



September 11, 2015

Secretariat of the Basel Committee on Banking Supervision  
Bank for International Settlements  
CH-4002 Basel Switzerland

Re: Comments in Response to Consultative Document—*Interest Rate Risk in the Banking Book*

Ladies and Gentlemen:

The Clearing House Association L.L.C. (“**The Clearing House**”), the Securities Industry and Financial Markets Association (“**SIFMA**”) and the Financial Services Roundtable (“**FSR**” and, together with The Clearing House and SIFMA, the “**Associations**”)<sup>1</sup> appreciate the opportunity to comment on the Basel Committee on Banking Supervision’s (the “**Basel Committee**”) consultative document entitled *Interest Rate Risk in the Banking Book* (the “**Proposal**”).<sup>2</sup>

While the Associations support the Basel Committee’s principal underlying policy goal of ensuring “that banks have appropriate capital to cover potential losses from exposures to changes in interest rates,”<sup>3</sup> we are deeply concerned that the Pillar I approach to interest rate risk in the banking book (“**IRRBB**”) described in the Proposal would be counterproductive to that stated objective. A Pillar 1, one-size-fits-all framework would require banks to measure and ultimately manage interest rate risk based upon a methodology that would necessarily rely on overly simplistic and flawed uniform assumptions that would not and could not reflect the true empirical risk characteristics of banks’ varied business strategies, customer bases and product offerings and the concomitant mix of interest rate risk exposures. Simply put, the Proposal’s Pillar 1 approach would fail to properly capture the economic reality of IRRBB for most banks. Requiring banks to manage to and disclose the proposed approach’s flawed measurement of IRRBB would be confusing to investors, analysts and the broader financial markets and would ultimately likely hinder, rather than support, the proper management of risks on individual bank balance sheets.

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<sup>1</sup> Descriptions of the Associations are provided in Annex A of this letter.

<sup>2</sup> Basel Committee, Consultative Document: Interest Rate Risk in the Banking Book (June 2015), [available at http://www.bis.org/bcbs/publ/d319.htm](http://www.bis.org/bcbs/publ/d319.htm).

<sup>3</sup> Id. at 1.

Since the Basel Committee's introduction of a Pillar 2 framework for the measurement and management of IRRBB,<sup>4</sup> supervisory approaches to IRRBB have differed across jurisdictions. In the United States, for example, the Federal bank regulatory agencies (the "**U.S. Agencies**") have required banking institutions to maintain "effective corporate governance, policies and procedures, risk measuring and monitoring systems, stress testing, and internal controls related to [their interest rate risk] exposures,"<sup>5</sup> subject to extensive validation and review through the supervisory process. As implemented in the United States, the existing Pillar 2 framework has ensured that U.S. banks establish rigorous IRRBB risk management programs that are specifically tailored to the particular interest rate risk that they face given the products they offer and markets they serve. In accordance with their risk management programs and regulatory review, U.S. banks have been monitoring their exposure to IRRBB and making adjustments to their interest rate risk profiles and risk appetites, as appropriate, in recognition of the current exceptionally low interest rates.

The imposition of the proposed Pillar 1 approach would likely result in significantly less effective management of interest rate risk, especially for banks in jurisdictions that have implemented rigorous supervisory Pillar 2 frameworks with respect to the measurement and management of IRRBB. Banks subject to the proposed Pillar 1 approach would therefore be required to manage their IRRBB based both on an appropriately tailored internal/economic regime *and* a flawed, one-size-fits-all regulatory Pillar 1-based requirement. Banks therefore may be forced to adjust product offerings or pricing with a view to managing potentially conflicting standards—a Pillar 1 IRRBB capital surcharge, on the one hand, and their internal/economic risk management measures, on the other hand.

Accordingly, we urge the Basel Committee not to adopt the Proposal's Pillar 1 option, and instead to pursue an appropriately structured Pillar 2 framework. While we agree that some of the proposed enhancements to the existing Pillar 2 requirements may be useful to ensure sufficiently rigorous IRRBB management across jurisdictions, it is essential that any revisions to the existing Pillar 2 not import the calculation and disclosure framework from the proposed Pillar 1 approach given its significant and inherent flaws.

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<sup>4</sup> See Basel Committee, Principles for the Management and Supervision of Interest Rate Risk (July 2004), [available at](http://www.bis.org/publ/bcbs108.htm) <http://www.bis.org/publ/bcbs108.htm>.

<sup>5</sup> See Interagency Advisory on Interest Rate Risk Management (Jan. 6, 2010), [available at](http://www.federalreserve.gov/boarddocs/srletters/2010/sr1001.htm) <http://www.federalreserve.gov/boarddocs/srletters/2010/sr1001.htm>, at 1. See also Office of the Comptroller of the Currency, Risk Management of Financial Derivatives Supplemental Examination Procedures (Mar. 2014), [available at](http://www.occ.gov/news-issuances/bulletins/2014/bulletin-2014-8.html) <http://www.occ.gov/news-issuances/bulletins/2014/bulletin-2014-8.html>; Interagency Advisory on Interest Rate Management Frequently Asked Questions (Jan. 12, 2012), [available at](https://www.fdic.gov/news/news/financial/2012/fil12002.html) <https://www.fdic.gov/news/news/financial/2012/fil12002.html>; Office of the Comptroller of the Currency, Interest Rate Risk (June 1997, Mar. 1998), [available at](http://www.occ.gov/publications/publications-by-type/comptrollers-handbook/index-comptrollers-handbook.html) <http://www.occ.gov/publications/publications-by-type/comptrollers-handbook/index-comptrollers-handbook.html>; Board of Governors of the Federal Reserve System, Commercial Bank Examination Manual, section 4090, [available at](http://www.federalreserve.gov/boarddocs/supmanual/supervision_cbem.htm) [http://www.federalreserve.gov/boarddocs/supmanual/supervision\\_cbem.htm](http://www.federalreserve.gov/boarddocs/supmanual/supervision_cbem.htm); Board of Governors of the Federal Reserve System, Bank Holding Company Supervision Manual, section 2127, [available at](http://www.federalreserve.gov/boarddocs/supmanual/supervision_bhc.htm) [http://www.federalreserve.gov/boarddocs/supmanual/supervision\\_bhc.htm](http://www.federalreserve.gov/boarddocs/supmanual/supervision_bhc.htm); Board of Governors of the Federal Reserve System, Trading and Capital Markets Activities Manual, section 3010, [available at](http://www.federalreserve.gov/boarddocs/supmanual/supervision_trading.htm) [http://www.federalreserve.gov/boarddocs/supmanual/supervision\\_trading.htm](http://www.federalreserve.gov/boarddocs/supmanual/supervision_trading.htm).

Part I of this letter provides an executive summary of our comments; Part II discusses why the proposed Pillar 1 approach is a fundamentally flawed framework for measuring IRRBB; Part III describes why the Pillar 2 supervisory approach presented in the Proposal is a more suitable means of measuring IRRBB and identifies several critical shortcomings in the proposed incorporation of the Pillar 1 calculation into the Pillar 2 approach; and Part IV addresses the Basel Committee's concern with respect to the risk of regulatory arbitrage.

**I. Executive Summary**

**A. The Proposal's Pillar 1 approach is a fundamentally flawed measure of IRRBB that likely would undermine effective risk management.**

- Regulatory capital requirements should be based on risk of losses that lead to decreases in capital and not the potential for lower future earnings. As proposed, the Pillar 1 approach would assign capital charges not only to the risk of losses that lead to decreases in capital but also to potential fluctuations in future earnings—that is, the potential for earnings, although still positive, to not be as high as they otherwise could have been had conditions stayed the same. The adoption of this approach would constitute a fundamental and inappropriate departure from the general analytical basis of regulatory capital requirements, particularly for assets held in the banking book. The potential for relatively lower, but still positive, future earnings is better addressed through stress testing and banks' capital-planning and overall risk-management processes, as well as through supervisors' ongoing examinations of banks and assignments of exam ratings, for which earnings capacity is a key component.
- The Pillar 1 capital requirement dictated by the Proposal could be so significant that banks may not have the option to manage IRRBB according to banks' actual economic risk while also managing to the regulatory capital requirements. Instead, banks may be forced to manage to the Pillar 1 measurement of IRRBB, including through hedging and related strategies, in a manner that is at odds with banks' understanding of their actual interest rate risk. This would not only have the effect of distorting banks' risk management in a way that would serve to undermine the basic purpose of a risk-based capital framework, but may also increase overall risk to banks' balance sheets as revised hedging and other related strategies introduce *new* risks that are disconnected from economic reality.
- Differences in products offered across countries, markets and by individual banks prevent the development of meaningful uniform assumptions about interest rate sensitivity. The proposed Pillar 1 methodology would fail to take into account distinctions across product types that directly affect their interest rate sensitivity. For example, wholesale non-maturity deposits ("**NMDs**") would be treated in a uniform manner even though, in practice, there are important differences between transactional and non-transactional wholesale deposits, along with wide variability in their sensitivity to interest rates. Additionally, the proposed stability caps and pass-through floors for wholesale deposits and retail deposits are unrealistic. Similarly, prepayment options are subject to common assumptions in the proposed Pillar 1 approach despite the fact that

prepayment penalties vary widely across jurisdictions and are sensitive to factors other than interest rates.

- The proposed Pillar 1 framework would not take into account differences in banks' business models and strategies. For example, banks with the exact same interest rate risk profile but different credit risk profiles would have different results under the proposed Pillar 1 measure because a bank with a greater credit risk profile would experience a relatively lower change in economic value of equity ("EVE") as a percentage of its total capital than a bank with a lower credit risk profile.
- The proposed Pillar 1 framework's primary reliance on an EVE approach implicitly establishes zero duration of equity as the risk-neutral position, contrary to the "safe harbor" duration of equity approach used by many banks to balance between optimal duration of equity and earnings stability. This approach creates an incentive for banks to reduce their equity investment terms to mitigate the regulatory capital impact, which, in turn, could lead to increased earnings volatility and overall IRRBB over time.
- The proposed Pillar 1 framework would provide an inaccurate measure of IRRBB because it would require banks to assume a static balance sheet, contrary to realistic expectations.

**B. A properly structured Pillar 2 approach results in more precise and effective management and supervision of IRRBB.**

- A Pillar 2 approach allows banks to develop robust methodologies and systems for measuring, modeling and managing their specific IRRBB. These systems are tailored to reflect banks' customer bases, regulatory environments, product offerings and lending opportunities and are incorporated into banks' broader risk management reviews, including the Internal Capital Adequacy Assessment Process ("ICAAP"). These internal IRRBB management programs—in tandem with robust oversight by regulators who are knowledgeable regarding both IRRBB and banks' specific business profiles—constitute a more effective system for managing IRRBB.
- The calculation and disclosure of IRRBB based on the proposed Pillar 1 methodology should not be required under a Pillar 2 approach. Despite their evident limitations, analysts and other market participants inevitably will compare the outputs of the Pillar 1 approach among banks. A Pillar 1 calculation, even as part of a Pillar 2 supervisory approach, would therefore likely develop into the *de facto* required measure of IRRBB. The likelihood of this occurring is even greater in light of the presumption that banks identified as "outliers" based on the Pillar 1 measure of IRRBB may be subject to supervisory action, including "capital consequences." This scenario could lead banks to manage IRRBB to the less accurate Pillar 1 calculation rather than according to economic reality reflected in banks' internal measures.
- The incorporation into Pillar 2 of the six interest rate shock scenarios that are based on common time horizons and confidence levels could provide a useful approach to ensuring rigorous supervisory oversight of IRRBB calculated using banks' internal

models. If shock scenarios are included in Pillar 2, the scenarios should be tailored by national supervisors to account for variations in products, customer bases and economic environments across jurisdictions.

**II. The proposed Pillar 1 approach to IRRBB is fundamentally flawed and would be counterproductive to the principal underlying policy rationale of the Proposal.**

We agree with the Basel Committee's previous determination that "management and measurement of interest rate risk [is] not amenable to an internationally harmoni[z]ed Pillar 1 capital framework" and the Basel Committee's prior focus on "how banks should manage and regulators supervise IRRBB within the remit of a Pillar 2 framework."<sup>6</sup> Indeed, the "complexit[y] of implementing a standardi[z]ed model across heterogeneous markets and banks, and across a diverse range of products" has influenced the Basel Committee to retain a Pillar 2 option, as noted in the Proposal.<sup>7</sup> We believe that the Basel Committee's original conclusion continues to be correct as evidenced by the fact that the Proposal's Pillar 1 approach does not properly align with actual risk and economic reality.<sup>8</sup> Moreover, we do not believe the circumstances since this original determination, including the present existence of a low interest rate environment in several jurisdictions around the world, have so changed this calculus so as to justify a different conclusion.

Even within the banking sector of a single jurisdiction, such as the United States, the diversity of business strategies, customer bases and product offerings makes the development of a workable uniform Pillar 1 capital framework very difficult to implement. For example, the U.S. Office of Thrift Supervision at one time imposed standardized IRRBB metrics and reporting requirements on so-called thrift institutions,<sup>9</sup> which are mostly smaller banking organizations with relatively simple balance sheets and business models focused on retail deposits and real estate-related lending. These standardized metrics were subsequently abandoned in favor of an institution-specific approach because the standardized approach was viewed as too complex as compared to the benefits it offered in light of experience obtained in its practical application.<sup>10</sup> The U.S. Agencies' current supervisory approach requires all banks to manage IRRBB exposures using "processes and systems commensurate with their earnings and capital levels, complexity, business model, risk profile, and scope of operations" to ensure

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<sup>6</sup> Proposal at 9.

<sup>7</sup> Id. at 4.

<sup>8</sup> Indeed, the Basel Committee itself readily acknowledges that the proposed Pillar 1 approach contains a number of areas of simplification, uncertainty and perhaps unintended consequences. See, e.g., Proposal at 2 ("The [P]roposal recogni[z]es that not all banking book positions are easily amenable to standardi[z]ation, given uncertainty about the timing of cash flows due to behavio[.]ral aspects and embedded options (e[.]g[.], non-maturity deposits, loan prepayment."); Proposal at 9 ("An agreed Pillar 1 approach to measuring IRRBB could . . . promote greater comparability . . . though at the expense of less precision when compared to internal model estimates.")

<sup>9</sup> Office of Thrift Supervision, Thrift Bulletin 13a, Management of Interest Rate Risk, Investment Securities and Derivatives Activities (Dec. 1, 1998) (rescinded Mar. 31, 2012).

<sup>10</sup> See FAQs on 2010 Interagency Advisory on Interest Rate Management (Jan. 12, 2012), available at <http://www.occ.gov/news-issuances/bulletins/2012/bulletin-2012-5.html>.

sound management of IRRBB.<sup>11</sup> We are deeply concerned that the Proposal's Pillar 1 approach does not adequately overcome the serious difficulties in developing any uniform framework for measuring IRRBB, and indeed may exacerbate the complex problem of IRRBB management for banks through the introduction of an inaccurate and perhaps damaging measure. The discussion below highlights various elements of the proposed Pillar 1 approach that are analytically and practically unsound, which would lead to mistaken calculations of true interest rate risk.

**A. The basis on which the Proposal would impose a capital surcharge is conceptually flawed.**

It is undoubtedly true—as an economic matter—that *risk* posed by changes in prevailing interest rates for positions held in the banking book is composed of both the risk of losses that lead to decreases in capital *and* the potential for lower future earnings. Indeed, banks (and supervisors properly expect banks to)<sup>12</sup> include both of these elements as part of their overall interest rate risk management frameworks. However, assigning a minimum capital charge on the basis of fluctuations in potential earnings (that is, the interest rate margin profit compared to the projected interest rate environment), as proposed, is inappropriate as a conceptual matter because it would impose a capital charge on the loss of the *opportunity* for higher earnings, even when the underlying earnings stream remains positive.

Earnings variability is accounted for in a fundamentally different way in the banking book than it is in the trading book, where a capital charge has analytical merit. In banks' trading books, positions generally are accounted for on a mark-to-market basis. This means that the economic value of each position has already been recognized and therefore is reflected in banks' capital positions. In the banking book, by contrast, banks do not immediately recognize—and may not always recognize—gains and losses from fluctuations in interest rates.

Capital requirements generally are intended to protect against future losses that lead to decreases in capital, not opportunity costs.<sup>13</sup> The Proposal effectively would treat the opportunity cost from a potential for lower future earnings from interest rate risk as equivalent to risk of losses that lead to decreases in capital, even if net interest income (“NII”) earnings are still positive. The Proposal thus would require the allocation of capital to protect against variability risk rather than the risk of losses that lead to decreases in capital. The result would be a regulatory capital charge being imposed on a completely different basis than under all other existing regulatory capital frameworks. In other words, the Pillar 1 approach would require banks to hold regulatory capital not just against the possibility of

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<sup>11</sup> See Interagency Advisory on Interest Rate Risk Management (Jan. 6, 2010), available at <http://www.federalreserve.gov/boarddocs/srletters/2010/sr1001.htm>, at 1.

<sup>12</sup> See Interagency Advisory on Interest Rate Management Frequently Asked Questions (Jan. 12, 2012), available at <https://www.fdic.gov/news/news/financial/2012/fil12002.html>, at 3 (“Institutions should measure the potential impact of changes in market interest rates on both earnings and the economic value of capital.”).

<sup>13</sup> Banks can compare the NII they expect their banking-book portfolios to generate over a given period against the NII they would have earned during that same period assuming the same banking-book portfolios had included different interest rate-sensitive positions. This difference in projected NII represents not an actual loss but rather an opportunity cost.

future losses—the premise behind the Basel Committee’s risk-based capital regime—but against the risk that earnings may not be as high as they could have been had market conditions been different. We are very concerned that this type of capital charge would represent a fundamental change to the regulatory capital framework without any significant corresponding benefit.

Variability in earnings has implications for, and certainly should be considered part of, banks’ overall risk management and capital planning processes because it has an impact on the rate at which banks accrue and maintain or distribute capital. However, tying minimum capital requirements to variability rather than the risk of losses that lead to decreases in capital could cause banks to hedge interest rate risk to reduce the capital charges rather than hedging the true economic risk, which could in practice increase banks’ interest rate risk from a true economic perspective.

In addition to banks’ consideration of variability in earnings under the current Pillar 2 framework, stress testing processes evaluate the adequacy of capital buffers in light of the variability risk over a particular time horizon. For example, this variability is specifically taken into account as part of the U.S. Comprehensive Capital Analysis and Review (“**CCAR**”) process and the company-run Dodd-Frank Act stress testing processes. Taking into account variability among banks’ business strategies, customer bases and product offerings through these complementary Pillar 2 regulatory requirements—rather than as part of a one-size-fits-all Pillar 1 capital charge—avoids imposing an inappropriate capital requirement while still ensuring that this varied mix of interest rate risk exposures are properly addressed.

The Proposal’s Pillar 1 framework would likely change the way banks that have developed sophisticated internal IRRBB measurement methodologies actually manage risk. Under the proposed Pillar 1 approach, banks would be required to navigate between the minimum regulatory capital requirement imposed under the Pillar 1 approach and actual economic risk as reflected in banks’ IRRBB models. The Pillar 1 capital requirement dictated by the Proposal would be so significant, however, that banks may not have the option to manage IRRBB according to banks’ actual economic risk while also managing to the regulatory capital requirements. Instead, banks may be forced to manage to the Pillar 1 measurement of IRRBB, including through hedging and related strategies, rather than in accordance with banks’ understanding of their actual interest rate risk. This would not only have the effect of distorting banks’ risk management in a way that would serve to undermine the basic purpose of the Proposal, but could also result in increased overall risk to banks’ balance sheets as these hedging and other related strategies introduce *new* risks that are disconnected from economic exposure measures.

**B. Differences in product offerings across countries, markets and individual banks practically prevent the development of meaningful uniform assumptions about interest rate sensitivity.**

The range of NMDs and products with interest rate-sensitive optionality across countries, markets and banks provides an ample illustration of why the proposed Pillar 1 approach is not an appropriate method for managing IRRBB. Banks that are subject to a comprehensive Pillar 2 framework or otherwise have developed rigorous interest rate risk management systems with empirical models to estimate the balance and rate behavior of NMDs and other products with interest rate-sensitive optionality for interest rate risk measurements. These models generally are calibrated using banks’ internal historical data and reflect characteristics specific to the products offered by the bank,

behavioral characteristics of their customers, pricing strategies, competitive factors in their region(s) of operations, the interest rate environment and lending opportunities, and are independently validated and monitored. In addition, U.S. supervisors review closely these models in both the interest rate risk measurement and CCAR contexts.

### **1. Treatment of NMDs**

Assumptions regarding NMD decay rates must reflect the wide variety of banks' business profiles and activities, which cannot be meaningfully achieved in a uniform framework. This is consistent with regulatory requirements in the United States at least, where U.S. Agencies specifically discourage banks from relying on industry estimates or vendor assumptions regarding NMDs because decay rates are inherently bank-specific, including as to customer types and customer behaviors that can vary across geographic areas and lead to very different deposit decay rates across various banks.<sup>14</sup> In addition, the Proposal's introduction of floors and caps into the treatment of NMDs is overly restrictive and would not allow for a realistic assessment of the interest rate sensitivity of deposits. Annex B provides illustrations of the potential impact on duration of equity for a hypothetical bank based on the treatment of retail and wholesale deposits under the time-series approach ("TIA") in the Proposal. As reflected in Annex B, because the amount of NMDs that are recognized as "core" under the Proposal is so limited, even for a hypothetical bank with only retail deposits, the bank's duration of equity would increase significantly, forcing banks further from the implicit zero duration of equity in the Proposal, as discussed in Part II.C.2. As reflected in the illustration of a bank with half wholesale and half retail deposits, the bank's duration of equity would increase 10.4, which means that for each 100 basis point change in interest rates, the bank would lose 10.4% of EVE.

The Proposal's approach to measuring interest rate sensitivity of NMDs raises the following additional concerns.

#### **a. The proposed caps and floors would result in unrealistic limits on core deposits.**

The stability caps, pass-through floors, and weighted average life ("WAL") cap parameters imposed on NMDs in the Proposal are unrealistic. A prime example is the application of a 25% pass-through floor to all retail transactional accounts under the TIA. In the United States, demand deposit accounts that would be considered retail transactional accounts are often non-interest bearing. Under the TIA, however, they nevertheless would be subject to a pass-through floor of 25%, despite the fact that the actual pass-through rate and the rate itself for these accounts is effectively zero. In addition, the Proposal would cap the effective WAL of deposits at 2.4 years for transactional (3 years x 80%) and 2.1 years for retail non-transactional (3 years x 70%) deposits, which compares unfavorably to an effective WAL of deposits in the United States that is meaningfully longer. We expect that the caps imposed on stability and WAL and pass-through floors taken together would result in a misestimate of the duration of equity of over five years in the United States.

#### **b. Inappropriate uniform treatment of all wholesale deposits**

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<sup>14</sup> See Interagency Advisory on Interest Rate Management Frequently Asked Questions (Jan. 12, 2012), available at <https://www.fdic.gov/news/news/financial/2012/fil12002.html>, at 8.

The proposed NMD categories distinguish between transactional and non-transactional retail deposits, and different stability caps and pass-through floors would apply to the deposits depending on how they are categorized. No similar distinction is drawn between transactional and non-transactional wholesale deposits, however, despite the fact that transactional wholesale deposits share many of the same characteristics as transactional retail deposits. Indeed, like retail deposits, wholesale deposits have a stable, transactional component. This is explicitly recognized by the Basel Committee in the Liquidity Coverage Ratio (“LCR”) framework, where a distinction is drawn between operational deposits and wholesale deposits generally, with operational deposits assigned a preferential outflow rate of 25% for purposes of the LCR due to the inherent stability of deposit balances linked to “clearing, custody and cash management” activities.<sup>15</sup> Like transactional retail deposits, operational deposits are broadly insensitive to changes in interest rates and are subject to numerous qualification requirements, such as the lack of any economic incentive to maintain excess balances, which ensures their long-term stability.

As a result, the proposed stability caps and pass-through floors for wholesale deposits would be overly constraining for wholesale transactional deposits. For example, the Proposal’s imposition of an effective 33% limit on the percentage of wholesale deposits that can be considered “core” is overly conservative and substantially inconsistent with industry experience. This is especially the case in light of the expected normalization of the interest rate environment, as excess deposits begin to leave the banking system. The percentage of wholesale deposits that qualify as “core” differs widely across banks and may even change significantly within a single bank based on changes in interest rate profiles. The imposition of the 33% limit would detract from banks’ ability to adjust their IRRBB methodologies to reflect these changes over time.

## **2. Interest rate-sensitive optionalities**

The Proposal’s Pillar 1 prepayment assumptions fail to take into account the fact that prepayment rates are affected by a number of behavioral factors unrelated to interest rates, including tax considerations and personal circumstances like death and divorce. Because these prepayment assumptions are based only on the interest rate differential, the Proposal would not account for—and would generally overestimate—the exercise of prepayment options that are less interest rate risk sensitive. Banks rely on historical data to develop prepayment assumptions and therefore are able to capture other factors that influence prepayment risk in addition to interest rate-dependent prepayment options. The result is a more accurate measure of interest rate risk which allows for more effective management of that risk.

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<sup>15</sup> See Basel Committee, Liquidity Coverage Ratio: Liquidity Risk Measurement Standards (Sept. 3, 2014).

**C. IRRBB cannot be measured accurately using a uniform Pillar 1 calculation methodology.**

**1. The Pillar 1 approach would not adequately account for differences in banks' business strategies.**

As the Proposal recognizes, the best measure of IRRBB relies, at least in part, on banks' respective business models.<sup>16</sup> Accordingly, a Pillar 1 approach by its very nature would not provide more than a low probability of being an accurate measure of banks' IRRBB because it cannot accommodate the significant differences that exist among banks' various business strategies. For example, banks, in practice, may use economic value and/or earnings measures to quantify their interest rate risk. The proposed Pillar 1 approach, however, would rely either exclusively on an economic value methodology or on an economic value methodology with an earnings-based overlay. Given the range of banks' business strategies, the use of an economic value methodology as the primary methodology is highly unlikely to yield an accurate result across all banks.

Beyond the fundamental issue of which measurement methodology a uniform approach should rely on, the design of a particular methodology also raises issues because the impact of measurement methodologies will vary widely across banks depending on their mix of business and other factors. As illustrated in Annex C, applying a Pillar 1 approach uniformly without regard to banks' differing business strategies could result in two banks with the same interest rate risk and capital profile having different measures of changes in EVE as a percentage of total capital depending on their relative credit risk positions. While a 200 basis-point interest rate shock scenario may cause the same decrease in EVE at each institution, the bank with higher credit risk will be holding, as a result of existing capital requirements, greater Tier 1 and Tier 2 capital to account for its higher level of risk weighted assets and thus would have a relatively lower change in EVE as a percentage of total capital.

The same issue arises under the NII measurement as two banks with the same interest rate risk profiles could have different NII risk ratios depending on their relative credit risk positions, as illustrated in Annex D. A bank with higher credit risk may have a lower NII risk ratio under a 200 basis-point interest rate shock scenario than a bank with a lower credit risk profile because the ratio of the change in NII as a percentage of total NII as a result of the shock would be lower for the bank with higher credit risk (and thus higher total NII).

These simple examples demonstrate that the Proposal's Pillar 1 EVE and NII risk ratios would not accurately measure banks' IRRBB profiles because the results differ based on circumstances wholly unrelated to interest rate risk.

**2. The implicit establishment of a risk-neutral position at zero duration of equity would create incentives that are contrary to proper interest rate risk management.**

By using an EVE framework, the Proposal implicitly creates a risk-neutral position at zero duration of equity. However, to facilitate effective risk management and balance the trade-off between

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<sup>16</sup> See Proposal at 5.

optimal duration of equity and optimal earnings stability, which cannot be simultaneously hedged,<sup>17</sup> banks generally position their rate risk profile with a two- to five-year safe harbor duration of equity to balance EVE and NII. Implicitly setting the risk-neutral position at zero duration of equity—as the Proposal’s Pillar 1 calculation methodology does—creates tension with banks’ actual investment duration of equity and would encourage banks to shorten their investment horizons in order to manage these regulatory capital charges. This, in turn, would result in significant earnings volatility. This approach implies, at the logical extreme, that a “neutral” interest rate risk profile would correspond to investing net cash flows (net of assets and liabilities) in overnight assets. With net cash flows invested in overnight assets, earnings on these assets will vary day-to-day by the same magnitude as any variations in interest rates. If these assets were invested in longer-term products, the earnings (determined at a maturity date further into the future) would not reflect overnight variations and therefore likely would be more stable over time. Supervisors are attentive to banks’ earnings volatility because it impacts the way banks maintain and distribute capital. Permitting banks to target a duration of equity in accordance with risk appetite with duration appropriately embedded in the risk management framework is a better approach to effective management of earnings volatility and overall IRRBB.

**3. The proposed Pillar 1 approach would provide an inaccurate measure of IRRBB because it does not incorporate dynamic balance sheet modeling.**

The Proposal’s earnings-based measure is flawed because it assumes a static balance sheet (based on run-off scenarios) rather than a dynamic balance sheet that incorporates reasonable assumptions regarding changes in the balance sheet, such as the reinvestment of assets at maturity. In reality, banks’ balance sheets constantly change as assets mature, liabilities run off and new assets and liabilities are created. Accordingly, the U.S. Agencies expect banks to take into account expected changes to the balance sheet in their IRRBB methodologies.<sup>18</sup> A static balance sheet assumption would fail to capture certain IRRBB risk because it would not capture the true nature of a bank’s balance sheet, including activity underlying balance sheet fluctuations.

**4. The Proposal’s limits on cross-currency netting are inconsistent with and less precise than current market practices.**

The Proposal’s currency aggregation requirements do not take into account banks’ practices for effectively hedging currency-specific risk. For example, banks with assets and liabilities denominated in multiple currencies have developed currency aggregation techniques that capture correlations between certain currencies, including cross-currency netting. By imposing limits on cross-currency netting, the Proposal fails to recognize the effectiveness of this hedging approach and therefore would not properly measure IRRBB.

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<sup>17</sup> See id. at 2.

<sup>18</sup> See Interagency Advisory on Interest Rate Management Frequently Asked Questions (Jan. 12, 2012), available at <https://www.fdic.gov/news/news/financial/2012/fil12002.html>, at 6. The Agencies have also encouraged banks to use earnings simulations, which, in order to be meaningful, must rely on reasonable assumptions regarding banks’ balance sheets in the future. See id. at 4.

We believe that the concerns driving the Basel Committee's original rejection of a Pillar 1 approach to IRRBB still remain and would not be resolved by the Proposal. In sum, each of the foregoing flaws demonstrates the inherent difficulties in pursuing a one-size-fits-all approach to IRRBB, including as set forth in the Proposal's Pillar 1 approach. As a practical matter, the Proposal would impose a mandatory capital charge that does not accurately measure IRRBB, while also improperly imposing a capital charge for lost earnings opportunities. As such, the Proposal's Pillar 1 approach fails to effectively ensure that banks will hold "*appropriate* capital to cover potential *losses* from exposures to changes in interest rates."<sup>19</sup>

**III. A properly structured Pillar 2 approach results in more appropriately tailored supervision of banks' IRRBB.**

The supervisory approach to IRRBB can be effective in ensuring banks properly measure and manage risk in this area. Banks' ability to measure and manage risk—including IRRBB—is in fact enhanced through the development and constant refinement of methodologies that are calibrated using empirical data and characteristics specific to the banks' customer bases, regulatory environments, product offerings and lending opportunities. In addition, pursuant to ICAAP's regulatory requirements, banks must adopt processes for identifying, measuring, monitoring and reporting risk, establish policies, procedures, limits and controls and apply a strong internal control framework across the risk and capital management processes. For ICAAP purposes, banks' boards of directors must maintain proper oversight by approving risk appetite statements and by monitoring and measuring risk-taking activities against the approved risk appetite. In the United States, the ICAAP requirements are reinforced by the regulations implementing the enhanced prudential supervision requirements of the Dodd-Frank Act, which contain comprehensive guidance regarding large banks' risk management frameworks, including requirements for banks to maintain risk committees with oversight over the banks' risk management policies, procedures and systems and banks' compliance with risk limit structures, policies and procedures.<sup>20</sup>

Banking regulators, including the U.S. Agencies, evaluate the adequacy and effectiveness of banks' IRRBB management programs and the level of banks' interest rate exposures in their review of banks' capital adequacy. Banks with inadequate management systems or high levels of IRRBB exposure relative to capital may be directed to raise additional capital, strengthen management expertise, improve measurement and management-information systems, reduce levels of exposure, or some combination thereof, depending on the facts and circumstances specific to that institution. Examiners overseeing these processes generally are very knowledgeable about the banks they supervise and thus are able to take into account the relative size, customer base, product offerings and regulatory and market dynamics in making such determinations.

Thus, we believe that the supervisory Pillar 2 approach is effective and produces results that are substantially more congruent with economic reality and should not be discarded in favor of the Proposal's flawed, one-size-fits-all Pillar 1 calculation. Nevertheless, we have concerns regarding certain of the proposed modifications to the Pillar 2 framework outlined in the Proposal, which we discuss

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<sup>19</sup> Proposal at 1 (emphasis added).

<sup>20</sup> See 12 C.F.R. §§ 252.22, 252.33.

below. In particular, we believe that any final Pillar 2 framework should not include any Pillar 1 calculation and disclosure framework other than as a discretionary tool for supervisors.

**A. The Proposal’s incorporation of the Pillar 1 methodology within Pillar 2 undermines the very benefits of a Pillar 2 approach.**

**1. The disclosure of banks’ IRRBB under both the Pillar 1 approach and banks’ Pillar 2 internal methodologies inevitably would cause banks to manage IRRBB relative to the flawed Pillar 1 approach and would likely cause market confusion.**

Principle 8 of the Proposal would require the public disclosure of the level of IRRBB risk measured under both banks’ internal methodologies *and* the Pillar 1 approach.<sup>21</sup> Even without a Pillar 1 requirement, however, disclosure of a Pillar 1-based calculation of IRRBB as part of a Pillar 2 approach would similarly be detrimental to banks’ IRRBB management. In that scenario, it is likely that the Pillar 1 measure would become the more closely followed measure by investors, analysts and the markets generally not because it is a better measure of IRRBB, but rather because of the simplicity it appears to present and its superficial definitiveness. Banks therefore would be left in the unenviable position of having to navigate between market expectations arising out of flawed Pillar 1-based IRRBB calculations and their own more prudent and tailored economic risk methodologies. This dilemma would only be intensified by supervisors’ potential use of a Pillar 1-based outlier test and the availability of a “strong presumption of capital consequences”<sup>22</sup> if banks have large IRRBB risk profiles relative to their capital or earnings (as discussed in Part III.A.2, below). As such, the Pillar 1-based calculation would tend to become a primary—if not the primary—IRRBB management tool due to external expectations. Forcing banks to calculate and publish the Pillar 1 measure of IRRBB would therefore result in less reliable interest rate risk management as a practical matter—despite the fact that the Pillar 2 approach is supposed to retain the more flexible, supervisory-driven characteristics of the interest rate management regime currently in place.<sup>23</sup> At the very least, in the aggregate the disclosure of the results of different and quite possibly competing methodologies, each with inherent complexities, would cause confusion rather than provide clear and manageable information to shareholders, analysts and other market participants.

In light of the foregoing, we urge the Basel Committee not to incorporate the Pillar 1-based calculation and disclosure framework within the Pillar 2 supervisory approach, other than as a discretionary tool for national regulators. We recognize that in some jurisdictions there may be particular circumstances, such as lack of sufficient resources, which would counsel the use of the Pillar 1 measurement and reporting framework as part of the Pillar 2 supervisory approach as a fall-back alternative. However, we do not believe it is appropriate to impose this requirement on jurisdictions where the supervisors have the proven capabilities and resources to impose and police more accurate and tailored bank-specific methodologies.

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<sup>21</sup> Proposal at 36.

<sup>22</sup> *Id.* at 36.

<sup>23</sup> *See id.* at 37.

**2. Reliance on the Pillar 1 framework for the outlier test may lead to a *de facto* minimum capital requirement.**

Principle 10 of the Proposal requires supervisors to use the outcome of the Pillar 1 approach as part of its process to “identify potential outlier banks for more intensive supervision and for capital consequences.”<sup>24</sup> The Pillar 1 framework would thus be treated as a “common metric for supervisors to compare and assess banks’ internal measures.”<sup>25</sup> If banks are determined to be “outliers” on the basis of the Pillar 1 approach, they would have a significant incentive to manage IRRBB under the Pillar 1 framework notwithstanding the significant flaws in that approach discussed above. This would be even more the case if there is a “strong presumption” of capital consequences for being an “outlier,” because the Pillar 1 measure effectively would become a basis for determining the size of banks’ capital buffers for IRRBB purposes. As a result, even without a Pillar 1-based minimum regulatory capital requirement, banks nonetheless could be forced into making decisions regarding product offerings and pricing on the basis of an inaccurate measure of interest rate risk.

As discussed in Part II.B, banks offer different products, operate in different markets, and have different global footprints, and these differences lead to unique interest rate risk profiles and interest rate risk management approaches. The simple scenarios described in Part II.C.1 illustrate that Pillar 1 measurements of NII and EVE do not necessarily reflect banks’ relative IRRBB profiles. Supervisory discretion, therefore, is essential for the implementation of a test for determining which banks’ IRRBB management programs are deficient. Accordingly, we believe it is important that banks that qualify as “outliers” not necessarily be subject to “capital consequences.” Instead, any final Pillar 2 framework should make clear that national regulators have discretion to determine not only which banks constitute “outliers” in respect of IRRBB and how that determination is made, but also whether to impose measures other than capital consequences, such as requiring banks to strengthen management expertise, improve measurement and management-information systems or reduce levels of exposure. Supervisory determinations should be made on a case-by-case basis and only after dialogue with the relevant bank.

**3. Interest rate shock scenarios, appropriately tailored by national supervisors, could provide a useful mechanism for ensuring rigorous IRRBB management across jurisdictions.**

Interest rate shock scenarios in a supervisory Pillar 2 framework may help support rigorous IRRBB management if properly structured. Under the Pillar 2 framework, the Basel Committee could define level-setting principles underlying the shock scenarios, such as the time horizon and confidence level, with the design of specific components of the shock scenarios themselves left to national supervisors to take into account the significant differences in interest rate levels, volatilities and market characteristics affecting IRRBB across jurisdictions. Under this approach, banks that perform IRRBB calculations in multiple currencies<sup>26</sup> would use the scenarios designed by the supervisors in the

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<sup>24</sup> Id. at 53.

<sup>25</sup> Id.

<sup>26</sup> Under the Proposal, banks must calculate IRRBB for each currency to which they have “material exposures (i.e.), those accounting for more than [5]% of either banking book assets or liabilities.” Proposal at 34.

applicable foreign jurisdiction for each currency.<sup>27</sup> Banks would calculate the impact of the regulatory shock scenarios using internal methodologies. Consistent with our support for a true Pillar 2 approach for measuring IRRBB, we believe that this framework could provide a useful measure of banks' relative IRRBB risk and allow national supervisors to make meaningful comparisons regarding banks' IRRBB management. To ensure that the information produced is most useful to national supervisors, banks would determine whether to report IRRBB sensitivity under either an EVE or NII metric, based on their portfolio characteristics and on which metric the banks are using internally.

If shock scenarios were included within the Pillar 2 approach, the approach also could include standard scenarios that could be used at the option of national supervisors in the event that national supervisors determine not to allocate resources to develop tailored interest rate shock scenarios. Furthermore, if ultimately retained, the common scenarios could be treated as the default outlier test, again subject to tailoring at the national level in those jurisdictions that elect not to use standard scenarios.

Because the measurement of IRRBB is extremely complex, the results of any stress scenarios that may be included in a Pillar 2 framework should be reported to national supervisors rather than publicly disclosed. Bank supervisors, who have developed significant expertise with respect to complex IRRBB matters and have familiarity with the banks they supervise, are best positioned to interpret the results of stress testing scenarios.

Banks already are, or will be, subject to appropriately designed disclosure requirements with respect to IRRBB. Under the Basel Committee's recently adopted Pillar 3 disclosure standards, large banks will be required to make significant disclosures regarding their IRRBB management, including general qualitative disclosures of key assumptions regarding loan prepayments and NMDs and quantitative disclosures regarding the change in EVE or NII (as selected by the banks) for rate shocks according to banks' internal modeling.<sup>28</sup>

Providing the results of additional, more complex shock scenarios could likely mislead and lead to confusion rather than impose useful market discipline. To make disclosure meaningful, banks would need to disclose significantly more information regarding assumptions than they would need to under Pillar 3 disclosure requirements or under applicable law. For example, under the U.S. rules implementing the Pillar 3 requirements and under U.S. securities laws, banks must disclose their interest rate risk management systems, including assumptions regarding loan prepayments and behavior of NMDs, the impacts (in terms of NII or EVE) of interest rate shock scenarios and a description of the stress tests applied to the positions subject to interest rate risk.<sup>29</sup> The additional proposed disclosure, however, would need to include disclosure of assumptions that are confidential and proprietary and underlie decisions that banks make, including product pricing, in order to be

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<sup>27</sup> For example, a U.S. domiciled bank that has a material yen exposure would use the appropriate U.S. regulator scenarios for its U.S. dollar exposure and the Japanese regulator scenarios for its yen exposure.

<sup>28</sup> See Basel Committee, Revised Pillar 3 Disclosure Requirements (Jan. 2015), [available at](http://www.bis.org/bcbs/publ/d309.pdf) <http://www.bis.org/bcbs/publ/d309.pdf>. These more general and tailored disclosures, based on internal models, will be more meaningful and helpful to investors than the Proposal's hybrid disclosure model.

<sup>29</sup> 12 C.F.R. §§ 217.173 (Table 12) and 217.212(c)-(d), 17 C.F.R. § 229.305(b).

meaningful. As a result, not only would the disclosures potentially be harmful to the banks themselves, the information could have anti-competitive effects more broadly.

**B. Banks should be able to manage IRRBB as part of their broader risk management control frameworks.**

Under the existing Pillar 2 approach, banks must “translate the level of interest rate risk they undertake . . . into their overall evaluation of capital adequacy . . . .”<sup>30</sup> In line with this standard, banks consider IRRBB alongside a number of other risks as part of their capital planning processes. We continue to believe that this approach represents a comprehensive and holistic approach to managing capital adequacy. To the extent that Principle 9 would require allocation of capital on a standalone basis, we recommend that the current standard be maintained to avoid forcing banks to allocate capital to specific risks in a piecemeal fashion.

**C. Credit spread risk should not be included as a component of IRRBB in the final framework.**

As proposed, Pillar 2 would require banks to integrate into their IRRBB models their credit spread risk in the banking book (“**CSRBB**”). In the Proposal, CSRBB is defined broadly as “any kind of asset spread risk of credit risky instruments that is not explained by general [IRRBB] or by the expected credit/jump to default risk.”<sup>31</sup> Without further explanation of the scope and coverage of CSRBB under the Proposal, it is not possible to provide useful comment on this topic. Because how CSRBB is defined and measured may vary widely across banks, to the extent CSRBB continues to be considered part of IRRBB, the final framework should clarify that banks should define and measure CSRBB based on their individual profiles, subject to supervisory review.

**D. Banks should not be required to provide advance notice of changes to modeling systems or methodologies.**

The disclosure requirements embedded in Principle 8 would require banks to notify regulators in advance of any significant changes proposed for “internal limit structures relating to IRRBB . . . [,] internal model[ing] systems or methodologies for quantifying IRRBB [,] and/or . . . strategic/behavioral assumptions relating to the treatment of optionalities.”<sup>32</sup> The requirement to provide *advance* notice to regulators of changes to internal models may limit banks’ ability to adjust their IRRBB models in real-time to reflect changes in their IRRBB profiles. In order to be relevant, assumptions need to be made with the best information available as of the date of the calculation, and an advance notice requirement will inherently create a lag in the IRRBB calculation. We are supportive of a transparent supervisory process where changes to significant assumptions or methodologies are disclosed to and discussed with supervisors; however, requiring approval in advance of such changes is not justified.

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<sup>30</sup> Basel Committee, Principles for the Management and Supervision of Interest Rate Risk (July 2004), available at <http://www.bis.org/publ/bcbs108.htm>, at 22.

<sup>31</sup> Proposal at 39.

<sup>32</sup> Id. at 49.

**IV. The Proposal overstates the risk of regulatory arbitrage and ignores other more effective measures for addressing such concerns.**

The secondary objective behind the Proposal appears to be “limit[ing] incentives for capital arbitrage”<sup>33</sup> between the banking book and the trading book. We believe, however, that this concern is misplaced. Banks have in place robust policies regarding allocation of positions to the trading book versus the banking book, and the ability to move existing positions between books. These policies are based on existing accounting standards and reflect requirements regarding allocation of positions, and any determinations to move positions between books, of course, also are subject to supervisory validation and review. The limits on banks’ ability to choose how to allocate positions initially and whether the positions can or should be moved are likely to become even more constrained based on the Basel Committee’s consultative document, Fundamental Review of the Trading Book (the “**FRTB Proposal**”).<sup>34</sup> The FRTB Proposal would impose a “strict limit on the ability of banks to move instruments between the trading book and the banking book at their own choice after initial designation,” and such redesignations or “switches” would be permitted “only in extraordinary circumstances.”<sup>35</sup> The FRTB Proposal also would impose a capital surcharge if a bank’s total capital charge after a “switch” would be lower than prior to the switch, would require senior management to approve any redesignation and would require banks to adopt policies regarding redesignations with annual updates.<sup>36</sup> Thus, the measures proposed as part of the FRTB Proposal or other similar measures targeted at arbitrage address this concern more directly and effectively, without the associated negative consequences of a Pillar 1 approach. Put another way, a Pillar 1 capital charge is neither a necessary nor an efficient means to address any perceived capital arbitrage problems as between the banking book and the trading book, which are separately dealt with in the FRTB Proposal.

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<sup>33</sup> Id. at 1.

<sup>34</sup> See Basel Committee, Fundamental Review of the Trading Book: A Revised Market Risk Framework (Oct. 31, 2014), available at <http://www.bis.org/publ/bcbs265.htm>, at 52; see also Basel Committee, Fundamental Review of the Trading Book: Outstanding Issues (Dec. 2014), available at <http://www.bis.org/bcbs/publ/d305.htm>, at 5-6.

<sup>35</sup> Basel Committee, Fundamental Review of the Trading Book: A Revised Market Risk Framework (Oct. 31, 2014), available at <http://www.bis.org/publ/bcbs265.htm>, at 52.

<sup>36</sup> Id.

The Associations appreciate the opportunity to comment on the Proposal. We would be pleased for the opportunity to meet with representatives of the Basel Committee to discuss these comments and the topics of the Proposal more broadly if the Basel Committee believes it would be helpful.

If the Basel Committee would like additional information regarding these comments, please contact David Wagner at (212) 613-9883 (email: [david.wagner@theclearinghouse.org](mailto:david.wagner@theclearinghouse.org)), Ken Bentsen at (202) 962-7400 (email: [kbentsen@sifma.org](mailto:kbentsen@sifma.org)), or Richard Foster at (202) 589-2424 ([Richard.Foster@FSRoundtable.org](mailto:Richard.Foster@FSRoundtable.org)).

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## ANNEX A

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## Pillar 1: Non-Maturing Deposit Time Series approach (TIA) Methodology

Application of Non-maturing deposit methodology produces significant impact to duration of equity

Sample Impact Assuming Non-Maturing Deposits (NMD) Half Retail, Half Wholesale						
NMD Allocations	NMD Type	Stability Cap %	Pass-through Floor %	Implied Cap	Core	Non-Core
25%	Retail / transactional	80%	25%	60%	15%	10%
25%	Retail / non-transactional	70%	30%	49%	12%	13%
50%	Wholesale	65%	50%	33%	16%	34%
<b>100%</b>	<b>Total</b>				<b>44%</b>	<b>57%</b>
Current average deposit duration						2.3
Overnight deposit duration						(-) 0
<b>Duration differential</b>						<b>2.3</b>
Assumed bank leverage, (liabilities/equity)						9.0x
Deposits as percent of funding (assume no CDs)						90%
Multiple of deposits to equity						8.1x
Core multiple of deposits to equity						3.5x
Non-core multiple of deposits to equity						4.6x
<b>Increase in duration of equity</b>						<b>10.4</b>

Source: Basel Committee on Banking Supervision. Consultative Document: Interest rate risk in the banking book. June 2015.

<sup>1</sup> This example is based on a hypothetical bank and is not representative of Barclays or of any other bank.

ANNEX B (Cont'd)

## Pillar 1: Non-Maturing Deposit Time Series approach (TIA) Methodology Cont'd

Likewise, even best case Non-maturing deposit allocation scenario produces considerable impact on the duration equity

Best Case Impact Assuming Non-Maturing Deposits (NMD) All Retail / transactional						
NMD Allocations	NMD Type	Stability Cap %	Pass-through Floor %	Implied Cap	Core	Non-Core
100%	Retail / transactional	80%	25%	60%	60%	40%
0%	Retail / non-transactional	70%	30%	49%	0%	0%
0%	Wholesale	65%	50%	33%	0%	0%
<b>100%</b>	<b>Total</b>				<b>60%</b>	<b>40%</b>
Current average deposit duration						2.3
Overnight deposit duration						(-) 0
<b>Duration differential</b>						<b>2.3</b>
Assumed bank leverage, (liabilities/equity)						9.0x
Deposits as percent of funding (assume no CDs)						90%
Multiple of deposits to equity						8.1x
Core multiple of deposits to equity						4.9x
Non-core multiple of deposits to equity						3.2x
<b>Increase in duration of equity</b>						<b>7.4</b>

Source: Basel Committee on Banking Supervision. Consultative Document: Interest rate risk in the banking book. June 2015.

## ANNEX B (Cont'd)

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ANNEX C

Two institutions, with the same EVE interest rate risk and capital profile, have different EVE ratios depending on the relative credit risk profile

	Hypothetical Custody Bank LOW Credit Risk <sup>1</sup>	=	Hypothetical Commercial Bank HIGH Credit Risk
$\Delta$ EVE under +200 bps shock	-\$2.0 BN		-\$2.0 BN
RWA	\$200 BN		\$300 BN
	Assets heavily weighted to Investment Portfolio (Asset Backed Securities)		Assets heavily weighted to Loans (Credit Card, Auto, Commercial)
Total Capital (Tier 1 + 2)	\$20 BN	=	\$30 BN
Total Capital Ratio	10%		10%
$\Delta$ EVE Nil as % of total capital under +200 bps shock	-10.0%		-6.7%

Even though \$ EVE sensitivity to rate movements and capital ratios are the same, EVE sensitivity ratios are very different solely due to different credit risk profiles (different RWA and capital \$ for similar capital ratio)

<sup>1</sup> For example, a bank with significant custody operations

ANNEX D

Two institutions with the same interest rate risk profile have different NII risk ratios depending on the relative credit risk profile

	Hypothetical Custody Bank LOW Credit Risk <sup>1</sup>	=	Hypothetical Commercial Bank HIGH Credit Risk
<b>Δ NII under -100 bps shock</b>	-\$1.0 BN	=	-\$1.0 BN
<b>Average earning assets (12M trailing)</b>	\$1,000 BN		\$1,000 BN
<b>1Y net interest income</b>	\$10 BN		\$30 BN <sup>2</sup>
<b>NIM (12M trailing)</b>	1.00%		3.00% <sup>2</sup>
<b>Δ NII as % 12M trailing NII</b>	-10.0%		-3.3%

Even though \$ NII sensitivity to rate movements is the same, NII sensitivity ratios are very different solely due to different credit risk profiles (different NIM and NII)

<sup>1</sup> For example, a bank with significant custody operations

<sup>2</sup> Higher interest income and NIM due to increased credit risk and associated spread