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## Basel III and the Future of Project Finance Funding

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# BASEL III AND THE FUTURE OF PROJECT FINANCE FUNDING

Tianze Ma\*

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## I. INTRODUCTION

Project finance is a non-recourse financing technique that funds investment projects based upon the projected cash flows of a project, rather than the general assets or creditworthiness of project sponsors. It is a crucial source of funding for various industries that are vital to the modern economy, such as infrastructure, energy, and telecommunication. Typically, a project financing structure involves one or more sponsors who act as investors and a syndicate of banks that provide loans that fund 70-80% of the project. As a result, regulation of banking activities, such as capital requirements or liquidity coverage ratios, significantly affects banking industry's position on project finance.

Since the 2007-2008 financial crisis (the Financial Crisis), the international banking community has recognized the weaknesses in the pre-Fi-

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nancial Crisis banking regulatory framework, and responded with a series of reforms. The new rules, commonly referred to as Basel III, tightened banking regulation in a number of areas closely related to the traditional project finance funding scheme through commercial banks.

This paper seeks to analyze the new requirements in the Basel III banking regulatory framework and explore their impact on commercial banks' project finance portfolio. The paper begins with a general introduction of the Basel Accords, followed by an analysis of the changes in the Basel III requirements and their potential impact on project finance, in particular the effects of the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR). The paper ends with a discussion of alternative sources of project finance funding that emerged as a result of the new regulatory regime.

## II. FROM BASEL I TO BASEL III

One would normally associate the name "Basel" with the Swiss city known for its postcard scenery and fine-watchmaking industry, but for bankers around the world, the name is associated with a series of global banking regulatory protocols conceived and issued by the Basel Committee on Banking Supervision (BCBS) under the Bank for International Settlement (BIS) located in the city of Basel.

BCBS and the first Basel Accord were born in an era of increasing international banking activities. That era, the 1970s, was characterized not only by floating exchange rates and high inflation, but also by the rapid growth of international financial markets and of cross-border money flows. In 1974, the collapse of Bankhaus Herstatt and Franklin National Bank highlighted the lack of efficient banking supervision of banks' international activities, which prompted the G10 central bank Governors to form the BCBS as a forum for regular cooperation on banking supervisory matters.<sup>1</sup> Its objective was, and continues to be, to enhance understanding of key supervisory issues and improve the quality of banking supervision worldwide.<sup>2</sup>

The first Basel Accord, known as Basel I, was devised in 1988 and introduced a credit risk measurement framework for internationally active banks. It set out minimum capital requirements (i.e., the amount of capital as a percentage of risk-weighted assets) for banks with the goal of minimizing credit risk.<sup>3</sup> Bank assets were grouped into different categories

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1. Basel I was largely a response to the perceived failings of financial deregulation throughout the 1980s. See Peter King & Heath Tarbert, *Basel III: An Overview*, 30(5) *Banking & Fin. Servs. Policy Report* 1 (2011).

2. BANK FOR INTERNATIONAL SETTLEMENT, *Basel Committee on Banking Supervision*, <https://www.bis.org/bcbs> (last visited Dec. 1, 2016).

3. BCBS, *International Convergence of Capital Measurement and Capital Standards*, 8 (Jul. 1988), <http://www.bis.org/publ/bcbs04a.pdf> (stating, "[t]here are many different kinds of risks against which banks' managements need to guard. For most banks the major risk is credit risk. . .").

depending on their respective credit risk, and weighted accordingly. These assets were then referred to as risk-weighted assets. For example, cash carries a risk weight of 0%, residential mortgages 50%, and most corporate debts are 100% risk-weighted.<sup>4</sup> The required minimum capital ratio was 8%, calculated by dividing a bank's core capital by its risk-weighted asset value.<sup>5</sup>

The second Basel Accord, Basel II, was first published in 2004 and addressed new risks that had arisen in the banking world. It refined the Basel I rules, which focused on the definition of capital and risk weighting, in the context of credit risk. Basel II's reforms were grouped into three main areas, known as the three pillars.

Pillar 1, the capital requirements pillar, set out how banks should calculate the minimum capital they are required to hold to cover credit risk, market risk, and operational risk. Like the Basel I rules, the minimum level of banks' capital was determined with regard to the riskiness of the assets held by banks, with a minimum capital ratio of no less than 8% of a bank's risk-weighted assets. However, in order to have banks hold more capital against riskier assets, it establishes new asset classes based on asset types, and subclasses based on credit risk.<sup>6</sup>

Pillar 2, the supervisory pillar, set out a supervisory review process intended to enable supervisors to both confirm that banks have adequate capital resources and compel banks to hold those resources if they do not already hold them. It also intended to encourage banks to develop and use better risk management techniques.<sup>7</sup>

Pillar 3, the market discipline pillar, encouraged discipline by means of a set of disclosure requirements for bank capital adequacy based on the Pillar 1 framework. The aim was to allow other market participants to assess key information on a bank's capital, risk exposures, and risk assessment processes. By the sharing of information, the disclosure requirement facilitates assessment and understanding of a bank by other market players, such as investors, analysts, customers, other banks, and rating agencies, thus leading to good corporate governance.<sup>8</sup>

While the initial Basel II proposal assumed that project loans were considerably riskier than corporate loans and therefore would require large increases in capital reserves, project finance bankers worked collec-

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4. *Id.* at 8-9, 21.

5. *Id.* at 14.

6. Under Basel II, banks must categorize banking-book exposures into broad classes of assets with different underlying risk characteristics. The classes of assets are (a) corporate, (b) sovereign, (c) bank, (d) retail, and (e) equity. BCBS, *Part 2: The First Pillar – Minimum Capital Requirements*, BCBS 52 (June 2006), <http://www.bis.org/publ/bcbs128b.pdf> [hereinafter *Part 2: The First Pillar – Minimum Capital Requirements*].

7. See BCBS, *Part 3: The Second Pillar – Supervisory Review Process*, 1 (June 2006), <http://www.bis.org/publ/bcbs128c.pdf> [hereinafter *Part 3: The Second Pillar – Supervisory Review Process*].

8. See *id.* at 226.

tively to develop default and loss statistics to disprove this assumption.<sup>9</sup> By showing that the performance of project loans is similar to that of low-investment-grade corporate loans, the project finance bankers persuaded the Basel Committee to reduce the proposed capital requirements for project loans.<sup>10</sup> However, the original impact of Basel II was a reduction in commercial banks' risk-adjusted return on project loans to undesirable levels, and some banks still reduced their project lending, even though the capital requirements initially proposed were reduced.<sup>11</sup>

The Financial Crisis revealed a number of weaknesses of the global regulatory framework. Elements of Basel II that contributed to the Financial Crisis include: (1) the regulatory capital regime was too permissive; (2) the definition of capital was so broad that it eroded the capital quality; (3) there was excessive on- and off-balance sheet leverage of banks; (4) there were insufficient liquidity buffers; and (5) the interconnectedness of the industry exacerbated the rapid spread of any problems.<sup>12</sup>

The exposure of these weaknesses in the existing regime forced regulators to reform the Basel Accord once again, introducing what has been known as Basel III in December 2010. Various revisions and additions were undertaken in between 2010 and 2014, such as a revised liquidity framework published in January 2013, revisions in the leverage ratio regime, and an expanded NSFR issued in January 2014. In this regard, the Basel Accord should be viewed as an ongoing process, during which the Financial Stability Board (FSB)<sup>13</sup> and the BIS assist the BCBS to make adjustments to the current regime in response to the changing financial market.

### III. AREAS OF REFORM IN BASEL III

To ensure that banks be more resilient to economic turbulence, Basel III has made substantial changes to the previous regulatory regime. The most important changes from Basel II to Basel III are summarized in this section.

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9. *Part 2: The First Pillar – Minimum Capital Requirements*, *supra* note 6 at 53; Benjamin Esty et al., *An Overview of Project Finance and Infrastructure Finance – 2014 Update*, Harvard Business School No. 214-083, 14 (Jan. 2004), <http://www.hbs.edu/faculty/Pages/item.aspx?num=47358>.

10. Benjamin C. Esty & Aldo Sesia, *Basel II: Assessing the Default and Loss Characteristics of Project Finance Loans (A)*, HARV. BUS. SCHOOL, (2002, as revised Jan. 2004) <http://www.hbs.edu/faculty/Pages/item.aspx?num=29463>.

11. *Id.*

12. RUTH WANDHÖFER, *TRANSACTION BANKING AND THE IMPACT OF REGULATORY CHANGE BASEL III AND OTHER CHALLENGES FOR THE GLOBAL ECONOMY* 117 (2014). *See also* ROD MORRISON, *THE PRINCIPLES OF PROJECT FINANCE* 96 (Rod Morrison ed., 2012).

13. Established at the 2009 G-20 London Summit, the Financial Stability Board is an international body that monitors and makes recommendations about the global financial system. *See* FINANCIAL STABILITY BOARD, *Our History*, <http://www.fsb.org/about/history>.

### A. Higher Quality and Quantity Requirements of Bank Capital

Since the days of Basel I, regulation of capital has been at the core of the Basel regimes. According to BCBS, the Financial Crisis showed that banks held insufficient levels of high quality capital.<sup>14</sup> The minimum capital ratio maintains stability of banking activities by ensuring that banks retain enough capital to absorb losses in the event of financial turbulence.<sup>15</sup> However, the Financial Crisis also revealed the inconsistency in the definition of capital across jurisdictions and the lack of disclosure that would have enabled the market to fully assess and compare the capital quality across jurisdictions. To deal with these problems, the new definition of capital focuses more on common equity, the highest quality component of a bank's capital.

Like Basel I and II, Basel III requires a bank's overall capital ratio to be 8% at all times. However, it adds requirements as to the composition of such capital:

- a) 6% must consist of Tier 1 capital, of which 4.5% must be in common equity, i.e., ordinary shares and retained earnings. The remaining 1.5% may be made up of "additional going concern capital," which has the equity-like ability to absorb losses.
- b) 2% may consist of Tier 2 capital, which may have more debt-like characteristics than Tier 1. Nonetheless, it must be deeply subordinated and meet strict criteria as to its loss absorption. General criteria for inclusion in Tier 2 Capital include: subordinated to depositors, neither secured nor covered by a guarantee of the issuer, and a minimum original maturity period of at least five years.<sup>16</sup>

Basel III also imposes an additional capital requirement of 2.5% of risk-weighted assets, known as the "capital conservation buffer."<sup>17</sup> This buffer is created so that banks have an additional capital cushion to absorb economic losses in period of high financial turmoil. After this buffer is drawn upon, banks are supposed to rebuild it by reducing discretionary distributions of earnings. If a bank does not maintain this buffer, it may be constrained from paying dividends or bonuses. Therefore no bank is likely to treat this capital conservation buffer requirement as optional.<sup>18</sup>

### B. Maximum Leverage Ratio

One underlying feature of the Financial Crisis was the build up of excessive on- and off-balance sheet leverage in the banking system, which was also a prominent feature in previous crises.<sup>19</sup> Leverage is the ratio of

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14. BCBS, *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems*, 1 (Dec. 2010), <http://www.bis.org/publ/bcbs189.pdf> [hereinafter *Basel III: A Global Regulatory Framework*].

15. *See id.*; *see also* WANDHOFER, *supra* note 12, at 114-15.

16. *See Basel III: A Global Regulatory Framework*, *supra* note 14, at 14-19, 27-28.

17. *Id.* at 54-57.

18. MORRISON, *supra* note 12, at 96.

19. *Basel III: A Global Regulatory Framework*, *supra* note 14, at 4.

debt borrowed relative to the amount of the owner's equity interest. As the market forced the banking sector to reduce its leverage (e.g., by the sale of debt assets), downward pressure on asset prices was amplified, which further exacerbated the feedback loop between losses, declines in bank capital, and the contraction in credit availability.<sup>20</sup>

BCBS therefore introduced a new gross leverage ratio requirement that will become mandatory in 2018. According to Basel III, a bank's capital has to be equal to at least 3% of its total un-weighted assets, meaning that the maximum leverage ratio for a bank will be 33.3 times its capital. Significantly, off-balance sheet items and net derivative exposures are to be included in the test.<sup>21</sup> The objectives are two-fold. First, by constraining leverage, Basel III helps to mitigate the risk of the systemic deleveraging processes, which can damage the financial system. Second, by supplementing the risk-based measure with a simply, transparent, independent measure of risk, it safeguards against model risk and measurement error.<sup>22</sup>

The new leverage ratio requirement remains controversial for several reasons. The non-risk-adjusted measure could incentivize banks to focus on lending with higher risks, and correspondingly higher returns, to increase returns on equity. Pressure also arises on banks to sell low margin assets (e.g., mortgages), which could drive down prices on these assets.<sup>23</sup> Additionally, the market and the rating agencies may require banks, to maintain a lower leverage ratio than required by the regulator.<sup>24</sup> Nonetheless, the new requirement is expected to act as a backstop measure to reduce the risk of excessive leverage build-up in the institution.

### C. Liquidity Ratio

As the Financial Crisis has shown, liquidity can be as important a variable as bank capitalization in valuing bank soundness and its ability to withstand economic downturns. The banking system's inability to repay its liabilities with sufficiently liquid assets is considered to be a main cause of the Financial Crisis.<sup>25</sup> Despite adequate capital levels, many banks during the early "liquidity phase" of the Financial Crisis still experienced difficulties due to the lack of prudent liquidity management. The rapid reversal in market conditions illustrated how quickly liquidity could evaporate and leave a bank in a plight of illiquidity for an extended period.

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20. *Id.*

21. *See id.* at 61-64.

22. *Id.* at 4.

23. KPMG, *Basel III: Issues and Implications*, 10 (2011), <http://www.kpmg.com/global/en/issuesandinsights/articlespublications/documents/basel-iii-issues-implications.pdf>.

24. *Id.*

25. *See* STEFANO GATTI, *PROJECT FINANCE IN THEORY AND PRACTICE: DESIGNING, STRUCTURING AND FINANCING PRIVATE AND PUBLIC PROJECTS* 322 (Academic Press 2d ed. 2012).

To strengthen Basel III's liquidity framework, BCBS introduced two new minimum standards for funding liquidity: the LCR and the NSFR. LCR is the ratio of high-quality liquid assets (HQLA) to the expected cash outflows in the following 30 days estimated on the basis of a stressed scenario. The LCR is intended to promote short-term resilience to potential liquidity disruptions, and to help ensure that global banks have sufficient high-quality liquid assets in stressed funding scenarios.<sup>26</sup> NSFR is the ratio of stable sources of funding available to the bank, also called available stable funding (ASF), to the corresponding optimal value of the stable funding sources, depending on the structure and the quality of bank assets.<sup>27</sup> ASF must at all times be at least 100% of required stable funding (RSF).<sup>28</sup> It is designed to encourage and incentivize banks to use stable sources to fund their activities to reduce dependency on short-term wholesale funding.

#### D. *Countercyclical Buffer*

BCBS pointed out that "losses incurred in the banking sector can be extremely large when a downturn is preceded by a period of excess credit growth."<sup>29</sup> These losses can destabilize the banking sector and spark a vicious circle, whereby problems in the financial system can contribute to a downturn in the real economy, which then feeds back into the banking sector. These interactions highlight the particular importance of additional capital defenses in periods where systemic risks of stress are growing markedly.

To ensure that banking sector capital requirements take into account the macro-financial environment in which banks operate, BCBS introduced in Basel III a countercyclical buffer, in addition to the capital conservation buffer. Where there is excess growth of credit, the national authority has the option to impose an additional 2.5% buffer of the risk-weighted assets.<sup>30</sup> This means that the minimum capital requirement could in theory be as high as 13% (comprised of 8% basic capital requirement, 2.5% capital conservation buffer, and 2.5% countercyclical buffer). However, the focus on excess aggregate credit growth means that jurisdictions are likely to only need to deploy the buffer on an infrequent basis.

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26. BCBS, *Basel III: The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools*, 4 (Jan. 2013), <http://www.bis.org/publ/bcbs238.pdf>.

27. The amount of ASF is measured based on the broad characteristics of the relative stability of an institution's funding sources, including the contractual maturity of its liabilities and the differences in the propensity of different types of funding providers to withdraw their funding. See BCBS, *Basel III: The Net Stable Funding Ratio*, 3 (Oct. 2014), <http://www.bis.org/bcbs/publ/d295.pdf>.

28. *Id.* at 2.

29. BCBS, *Strengthening the Resilience of the Banking Sector*, 41 (Apr. 2010), <http://www.bis.org/publ/bcbs164.pdf> [hereinafter *Strengthening the Banking Sector*].

30. *Basel III: A Global Regulatory Framework*, *supra* note 14, at 55; see also MORRISON, *supra* note 12, at 98.



### E. *Changes to Risk Coverage and Weightings*

Since a bank's risk-weighted assets are calculated by multiplying the asset values by their corresponding weighting factors, the weighting factor is of vital importance in the calculation of the bank's capital ratio. BCBS recognized that the failure of Basel II regime to capture on- and off-balance sheet risks, as well as derivative related exposures, was a key destabilizing factor during the Financial Crisis. In response to these shortcomings, Basel III put in place a series of additional capital charges for different risks, primarily exposure to financial institutions and counterparty risk on derivative exposures. These capital charges increased the relative amount of capital that banks have to allocate to their trading book.<sup>31</sup>

## IV. SIGNIFICANCE OF THE NEW LIQUIDITY REQUIREMENTS

Banks face a dilemma when their corporate customers seek long-term loans that will be difficult to sell or use as collateral, such as project finance loans. On the one hand, a bank could fund such loans using short-term financing sources. These funding sources, although lower in cost, may dry up in times of economic stress, leaving the bank with a severe liquidity problem.<sup>32</sup> On the other hand, if the bank secures longer-term sources of financing at a higher cost to fund such loans, it erodes the bank's profitability.<sup>33</sup>

Many banks opted for the former short-term approach prior to the Financial Crisis, but consequences were ultimately disastrous. When short-term financing sources effectively shut down during the early stages of the Financial Crisis, even some adequately capitalized banks found themselves in dire straits because of liquidity concerns.<sup>34</sup> BCBS noted that “[d]uring the early liquidity phase of the financial crisis starting in 2007, many banks – despite meeting the existing capital requirements – experienced difficulties because they did not prudently manage their liquidity.”<sup>35</sup>

To promote prudent liquidity management, the Basel III accord proposes two standards for liquidity: the minimum ratio requirements of LCR and of NSFR. These liquidity standards are arguably the most significant addition to the Basel III framework and are likely to have the most far-reaching impact on global project finance industry.

### A. *Liquidity Coverage Ratio*

As noted above, the LCR requires banks to hold sufficient HQLA in order to cover their total net cash outflows over a 30-day period. In es-

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31. MORRISON, *supra* note 12, at 96-97.

32. Christian M. McNamara & Andrew Metrick, *Basel III – Shadow Banking and Project Finance (Case Study 2014-1G-V1)*, Yale Program on Fin. Stability, 2 (2014).

33. *Id.*

34. *Id.*

35. *Strengthening the Banking Sector*, *supra* note 29, at 1.

sence, banks have to behave as if they were constantly in a 30-day Financial Crisis and need to hold a minimum amount of assets that can be converted easily into cash in private markets to survive the stress scenario.<sup>36</sup>

HQLA are defined as assets with certain safety characteristics that allow them to be sold easily in the market with limited losses, so that the bank can fund its cash outflows.<sup>37</sup> HQLA includes cash, central bank reserves, and government bonds.<sup>38</sup> The expected net outflow is simply the total expected cash outflow, such as withdrawals of retail deposits and drawdowns by borrowers on committed loan facilities, minus total expected inflow.<sup>39</sup>

The LCR requirement treats undrawn facilities such as revolving loans and liquidity facilities differently. An undrawn revolving loan requires 10% liquidity cover if made to a non-financial corporate borrower, but 100% cover if made to a special purpose vehicle (SPV), including the SPVs used in most project financings.<sup>40</sup> Banks will also have to have HQLA equal to a certain percentage (as determined by national regulators) of the amount of any undrawn letters of credit (LC). Thus, it is foreseeable that LC and revolving credit facilities (RCF) will make it more difficult for banks to meet their required LCR's.<sup>41</sup>

While it may be theoretically possible for a bank to reduce the impact of risk from undrawn facilities by obtaining an indemnity from another bank, any indemnity will have a negative impact on the LCR of such indemnifying bank because it reduces the indemnifying bank's HQLA and therefore makes receipt of those indemnities costly. Therefore, the issuing bank is unlikely to benefit from any indemnity commitment from other banks as a liquid asset for purposes of calculating the LCR. This will almost certainly exacerbate the unfavorable position of LCs and RCFs of the bank.<sup>42</sup>

### B. *Net Stable Funding Ratio*

The NSFR is the second liquidity standard introduced by Basel III, and its purpose is "to reduce funding risk over a longer time horizon by requiring banks to fund their activities with sufficiently stable sources of funding."<sup>43</sup> Specifically, the NSFR is intended "to promote more medium and

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36. Etienne Gelencser & James Campbell, *Basel III Implementation and the Rise of Japanese Lenders*, Project Finance Magazine (2014).

37. WANDHOFER, *supra* note 12, at 123.

38. See MORRISON, *supra* note 12, at 97.

39. WANDHOFER, *supra* note 12, at 124.

40. MORRISON, *supra* note 12, at 98.

41. See WATSON, FARLEY & WILLIAMS, *Basel III: Potential Effects on Project Finance*, 2 (2012), <http://www.wfw.com/wp-content/uploads/2014/09/WFW-Basel-III-ProjectFinance-Feb2012.pdf>.

42. *Id.* at 2.

43. *Strengthening the Banking Sector*, *supra* note 29, at 1-2.

long-term funding of the assets and activities of banking organizations” to prevent the reoccurrence of a balance sheet mismatch that created significant problems from 2007 to 2009 when short-term funding was used to back long-term assets (such as project finance loans).<sup>44</sup>

To achieve this objective the NSFR evaluates a bank’s available amount of stable funding (capital and liabilities expected to be reliable over a one-year timeframe) relative to its required amount of stable funding (based on the liquidity characteristics and residual maturities of the bank’s assets and off-balance sheet exposures). As discussed above, the NSFR mandates that the ratio of ASF to RSF be at least 100% on an ongoing basis.<sup>45</sup>

In essence, the NSFR mandate means that the less liquid and longer-term a bank’s assets and exposures, the more stable funding it will need to have available to it.<sup>46</sup> The result is that banks will have to secure longer-term, higher cost sources of funding for long-term, illiquid assets, creating an incentive for banks to avoid such assets overall.

While the NSFR will not come into force until 2018, market pressure among peers is already causing banks to adjust their funding profile to meet basic NSFR requirements ahead of schedule and often at significant cost to banking business.<sup>47</sup> Depending on the nature of the specific loan, project finance assets would typically be allocated to RSF categories with an RSF factor ranging from 65% to 100%. This means that banks would be required by the NSFR to maintain a correspondingly large amount of ASF for a long period of time.<sup>48</sup> As a result, many players in the project finance market have already announced an intention to withdraw due to increased costs. Those who continue to lend in the sector do so at reduced tenors.<sup>49</sup> In addition, they seek to ensure that loan facilities are transferable without borrower consent, and that transactions are structured to take into account liquidity requirements.<sup>50</sup>

#### V. IMPACT OF BASEL III ON FUNDING PROJECT FINANCE TRANSACTIONS

Commercial banks were the major source of funding for international projects prior to the Financial Crisis. They were willing to make project finance loans with long-maturity, covering both the project’s construction and operation. Project bonds, although a meaningful funding source since

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44. BCBS, *Basel III: The International Framework for Liquidity Risk Measurement, Standards and Monitoring*, 31 (Dec. 2010), <http://www.bis.org/publ/bcbs188.pdf>.

45. McNamara & Metrick, *supra* note 32, at 3.

46. *Id.*

47. *Id.* at 6-7.

48. *Id.* at 7.

49. SHEARMAN & STERLING LLP, *Basel III Framework: Net Stable Funding Ratio (Proposed Standards)*, 3 (2014), <http://www.shearman.com/~media/Files/NewsInsights/Publications/2014/12/Basel-III-Framework-The-Net-Stable-Funding-Ratio-FIA-120514.pdf>.

50. *Id.*

the 1990s, were never the dominant funding source, as capital markets and institutional investors were reluctant to accept construction phase risk.<sup>51</sup>

Even though Basel III will not be fully integrated until 2018, the changes in banking regulation and supervision it introduced are likely to have substantial impact on the outlook for project financing.

#### A. Increase in Bank Funding Costs

Because of the enhanced capital requirements and tougher definition of capital, banks will have to bear higher costs when funding project finance loans. Various sources estimate that the implementation of Basel III could add between around 60 bps and 110 bps to a bank's funding costs, as compared with Basel II.<sup>52</sup> This estimation excludes the proposed global systemically important banks (G-SIB) requirements, which have increased minimum ratio for common equity for global systemically important banks. Since G-SIB institutions carry out a major portion of global project finance transactions, it is expected that the actual impact on bank funding cost will be even higher than the above estimate.<sup>53</sup> Empirical data suggests that pricing remains elevated relative to pre-Financial Crisis levels, and the number of lenders able to lend project loans for longer than 10 years has also become smaller.<sup>54</sup>

#### B. Shorter Tenors for Project Finance Loans

Largely as a consequence of the NSFR, banks are increasingly unwilling to finance project finance with long-maturity loans. Currently, the marketplace for tenors greater than seven to ten years grows smaller, especially for larger loans above £100 million.<sup>55</sup> Appetite for loan tenors of more than 15 years is minimal.<sup>56</sup>

To adapt to the new Basel regime, banks will seek to manage their commitment to very long-term exposures in various ways, and project debt structures may evolve as a result. For example, commercial banks may move towards shorter-term mini-perm facilities with bullet or balloon final repayments, so that the bank's risk is essentially limited to the construction phase.<sup>57</sup> There has also been "an increased move towards 'semi-perm' structures, under which the borrower is given incentives to refinance, after several years, through the use of 'cash sweep' mechanisms and

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51. JOHN M. NIEHUSS, *INTERNATIONAL PROJECT FINANCE IN A NUTSHELL*, 208 (West, 2010).

52. Philipp Harle et al., *Basel III and European Banking: Its Impact, How Banks Might Respond, and the Challenges of Implementation*, McKinsey & Company (2011), 9.

53. WATSON, FARLEY & WILLIAMS, *supra* note 41 at 1.

54. John F. Greenwood, *Innovative Solutions in Infrastructure Financing*, Citi Project & Infrastructure Finance, (2014).

55. MORRISON, *supra* note 12, at 100.

56. Gelencser & Campbell, *supra* note 36.

57. NIEHUSS, *supra* note 51, at 208. *See also* WATSON, FARLEY & WILLIAMS, *supra* note 41, at 2.

increases in margin towards the end of a mini-perm.”<sup>58</sup> Alternatively, banks could persuade project sponsors to accept refinancing risk by structuring loans that mature at seven to ten years, depending on the project.<sup>59</sup> Sponsors will then have to play a more active role in the early stage of the project through increased equity contributions and construction completion guarantees.<sup>60</sup>

### C. *Less Use of Letters of Credit and Revolving Credit Facilities*

Working capital facilities in the project context will likely require 100% short-term liquidity cover because project financing is usually made to an SPV. This makes financing RCF relatively expensive for banks. However, these types of facilities are often a smaller proportion of a project’s overall debt, and reduced availability and increased costs of RCFs may not be a critical issue.

More important may be the impact on LCs, demand for which is significant in the projects market. Basel III allows national regulators to specify the level of LCR cover they will require for letters of credit, and many have yet to specify what level they will demand.<sup>61</sup> But even liquidity coverage requirements of 25% could make it difficult for banks to provide these products economically.<sup>62</sup> It is possible that banks will tie a provision of a LC facility to receipt concessions in other areas from sponsors. Given the crucial role of LCs in project finance, however, they are not likely to disappear from the project finance market.<sup>63</sup>

## VI. THE RISE OF ALTERNATIVE FUNDING

With the introduction of Basel III regulatory reforms, the landscape of project financing is changing. As traditional lenders in the banking industry face more stringent requirements, projects worldwide are increasingly turning to capital markets to finance the continued demand for growth. This section analyzes such impact from two interlinked perspectives – the rise of project bonds and institutional investors – with a focus on infrastructure financing.

### A. *The Rise of Project Bonds*

The use of capital markets in project financing is not new. When there is shortage of public money, governments have been successful in using public-private partnerships (PPPs) to help finance infrastructure projects, as the private sector can be more efficient, have more expertise, and have

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58. MORRISON, *supra* note 12, at 100.

59. *Id.*

60. NIEHUSS, *supra* note 51, at 209.

61. MORRISON, *supra* note 12, at 100.

62. *Id.*

63. *Id.*

greater access to financial resources and markets.<sup>64</sup> Traditionally, the major source of financial market funding for infrastructure projects has been the commercial banks with a lesser contribution from project bond issued in the capital market.

However, the situation is different after the Basel III reforms. Because banks' balance sheets are constrained by the capital requirements and liquidity ratios described above, they are no longer able to provide substantial amounts of long-term project finance lending.<sup>65</sup> This is especially significant as the shortfall in investment for essential infrastructure projects around the world is rapidly accumulating – the World Economic Forum (WEF) currently estimates the shortfall to exceed US \$1 trillion annually.<sup>66</sup> This creates a pressing need for new funding sources and led to growing interests in the use of project bonds to attract investors. Highly rated bonds are more liquid than project finance loans and are, by nature, a long-term commitment which matches institutional investors' long-term liabilities and also PPP contract maturities, and thus entail less refinancing risk.

The development of project bonds in Europe shows how they can play a more significant role in financing the infrastructure project market. Four aspects have been identified as contributing factors to the evolvement of this bond market. First, in Europe, there are clients looking for more competitive pricing to finance projects. Second, institutional investors, such as pension funds, constantly seek to diversify their portfolios, and infrastructure projects in principle can meet their requirements. Third, the new regulatory framework limits the traditional bank lending, making them unable to meet the needs of the European infrastructure project market. Fourth, and finally, several supportive instruments for bond funding developed, such as the Europe 2020 Project Bond Initiative (PBI), which, through credit support, will enhance a project bond's credit rating to levels acceptable to investors.<sup>67</sup>

The Europe 2020 PBI, launched as a pilot in 2012, exemplifies a bond-financing model that could be used advantageously for project finance in the aftermath of Basel III. Led by the European Commission and the European Investment Bank (EIB), this initiative is aimed at helping the European infrastructure projects to access the capital market by creating favorable conditions to attract institutional investors in the private sec-

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64. WHITE & CASE, PROJECT BONDS: THEIR GROWING ROLE IN INFRASTRUCTURE FINANCE, 1, (2015), <http://www.whitecase.com/publications/insight/project-bonds-their-growing-role-global-infrastructure-finance>.

65. See Emanuele Rossi & Rok Stepic, INFRASTRUCTURE PROJECT FINANCE AND PROJECT BONDS IN EUROPE, 53, (2015).

66. WHITE & CASE, *supra* note 64, at 1.

67. *Id.* at 56.

tor.<sup>68</sup> Its roots lie in the European Union's 2020 objective to create a mechanism to help fund a \_2 trillion investment in the transport, energy and information and communication technology sectors. The EIB has set aside \_230 million to deploy in up to ten projects by the end of 2016.<sup>69</sup>

The PBI proposes to have EIB provide senior bond investors an additional safety net via injection of subordinated debt to lift the credit quality of the project bonds, through a process called Project Bond Credit Enhancement (PBCE). During the transaction, the PBCE assumes some of the risk of the given debt facility in one of two possible forms. It will either provide credit support during the construction phase (the unfunded model) or lend direct to projects on a subordinated basis (the funded model) with respect to the bondholders.<sup>70</sup> The unfunded PBCE model is a contingent credit line for an already fully financed project, used only in case of cost overrun during construction or if the income is insufficient to meet interest obligations. Under the funded PBCE model, EIB provides for a funded subordinated debt that gives priority to project bonds in the event of liquidation. The EIB selects and appraises the projects, structures the financial model, and monitors the projects thereafter.<sup>71</sup> The basic logic of the PBI is that infrastructure deals often fail for lack of funds due to government budget constraints, and that PBCE could combine governmental grants with project bonds in a tightening bank loan market to enable more projects to be financed.<sup>72</sup>

The pilot phase of PBI 2020 started in November 2012 and is planned to finish at the end of 2016. Nine infrastructure projects have been approved for refinancing through this facility. So far, five projects have been signed with the PBCE instrument and are currently in advanced stages. A number of positive findings can be drawn from these transactions. First, project bonds can match long-term liabilities with long-term assets and increase yields for the investor.<sup>73</sup> Second, the bonds issued at non-investment grade generally rise to investment grade with the support of the credit enhancement facility, drawing increased interest from investors.<sup>74</sup> Third, the PBCE instrument absorbs a big part of the construction risk.<sup>75</sup> Fourth, the PBI led to the increased use of various innovative features in project bond financing, such as deferred drawdown profile, forward purchase agreements, and tailored amortization plans.<sup>76</sup> More signifi-

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68. EUROPEAN INV. BANK, *The European 2020 Project Bond Initiative – Innovative Infrastructure Financing*, <http://www.eib.europa.eu/products/blending/project-bonds/index.htm>.

69. *Id.*

70. WATSON, FARLEY & WILLIAMS, *supra* note 41, at 4.

71. *Id.*

72. *Id.* at 67.

73. Rossi & Stepic, *supra* note 65, at 76.

74. *Id.*

75. *Id.*

76. *Id.*

cantly, the EIB reports that in 2013 bond financing accounted for 22 percent of all project debt financing in the EU-28 against a 4 percent average in the 2000-12 period.<sup>77</sup>

With these promising findings, it is quite likely that project sponsors will seek to increase the proportion of project debt offered in bond form, provided the bonds can achieve the required credit rating. However, there are a number of challenges. First, bondholders have to be persuaded to accept construction risk in the early phases of a project.<sup>78</sup> Given the success of the PBI model, where a credit facility absorbs some of the risk, this may not be an insurmountable problem. As long as sponsors have sufficient expertise and experience, the issue of construction risk can be mitigated to acceptable levels.<sup>79</sup> Second, bondholder voting is a cumbersome way of making key creditor decisions often required in project financings on issues such as waivers and changes in project documents. It is yet to be seen what market standard will emerge to address this issue. Perhaps a “bondholders’ agent” concept will evolve or some efficient form of bondholder voting system will be made possible.<sup>80</sup>

### B. *The Rise of Institutional Investors*

The last few years have seen a significant increase in institutional debt finance, such as non-bank institutions acting as lenders for project financing. Also known as shadow banking, institutional debt finance consists of a variety of participants, including pension funds, insurers, sovereign wealth funds, and export credit agencies, alongside finance companies, private investment funds, business development corporations, asset managers, hedge funds, and sponsored intermediaries such as money-market funds.<sup>81</sup> Because such institutions are not subject to the Basel accords, they do not face the same regulatory standards as the banks that have historically dominated the project finance market.<sup>82</sup>

The significant increase in the role of institutional investors is partly as a result of the sharp contraction in bank project finance after the Financial Crisis, and partly due to non-bank lenders’ search for low-risk, high-yield assets. Large life-insurance companies and pension funds are already

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77. *Id.* Even without the comfort of credit enhancement, project bonds are becoming appealing to investors. For example, an issue of an index-linked, privately placed bond of 41-year duration without credit enhancement was used to finance a student housing project for the University of Hertfordshire. See WHITE & CASE, *supra* note 64 at 7.

78. Michael Wilkins, *Out of the Shadows: The Rise of Alternative Financing in Infrastructure*, 5, STANDARD & POOR’S (Jan. 31, 2013), [http://www.standardandpoors.com/spf/upload/Ratings\\_EMEA/OutOfTheShadows-TheRiseOfAlternativeFinancingInInfrastructure.pdf?elq=00000000000000000000000000000000](http://www.standardandpoors.com/spf/upload/Ratings_EMEA/OutOfTheShadows-TheRiseOfAlternativeFinancingInInfrastructure.pdf?elq=00000000000000000000000000000000).

79. *Id.*

80. Rossi & Stepic, *supra* note 65, at 76. See also Morrison, *supra* note 12, at 101.

81. Wilkins, *supra* note 78, at 3.

82. New investors to the sector such as BlackRock have entered the marketplace, while experience participants such as MetLife, Allianz and Macquarie, have set ambitious fundraising targets in the future. See Wilkins, *supra* note 78, at 2.



making direct project finance loans to projects.<sup>83</sup> In 2013, up to \$25 billion of project finance debt may come from the shadow banking sector.<sup>84</sup> While potentially accounting for only about 12.5% of the total size of the project finance market, this is a source of project finance funding that emerged from almost nothing in the past several years.<sup>85</sup>

Pension fund funding usually involves longer maturities than funding raised from commercial banks, and, thus, is better suited to the nature of project finance debt. Traditionally, however, pension funds looked for higher return than the bank project finance market required. However, following the implementation of Basel III, pension funds may find themselves able to compete on pricing.<sup>86</sup> As the example in the Europe 2020 PBI has shown, if project bonds can achieve a sufficiently high rating, pension funds will be a major source of funding.

Typically, pension funds look for inflation-linked returns due to their risk-averse nature. If inflation linking can be introduced into a project's revenue stream, a financing or equity structure could be devised to ensure that the pension funds' return reflects such inflation linking.<sup>87</sup> Availability-based<sup>88</sup> private finance initiative schemes, for example, often combine stable fixed-rate and inflation-linked cash flows from government, relatively low credit risk, with high recovery rates in case of default.<sup>89</sup> These features seem to complement the long-term liability needs of insurance companies and pension funds.

Infrastructure debt funds may also help to target pension fund investment, due to the portfolio effect in relation to risk and enhancing stable returns. Such funds may prove to be a useful conduit for institutions to invest in project finance debt, while spreading the risk across a portfolio of assets.<sup>90</sup>

Although the institutional investors have proven to be an increasingly important source of finance for infrastructure projects worldwide, there are uncertainties and limitations impeding its growth.

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83. E. R. YESCOMBE, *PRINCIPLES OF PROJECT FINANCE*, Academic Press/Elsevier Science 485 (2nd Ed. 2014).

84. Wilkins, *supra* note 78, at 2.

85. *Id.*

86. WATSON, FARLEY & WILLIAMS, *supra* note 41, at 3.

87. *Id.*

88. "Availability"-based projects entitle a private entity to receive regular payments from a public sector client to the extent that the project asset is available for use in accordance with contractually agreed service levels. See NEW ZEALAND SOCIAL INFRASTRUCTURE FUND, *What are Public-Private Partnerships*, <http://www.nzsif.co.nz/Social-Infrastructure/What-are-Public-Private-Partnerships> (last visited Sept. 7, 2016).

89. Wilkins, *supra* note 78, at 4.

90. There is already some evidence of pension fund appetite for infrastructure returns in the form of the acquisition of a large minority stake in balance sheet-funded UK offshore wind projects. See WATSON, FARLEY & WILLIAMS, *supra* note 41, at 3.

A major obstacle preventing institutional investors from fully embracing the project finance market is the perceived heightened level of risk, compared to other asset classes such as high grade, highly rated sovereign bonds.<sup>91</sup> Institutional investors are wary of being caught in a repeat of the asset bubble witnessed prior to the Financial Crisis. Consequently, investors have shifted away from the private-equity approach, where fund managers would make equity investments on behalf of their clients, aiming to generate returns within a short timeframe.<sup>92</sup> Now, investors are increasingly focused on low risk, low volatility debt-type investments that generate a more predictable cash yield over a longer timeframe, are more liquid, and benefit from greater security post-default.<sup>93</sup>

Another obstacle comes from the investors' lack of expert teams to evaluate and monitor such projects.<sup>94</sup> For example, the offshore wind farms that are being constructed in Western Europe are large-scale, difficult projects that utilize new technology and have little proven track record of yield.<sup>95</sup> Current sources of bank funding are unlikely to be sufficient to fund these ambitious investments, providing excellent opportunities for institutional investors. However, the relative lack of transparency and lack of information associated with these investments led some industry observers to worry about the potential for the buildup of systemic risk.<sup>96</sup> If a critical mass of institutional investment can be reached, then reluctance to establish expert evaluation teams may be overcome, just like hedge funds and insurers entering the infrastructure debt market have done through external hiring.<sup>97</sup>

Yet another limit on possible demand from institutional investors is that there is no market in which loans to project companies can be traded.<sup>98</sup> Put differently, they are illiquid. Even though bonds are traded publicly, in practice the market for a particular bond issue may not be very liquid at the time the investor wishes to sell. This means that, as with equity investment, institutional lenders will only want to keep a very limited proportion of their assets (probably less than 5%) in project-finance loans.<sup>99</sup>

Moreover, sector-wise, institutional lenders tend to prefer the most typical projects, which leads them to favor lending to sectors with less risky projects. In addition, as interest rates rise following economic recov-

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91. Wilkins, *supra* note 78, at 4.

92. *Id.*

93. *Id.* at 4-5.

94. *Id.* at 5. *See also* WATSON, FARLEY & WILLIAMS, *supra* note 41, at 3; Rossi & Stepic, *supra* note 65, at 77.

95. *Id.*

96. Wilkins, *supra* note 78, at 3.

97. WATSON, FARLEY & WILLIAMS, *supra* note 41, at 3; *see also* McNamara & Metrick, *supra* note 32, at 8.

98. YESCOMBE, *supra* note 83, at 486.

99. *Id.*

ery, it is possible that institutional lenders will move away from the complexities of project finance to the relatively simplicity of other debt markets such as corporate bonds.<sup>100</sup>

Finally, all types of institutional investors traditionally have fewer staff with experience in assessing project finance risk than commercial banks and less access to the reliable information needed to evaluate the project creditworthiness.<sup>101</sup>

## VII. CONCLUSION

Basel III has certainly begun to change the ways in which project finance deals are structured. Because the new regulatory framework requires banks to hold significantly more liquid assets and reduce their reliance on short-term funding, their lending ability is adversely affected. Higher costs will lead to more selective loan portfolios, and will probably drive some players out of the project finance market entirely. Those who remain in the market will lend for shorter maturities and may concentrate on arranging loans intended for onward sale to the institutional market, such as pension funds or infrastructure debt funds.

At the same time, project bonds have emerged as a potential substitute for bank loans to finance long-term projects. Project bonds are not a new phenomenon, but their advantages over traditional bank loans became more salient after the Financial Crisis. With minimum refinancing risk, competitive pricing, and improved credit ratings thanks to the help of government support programs such as the European PBI, it can be foreseen that institutional investors will gradually increase their appetite for project bonds, making them a major instrument for funding long-term projects.

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100. *Id.*

101. BUSINESS STANDARD, *Moody's: Institutional Investment Key to Enhancing Project Finance*, (June 4, 2014), [http://www.business-standard.com/article/news-cm/moody-s-institutional-investment-key-to-enhancing-project-finance-114060401101\\_1.html](http://www.business-standard.com/article/news-cm/moody-s-institutional-investment-key-to-enhancing-project-finance-114060401101_1.html).