arbitrage on a massive scale.

The Basel III framework does not significantly question the reliability of the internal risk model approach to capital regulation. Internationally active banks are therefore incentivized, even under Basel III, to use their own risk models for the purpose of calculating their prudential requirements, in view of the inherent capital savings and competitive advantages.<sup>18</sup>

### *C. The inability to fully capture a number of on- and off-balance sheet risks*

The calculation of capital requirements is basically constructed around three typologies of idiosyncratic risks, namely credit risk, market risk, and operational risk. The Basel III standards—under either the standardized or the internal risk model approach—seek to provide sensitive methodologies for the determination of each of these risks.

In order to enhance risk coverage of off-balance sheet activities, the Basel III framework introduced specific metrics for measuring counterparty credit risk related to trading book and complex securitization exposures, along with derivatives, repurchase agreements, and securities financing transactions.<sup>19</sup>

However, although Basel III represents a praiseworthy effort to better detect the potential build-up of these risks, its provisions have fallen short of fully capturing residual risks,<sup>20</sup> such as interest rate risk arising from non-trading activities.<sup>21</sup> The failure to provide a consistent picture of these residual risks under the current framework challenges the overall reliability of the risk-weighted capital requirements as set out by the BCBS.<sup>22</sup>

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<sup>17</sup> See, e.g., Markus Behn, Rainer Haselmann & Vikrant Vig, *The Limits of Model-Based Regulation* (Eur. Central Bank, Working Paper No. 1928, 2016); Matthew C. Plosser & João A. C. Santos, *Banks' Incentives and the Quality of Internal Risk Models* (Fed. Res. Bank of New York, Staff Report No. 704, 2014).

<sup>18</sup> For an overview of the competitive advantages provided by the internal ratings-based models, see BCBS, *Results of the Fifth Quantitative Impact Study (QIS 5)* §§ 2.1 & 2.2 (June 2006) (showing a substantial decline in minimum required capital in aggregate for banks using this regulatory approach).

<sup>19</sup> See BCBS, *supra* note 1, at 29–51.

<sup>20</sup> For details, see Wayne Byres, Remarks at the Financial Stability Institute's 6th Biennial Conference on Risk Management and Supervision: Basel III: Necessary, but Not Sufficient 6–7 (Nov. 6, 2012).

<sup>21</sup> For this reason the BCBS proposed a consultation on new regulatory standards to manage interest rate risk in the banking book. See BCBS, *Interest Rate Risk in the Banking Book – Consultative Document* (June 2015).

<sup>22</sup> See Connel Fullenkamp & Céline Rochon, *Reconsidering Bank Capital Regulation: A New Combination of Rules, Regulators, and Market Discipline* 3–9 (Intl. Monetary Fund, Working Paper No. 169, 2014) (raising doubts on the overall effectiveness of the Basel III risk-weighting framework in capturing risks).

#### *D. The incompleteness of the disclosure requirements*

To provide a common set of data on the capital and liquidity adequacy of banks to market participants and thus enhance market discipline, Basel III included the Pillar 3 disclosure requirements. For a banking entity of any risk profile, the Basel Committee set out common principles and templates that allow stakeholders to conduct cross-jurisdictional comparisons among banks on business models, prudential metrics, risk management, and governance performance.<sup>23</sup>

Basel III's disclosure requirements define clear reporting methodologies and disclosure frequencies, aiming in particular at improving the granularity of the prudential data to be released and the transparency of relevant banking activities. However, critics have raised concerns about the lack of disclosure requirements for certain pivotal information.<sup>24</sup> The absence of information on banks' internal risk models and on the validation of their risk metrics, along with the lack of disclosure of a number of ratios concerning their performance and profitability, may leave room for market uncertainty among financial analysts and investors.

### III. THE RISE OF THE "BASEL IV MOMENTUM"

In one of his keynote speeches, William Coen, Secretary General of the Basel Committee, compared the Basel III framework to a bridge, which requires not only solid construction, but also regular maintenance. In particular:

“Bridges are complex to design and build. They must be sympathetic to their surroundings and their design and construction rely on the expertise of many parties. [...] As strong bridges bring prosperity, weak bridges can undermine it. A weak bridge jeopardises the safety of those crossing it, and may create wider problems for society at large. A loss of confidence in a structure or its builders shakes confidence in every similar structure. These knock-on effects can be severe and persistent. So it is essential that a bridge, like the Basel framework, is built to last. We must also not forget

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<sup>23</sup> See BCBS, *Revised Pillar 3 Disclosure Requirements*, *supra* note 8.

<sup>24</sup> From the industry side, in particular see Wilfried Wilms, Remarks at the XBRL Week in Brussels, National Bank of Belgium: The Dark Side of the Basel Committee's Pillar 3 Framework, (Nov. 25, 2014). See also Constantinos Stephanou, *Rethinking Market Discipline in Banking Lessons from the Financial Crisis* (World Bank, Policy Research Paper No. 5227, 2013). It is interesting to note that the criticisms of the Basel III disclosure framework do not seem to be addressed by the last reform of disclosure standards proposed by the BCBS in 2016 and briefly discussed in the next few sections. For an analysis of the proposed reforms, see Comment Letter Submitted by the Global Financial Market Association, the Institute of International Finance, and the International Swaps and Derivatives Association to the BCBS, Re: BCBS Consultative Document: Pillar 3 disclosure requirements – consolidated and enhanced framework (June 10, 2016), <http://www.gfma.org/correspondence/item.aspx?id=825>.

the importance of regular maintenance. The Harbour Bridge opened with four traffic lanes but now has eight, together with a complementary tunnel. Some parts are repainted every five years, while others last as long as 30 years. We face the same imperatives with the Basel framework. Maintenance does not imply re-opening every previous decision; we understand the importance of stability and certainty. But it does mean staying vigilant to market developments and keeping in mind the increasingly widespread use of the Basel framework.”<sup>25</sup>

The significance of this statement is twofold. On one hand, a complex regulatory architecture, such as the one of Basel III, requires continuing adjustments over time due to market innovations and industry developments. On the other hand, the BCBS recognizes its policy limitations and seems to suggest that Basel III should not appear as a complete regulatory framework. Rather, it represents, in essence, an ever-evolving system<sup>26</sup> that should balance the stability of its normative content with evolving understanding of its policy foundations. In other words, there is no certainty about the right methodology for capturing idiosyncratic and systemic risks and, thus, for assessing banks’ capital and liquidity adequacy. When gaps and weaknesses are found in the application of the prudential framework, international policymakers should re-discuss the premises of their previous work and, accordingly, lay down new regulatory proposals that might better capture the externalities of market behaviors.

Over the last two years, in acknowledging its past policy-making limitations, the BCBS has followed this path. As of 2014, several regulatory adjustments to the Basel III framework have been made, and public consultations by BCBS on these new proposals have been carried out to gauge market reactions.

Some examples are worth noting. In December 2015, the BCBS consulted on revisions to the standardized approach for credit risk.<sup>27</sup> Additionally, in January 2016, the BCBS published a revised market risk framework which is intended to supersede the one laid down in Basel III.<sup>28</sup>

For the same purpose, in March 2016, the BCBS launched an effort to revise the standardized approach for calculating operational risk<sup>29</sup> and proposed changes to the

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<sup>25</sup> William Coen, Secretary General of the Basel Committee, Keynote Speech at the Australian Financial Review's Banking and Wealth Summit: The Global Policy Reform Agenda: Completing the Job (Apr. 5, 2016).

<sup>26</sup> To better understand, from an historical perspective, the ever-evolving nature of the Basel prudential requirements, see Damiano Guadalupi, *The Ever-Evolving Basel Accord*, in *RETAIL CREDIT RISK MANAGEMENT* 13–58 (Mario Anolli *et al.*, eds., 2013).

<sup>27</sup> See BCBS, *Revisions to the Standardised Approach for Credit Risk – Second Consultative Document* (Dec. 2015).

<sup>28</sup> See BCBS, *Minimum Capital Requirements for Market Risk* (Jan. 2016).

<sup>29</sup> See BCBS, *Standardised Measurement Approach for Operational Risk – Consultative Document* (Mar. 2016).

Basel III internal ratings-based approaches<sup>30</sup> in order to reduce variations in credit risk-weighted assets. In the same month, the BCBS published its consultative document on consolidated and enhanced Pillar 3 disclosure requirements<sup>31</sup> aimed at addressing disclosure shortcomings found in the Basel III framework.

In April 2016, the BCBS also issued a revised version of the leverage ratio requirement<sup>32</sup> and new standards regarding the management and supervision of interest rate risk in the banking book.<sup>33</sup> Moreover, in July 2016 the same Committee published updated standards for the regulatory treatment of securitization exposures.<sup>34</sup>

Against this newly emerging effort by international regulators, financial markets have begun to wonder whether these regulatory revisions are not just ordinary maintenance of the Basel III framework, but rather the foundation of a new, complex prudential package—a “Basel IV” framework.<sup>35</sup>

Rumors about this “Basel IV package” are gaining momentum, and market expectations seem to suggest that Basel IV is likely to come.<sup>36</sup> Due to the number of reform proposals published already by the BCBS, there are considerable reasons to believe that the new Basel IV package, once implemented, will overturn the main components of Basel III framework and shake the global banking industry at its foundations.

#### IV. SELECTED ELEMENTS OF THE BASEL IV PACKAGE

If these indications about a future Basel IV package are accurate, it is of outmost importance to figure out what are likely to be its main components. In view of the criticisms of the Basel III framework, and considering some of the reform proposals issued over the last few years by the BCBS, the following elements are likely to be considered in the future prudential package: (A) the total loss-absorbing capacity

<sup>30</sup>See BCBS, *Reducing Variation in Credit Risk-Weighted Assets – Constraints on the Use of Internal Model Approaches* (Mar. 2016).

<sup>31</sup>See BCBS, *Pillar 3 Disclosure Requirements - Consolidated and Enhanced Framework – Consultative Document* (Mar. 2016).

<sup>32</sup>See BCBS, *Revisions to the Basel III Leverage Ratio Framework – Consultative Document* (Apr. 2016).

<sup>33</sup>See BCBS, *Interest Rate Risk in the Banking Book* (Apr. 2016).

<sup>34</sup>See BCBS, *Revisions to the Securitisation Framework* (July 2016).

<sup>35</sup>However, there is a current debate on whether these new proposals will set the stage for a new Basel IV package. Officers from different national and international authorities tend to downsize the prudential implications of these proposals, arguing that the idea of a Basel IV regulatory framework is just speculative. See Boris Groendahl, *Carney Says News of Basel's Next Big Wave Isn't Fit to Print*, BLOOMBERG (Dec. 1, 2015), <http://www.bloomberg.com/news/articles/2015-12-01/carney-dismisses-basel-iv-talk-as-regulator-meets-in-new-york> (last visited Oct. 14, 2016). However, in view of the number of proposals published by the BCBS, it seems rather difficult to support these claims.

<sup>36</sup>The reality of a proper Basel IV framework is fueled by market expectations, which see in the regulatory moves of the BCBS the incoming architecture of this new prudential package. For example, see Laura Noonan, *Basel IV Spectre Looms for Battle-Worn Bankers*, FIN. TIMES (Mar. 14, 2016), <https://www.ft.com/content/a9d6eb94-ce5d-11e5-831d-09f7778e7377> (last visited Oct. 14, 2016).

requirements; (B) standardized and internal model-based approaches; (C) operational, interest rate, and step-in risks; (D) sovereign risk; (E) large exposures and concentration; (F) securitization; (G) additional macroprudential instruments; and (H) enhanced disclosure requirements.

#### A. G-SIIs and TLAC

The primary focus of Basel IV is most likely to be on the quantitative and qualitative re-modulation of capital requirements for Global Systemically Important Institutions (“G-SIIs”). Not only will banks be required to hold an increased minimum of their own funds and additional capital buffers,<sup>37</sup> but G-SIIs will also be required to adopt prudential rules implementing at the international level the principles of “total loss-absorbing capacity” (“TLAC”), as developed by the Financial Stability Board (“FSB”), in consultation with the BCBS, at the end of 2014.<sup>38</sup>

These principles are meant to enhance the recapitalization capacity of G-SII banks in periods of severe stress and resolution, re-shape banks’ going concern capital base, and constrain leverage.<sup>39</sup> To this end, banks will be required to hold a quantitatively and qualitatively prescribed set of long-term debt instruments, which are expected to be written down or converted into equity during the resolution of a failed institution. Along with the issuance of these new instruments, banks will have to comply with minimum capital ratios based on the group level’s consolidated risk-weighted assets.<sup>40</sup>

Although TLAC cannot be considered a revised version of the Basel III capital requirements—as it is supposed to constitute an add-on requirement for G-SIIs already subject to the Basel III prudential standards—the actual implementation of these provisions will require consistency in the calibration of both frameworks. In view of this, Basel IV will need to align a number of Basel III provisions with the TLAC regulatory

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<sup>37</sup> For an estimate of this capital increase, see KPMG, *Banks’ Strategies and Business Models: Capital Myths and Realities* 6–7 (July 2016).

<sup>38</sup> FSB, *Principles on Loss-Absorbing and Recapitalisation Capacity of G-SIBs in Resolution: Total Loss Absorbing Capacity (TLAC) Term Sheet* (Nov. 9, 2015). To this end, the BCBS has recently launched a consultation on TLAC holdings. For details, see BCBS, *TLAC Holdings – Consultative Document* (Nov. 2015).

<sup>39</sup> For a quantitative study on the impact of TLAC reform on GSIIIs’ capital base and leverage, see BCBS, *TLAC Quantitative Impact Study (QIS) Report* (Nov. 2015).

<sup>40</sup> FSB, *supra* note 38, at 10. For an overview of the TLAC implementing proposal in US, see Total Loss-Absorbing Capacity, Long-Term Debt, and Clean Holding Company Requirements, 80 Fed. Reg. 74,925 (proposed Nov. 30, 2015) (to be codified at 12 C.F.R. pts. 217 & 252). For a discussion of the implementation of the TLAC reform in EU, see Benoit Mesnard, Briefing, Loss Absorbing Capacity in the Banking Union: TLAC Implementation and MREL Review, European Parliament, PE 574.408 (July 7, 2016).

package, particularly with regard to the eligibility of capital instruments, deduction approaches, and holdings restrictions.<sup>41</sup>

### B. Standardized Approach vs. Internal Rating-Based Approach

As noted above, one of the main criticisms of Basel III framework has been the level of complexity underlying the capital requirements calculation. Banks' use of internal rating-based models to arbitrage away minimum capital requirements has highlighted the excessive parameterization of risk variables.

Against this backdrop, Basel IV is expected to revisit the scope of internal model-based rules in the calculation of risk-weights. The new prudential package will likely limit banks' use of internal models to estimate risk variables, giving preference instead to an augmented standardized approach that may better capture the vast array of exposure risks and improve comparability among banks.<sup>42</sup>

To further this purpose, future proposals will introduce floors for credit risk parameters to reduce distortions on the determination of the EAD, LGD, and PD.<sup>43</sup> In addition, credit risk mitigation techniques are likely to be reformulated in order to avoid excessive capital deductions.

Credit counterparty risk and market risk frameworks will probably be revisited along the same lines. For a number of derivatives classes and long settlement transactions, the credit counterparty risk will be measured primarily by relying on the standardized approach developed by the BCBS in March 2014.<sup>44</sup>

For market risk, minimum capital requirements will be calculated by either a revised internal model approach or a revised standardized approach, which would permit a more sensitive capitalization of material risk factors across banks while limiting the capital-reducing effects of hedging and diversification.<sup>45</sup> In addition, market risk will no longer be based on a Value at Risk ("VaR") methodology, but rather on an Expected Shortfalls ("ES") approach, which will help banks capture tail risks and capital adequacy in periods of severe market stress.<sup>46</sup>

Finally, in order to clarify the regulatory boundaries between the trading book and banking book of credit institutions and to reduce the related risk of arbitrage, the BCBS

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<sup>41</sup> For this purpose, in November 2015 the BCBS published a document on TLAC that proposes changes in the calculation of regulatory capital for all G-SIIs. See BCBS, *TLAC Holdings – Consultative Document* (Nov. 2015).

<sup>42</sup> See BCBS, *Revisions to the Standardised Approach for Credit Risk*, *supra* note 27, at 3–4.

<sup>43</sup> On the issue, see BCBS, *Capital Floors: the Design of a Framework based on Standardised Approaches – Consultative Document* (Dec. 2014).

<sup>44</sup> This framework is developed in BCBS, *The Standardised Approach for Measuring Counterparty Credit Risk Exposures* (Mar. 2014).

<sup>45</sup> For details, see BCBS, *Minimum Capital Requirements*, *supra* note 28, at 3–4.

<sup>46</sup> *Id.* at 1.

will implement new definitions for the instruments deemed to be held either on the banking book or the trading book.<sup>47</sup>

### C. Operational, Interest Rate, and Step-in Risk

The BCBS has advocated revisions to the operational risk framework laid down in Basel III, since that framework is considered relatively ineffective.<sup>48</sup> Modeling practices used for operational risk measurement are excessively complex and provide for wide variability in capital results, which undermines the comparability of capital results among banks.

To address this concern, the BCBS revealed a revised operational risk framework in March 2016, and its principles are likely to constitute a prominent component of the Basel IV package.<sup>49</sup> The innovative feature of this proposal lies in the use of a single, non-model-based standardized measurement approach (“SMA”) for calculating operational risk capital.

The newly-founded methodology will introduce a Business Indicator (“BI”) and an Internal Loss Multiplier (“ILM”), which are deemed to reflect individual firms’ past operational losses as a proxy for operational capital needs.<sup>50</sup> This simplified methodology is intended to enhance banks’ risk management practices and help build extra cushions of capital against subsets of operational risks, such as legal,<sup>51</sup> misconduct,<sup>52</sup> and climate risks,<sup>53</sup> which may easily endanger the viability of credit institutions.

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<sup>47</sup> *Id.* at 6–10.

<sup>48</sup> See BCBS, *Operational risk – Revisions to the Simpler Approaches - Consultative Document* (Oct. 2014), at 5–6.

<sup>49</sup> For details, see BCBS, *Standardised Measurement Approach for Operational Risk*, *supra* note 29.

<sup>50</sup> *Id.* at 3–7.

<sup>51</sup> The legal risk is the risk arising from the potential of negative lawsuits, unenforceable contracts, or adverse judgments on the viability of credit institutions. As the cases of Deutsche Bank and other major banks over the last few years demonstrate, this risk can be substantial and can erode the resilience of regulatory capital. For example, in the case of the penalty issued by the Federal Reserve against Deutsche Bank over its mortgage backed-securities and how the full amount of the penalty may affect the bank’s capital requirements, see Fabio Benedetti Valentini, *French Lawmakers Say Deutsche Bank U.S. Fine Could Cause Crisis*, Bloomberg (Oct. 5, 2016), available at <http://www.bloomberg.com/news/articles/2016-10-05/french-lawmakers-say-deutsche-bank-u-s-fine-could-cause-crisis> (last visited Oct. 14, 2016).

<sup>52</sup> It is important to note that the FSB published a report on misconduct risk in November 2015 that sets forth a number of principles for mitigating this risk that might become part of the Basel IV framework. FSB, *Measure to Reduce Misconduct Risk, Second Report* (Sept. 1, 2016).

<sup>53</sup> In the Internal Capital Adequacy Assessment Process (“ICAAP”), credit institutions are already required to consider non-quantifiable risks related to environmental and climate externalities. However, the need to improve the understanding of climate risk and its related management is today a cornerstone of risk management practice developments. For this reason, a number of studies have been published at the international level on how to deal with this operational risk problem and how to measure it for the purpose of capital requirements. See, e.g., Eur. Sys. Risk Bd., *Too Late, Too Sudden: Transition to a Low-Carbon Economy and Systemic Risk* (Report of the Advisory Scientific Committee, No. 6, Feb. 2016); Taskforce on

By the same token, Basel IV is expected to revisit the framework for capturing interest rate risk. As a foundation for this, in April 2016 the BCBS updated its principles on interest rate risk in the banking book, setting out methods that banks should use for measuring, managing, monitoring, and controlling this risk typology.<sup>54</sup> In addition, further BCBS proposals on market risk are expected in the near future.

Finally, it is worth noting that the BCBS has published a conceptual framework that could form the theoretical background for setting up a prudential approach aiming at identifying, assessing, and addressing so-called “step-in risk.”<sup>55</sup> Step-in-Risk is the risk underlying the relationship between a bank and shadow banking entities for which the bank may provide financial support beyond or in the absence of any contractual obligations in periods of financial distress.<sup>56</sup>

The BCBS proposal focuses on identifying unconsolidated entities that could generate significant step-in risk for banks. For this purpose, it sets out potential approaches that could be used to reflect step-in risk in banks’ prudential requirements. Although the development of such framework is at an early stage and its basic contours are only preliminary,<sup>57</sup> it is easy to assume that the Basel IV package will incorporate this risk category as one of its innovative prudential profiles.

#### D. Sovereign Risk

The Basel IV framework is also likely to reflect the outcome of the ongoing policy discussions on special prudential treatment of sovereign bonds.<sup>58</sup> In particular, a number of national policymakers are urging the BCBS to remove the zero risk-weight exemptions for sovereign exposures currently permitted under Basel III.<sup>59</sup>

The magnitude of sovereign risk and its spillover effects have been at the center of policy attention following the severe deterioration of Greek, Irish, Portuguese, Spanish,

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Climate-Related Financial Disclosures, *Phase I Report* (Mar. 31, 2016). For the insurance sector, a relevant survey is Prudential Regulatory Authority, *The Impact of Climate Change on the UK Insurance Sector* (Sept. 2015).

<sup>54</sup> See BCBS, *Interest Rate Risk in the Banking Book*, *supra* note 33.

<sup>55</sup> See BCBS, *Identification and Measurement of Step-In Risk - Consultative Document* (Dec. 2015).

<sup>56</sup> *Id.* at 1.

<sup>57</sup> The consultative document, in fact, proposes a number of potential approaches that could be used to reflect step-in risk in banks’ prudential measures. The BCBS will decide what proposal is to be incorporated in the Basel prudential requirements at a later stage.

<sup>58</sup> For a general overview of this current debate, along with the related counterparties, see Christian Castro & Javier Mencía, *Sovereign Risk and Financial Stability*, ESTABILIDAD FINANCIERA, May 2014, at 73–108.

<sup>59</sup> For example, see Danièle Nouy, *Is Sovereign Risk Properly Addressed by Financial Regulation?*, BANQUE DE FR. FIN. STABILITY REV., Apr. 2012, at 95–106 (arguing that the “current regulatory framework does not require from [sic] financial institutions to hold significant regulatory capital against sovereign risk, inadequately assuming sovereign debt as a low-risk and even a risk-free asset class”). Similarly, see Jens Weidmann, *Stop Encouraging Banks to Load up on State Debt*, FIN. TIMES (Oct. 1, 2013) (“The financial and sovereign debt crisis have underpinned the importance of breaking the disastrous sovereign-banking nexus – in which shaky bank balance sheets degrade the solvency of their sovereigns, and vice versa.”)

and Italian government bonds during the Euro zone debt crisis.<sup>60</sup> In the meantime, a number of proposals have been laid out to restructure the regulatory benefits that banks enjoy in investing in these assets, especially in terms of concentration limits and the securitization of sovereign bond pools.<sup>61</sup>

At this stage it is not possible to determine what might be the likely outcome of this policy debate due to the variety of options available. However, a BCBS consultation paper on this subject is expected in the upcoming months.<sup>62</sup> Although the concrete implementation of these rules may take years, this proposal will certainly advocate for a non-risk-free approach to sovereign exposures, with tremendous consequences for countries' financing, banks' purchase incentives, and wholesale funding.<sup>63</sup>

### E. *Large Exposures and Concentration*

In April 2014 the BCBS published its final supervisory framework on measuring and controlling large exposures as a backstop to risk-weighted capital requirements.<sup>64</sup> These new provisions are intended to provide a common minimum standard to capture and mitigate concentration risk, including a general cap on exposures to single counterparties set at 25% of bank's Tier 1 capital. For G-SIIs this limit is set at 15% for exposures to other G-SIIs.<sup>65</sup>

This large exposure framework is expected to be applied as of 2019 and will overrule the previous standards on large exposures set out in 1991.<sup>66</sup> More importantly, the new focus on concentration risk will supplement the revisions of the prudential framework expected under Basel IV, serving as a simple backstop to risk-weighted capital requirements.

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<sup>60</sup> See, e.g., Andreja Lenarčič et al., *Tackling Sovereign Risk in European Banks* (Eur. Stability Mechanism, Discussion Paper Series No. 1, Mar. 2016); Luca Guerrieri et al., *Banks, Sovereign Debt and the International Transmission of Business Cycles* (Bd. of Gov. of the Fed. Res. Sys., International Finance Discussion Papers No. 1067, Dec. 2012).

<sup>61</sup> For an overview of these proposals, see Eur. Sys. Risk Bd., *ESRB Report on the Regulatory Treatment of Sovereign Exposures* 106–47 (Mar. 2015).

<sup>62</sup> According to the Basel Committee's work program for 2015 and 2016, the BCBS is currently undertaking a review of regulatory treatment of sovereign risk. BANK FOR INTL. SETTLEMENTS, *The Basel Committee's Work Programme for 2015 and 2016*, [http://www.bis.org/bcbs/about/work\\_programme.htm](http://www.bis.org/bcbs/about/work_programme.htm) (last visited Dec. 5, 2016).

<sup>63</sup> An interesting analysis of the detrimental effects that may arise from implementing a non-risk free approach to sovereign bonds prudential treatment can be found in Michele Lanotte et al., *Easier Said Than Done? Reforming the Prudential Treatment of Banks' Sovereign Exposures* 19–31 (Bank of Italy, Occasional Paper No. 326, Apr. 2016).

<sup>64</sup> See BCBS, *Supervisory Framework for Measuring and Controlling Large Exposures* (Apr. 2014).

<sup>65</sup> *Id.* at 4, 16–17.

<sup>66</sup> The 1991 supervisory standard is set out in BCBS, *Measuring and Controlling Large Credit Exposures* (Jan. 1991).

### F. *Securitization*

Another notable element of the likely Basel IV package relates to securitization. In order to refine the Basel III provisions on securitization, which date back to the Basel II era, in July 2016 the BCBS published a final paper setting out the regulatory treatment for capitalizing securitization exposures.<sup>67</sup>

Based on this paper, a number of innovations are expected to be introduced for the purpose of calculating capital requirements. The framework aims at reducing complexity by limiting the number of approaches accepted for determining securitization capital. To this end, it favors the internal ratings-based approach in order to reduce the mechanistic reliance on external ratings.<sup>68</sup>

Although this new framework is considered to be part of Basel III, given the number of substantial changes proposed and the timeframe for implementation (January 2018),<sup>69</sup> it is more appropriate to conceptualize it as a complementary element of the Basel IV credit risk revisions described above.

### G. *Macroprudential Miscellanea*

Beyond the microprudential proposals outlined thus far, the Basel IV package could incorporate a number of new macroprudential instruments, which would complete the countercyclical regulatory dimension introduced with Basel III.

As part of such an effort, not only can exposure-based capital surcharges for G-SIIs and other credit institutions be implemented, but real estate tools, such as loan-to-value and debt-to-income caps, could also be developed in the near future by the BCBS.<sup>70</sup> In view of the concerns expressed about global real estate market dynamics,<sup>71</sup> a number of

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<sup>67</sup> See BCBS, *Revisions to the Securitisation Framework*, *supra* note 34.

<sup>68</sup> *Id.*, at 2–3.

<sup>69</sup> *Id.* at 1.

<sup>70</sup> For a more detailed survey on these macroprudential instruments, see Michel Dietsch & Cécile Welter-Nicol, *Do LTV and DSTI Caps Make Banks More Resilient?* (Débats Économiques et Financiers, No. 13, Aug. 2014) (demonstrating the efficiency of these tools in dampening households' indebtedness and ensuring stronger resilience to the general macroeconomic environment). For similar results, see also Luis I. Jácome & Srobona Mitra, *LTV and DTI Limits—Going Granular* (Intl. Monetary Fund, Working Paper No. 154, July 2015).

<sup>71</sup> For example, at European level concerns have been ultimately expressed by the European Systemic Risk Board. For detailed reports, see Eur. Sys. Risk Bd., *Report on Residential Real Estate and Financial Stability in the EU* (Dec. 2015). Specific concerns have been raised also by the Federal Reserve due to the current run-up of commercial real estate prices in US. For details, see Eric S. Rosengren, President & CEO, Federal Reserve Bank of Boston, Speech at Shanghai Advanced Institute of Finance, Beijing: Observations on Financial Stability Concerns for Monetary Policymakers (Aug. 31, 2016) (highlighting how commercial real estate prices are inflating in US due to the actual macroeconomic environment and noting that in this scenario, “should prevailing economic conditions change in response to a large negative economic shock, commercial real estate prices could decline relatively quickly, leading to large losses at leveraged firms”). See also Craig Torres & Jeanna Smialek, *Fed Warns of Vulnerabilities Building in Commercial Real*

proposals are likely to focus on curbing excessive growth in commercial and residential real estate and limiting excessive credit incentives for both lenders and borrowers.

In addition, the Basel IV framework could incorporate a macroprudential stress testing framework for liquidity and solvency risks.<sup>72</sup> The outcome of these macro stress tests—either on single banks or on the entire financial system—could then be used by competent authorities to impose additional liquidity surcharges or solvency requirements.<sup>73</sup>

#### H. *Enhanced Disclosure*

Finally, in order to reflect the number of regulatory changes proposed under the Basel IV package, it is likely that the Basel III disclosure framework will be amended accordingly. The new disclosure requirements are expected to provide deeper insights into capital and liquidity ratios to inform the market about any given bank's risk profile.

As a result, additional disclosure rules will seek to provide more granular data on, in particular, banks' loss-absorbing capacity and operational and market risk management at both the individual and aggregate level. The foundations of this enhanced disclosure regime can be found in the consultative document on Pillar 3 disclosure requirements published by the Basel Committee in March 2016.<sup>74</sup>

#### V. CONCLUSIONS: A DISRUPTIVE IMPACT FOR THE GLOBAL BANKING INDUSTRY?

If all these proposals were implemented, what would remain of the Basel III framework? Not much. The adoption of these proposals as supplementary prudential standards would override the core components of Basel III, setting the stage for a radical reformulation of banking law throughout the world. If this holds true, market participants need to ponder the implications of these regulatory reforms on the banking industry as a whole.<sup>75</sup>

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*Estate*, BLOOMBERG (June 21, 2016), <http://www.bloomberg.com/news/articles/2016-06-21/fed-warns-of-vulnerabilities-building-in-commercial-real-estate>.

<sup>72</sup> The premises of this macroprudential shift in stress testing are laid down in BCBS, *Making Supervisory Stress Tests More Macroprudential: Considering Liquidity and Solvency Interactions and Systemic Risk* (BCBS, Working Paper No. 29, Nov. 2015). See also Dimitri G. Demekas, *Designing Effective Macroprudential Stress Tests: Progress So Far and the Way Forward* (Intl. Monetary Fund, Working Paper No. 15/146, June 2015).

<sup>73</sup> For a discussion of this regulatory hypothesis, see Daniel K. Tarullo, Speech at the Yale University School of Management Leaders Forum: Next Steps in the Evolution of Stress Testing, (Sept. 26, 2016).

<sup>74</sup> See BCBS, *Pillar 3 Disclosure Requirements – Consolidated and Enhanced Framework – Consultative Document* (Mar. 2016).

<sup>75</sup> For an in-depth overview of the main components of Basel IV and how these rules are likely to change the current existing Basel III framework and affect the global banking industry, see PWC, *Quo Vadis “Basel IV”*, (July 2016), <http://www.pwc.com/gx/en/issues/the-economy/assets/basel-iv-toolbox.pdf>; KPMG, *Basel IV Revisited - The Fog Begins to Clear* (Sept. 2015).

Compliance with Basel III imposed substantial costs on credit institutions. The array of regulatory changes introduced by the BCBS in 2011 required banks to adjust not only their capital and liquidity structure, but also their business models, governance structure, and investment strategies.<sup>76</sup> Although compliance with these requirements has provided certain benefits in terms of resilience and stability of the financial system, the associated regulatory costs have, no doubt, weakened the lending capacity of individual banks.<sup>77</sup> And, along with an environment of low interest rates, the reduced lending capacity may have, in turn, negative spillover effects on banks' profitability.<sup>78</sup>

In this evolving scenario, the implications of a future Basel IV package might be overwhelming. On the one hand, the likely simplification of risk-weighting and parameter calculations could provide some compliance cost savings to banks. On the other hand, limitations on the use of internal risk models for the purpose of capital requirements, along with the general increase of prudential buffers, could further undercut the viability of banking activities.<sup>79</sup> In such a regulatory environment, further costly adjustments on risk management and the governance structure will follow in the upcoming years, while the current rise of new lending providers, such as peer-to-peer lending platforms<sup>80</sup> and lending companies, might pose additional burdens to banks' competitiveness.

For now, whether the future macroeconomic benefits of the Basel IV package for society as a whole are likely to outweigh the microeconomic costs for individual institutions is a matter of speculation.<sup>81</sup> Nevertheless, shedding some light on the ongoing

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<sup>76</sup> A quantitative study on banks' structural changes driven by the Basel III package is laid down in İnci Ötker-Robe et al., *Impact of Regulatory Reforms on Large and Complex Financial Institutions* (Intl. Monetary Fund, Staff Position Note No. 16, Nov. 2010).

<sup>77</sup> For a cost/benefit analysis of Basel III prudential requirements, see, e.g., Meilan Yan et al., *A Cost-Benefit Analysis of Basel III: Some Evidence from the UK*, 25 INTL. REV. OF FIN. ANALYSIS 73 (2012). In addition, for a quantitative analysis of the overall costs borne by banks in US, Europe, and Japan in complying with the Basel III reform, see Douglas Elliott et al., *Assessing the Cost of Financial Regulation* (Intl. Monetary Fund, Working Paper No. 233, Sept. 2012).

<sup>78</sup> For example, see Eur. Banking Auth., *Overview of the Potential Implications of Regulatory Measures for Banks' Business Models* 9 (Feb. 2015) (stating that Basel III structural reforms, as implemented in EU, are likely to have an adverse influence on the profitability of banks due to an increase in funding costs and operational complexity).

<sup>79</sup> According to financial analysts and bankers, the impact of these measures is likely to be dramatic for the whole industry, as the new rules will further penalize the core lending activities of credit institutions. Against this backdrop, Basel IV could easily become a game changer for the whole lending market. For details, see John Glover & Nicholas Comfort, *Banks Push Back Against Basel's 'Surreal' Plans*, BLOOMBERG (Aug. 8, 2016), <http://www.bloomberg.com/news/articles/2016-08-08/banks-look-to-g20-vow-as-bulwark-against-basel-s-surreal-plans>.

<sup>80</sup> For a literature overview on peer-to-peer lending market, see Alexander Bachmann et al., *Online Peer-to-Peer Lending? A Literature Review*, J. OF INTERNET BANKING AND COMMERCE (Aug. 2011).

<sup>81</sup> However, a preliminary attempt to quantify the potential impact of Basel IV with respect to the European banking industry is made in Rainer Masera, *The Emerging Basel 4: Critical Points for Banks and the Economy*, BANCARIA (Jan. 2016), at 6–14.

debate concerning the premises of Basel IV is certainly instrumental in understanding what lies beyond the horizon of banking regulation.