



# ***Financial Services Management***

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## **Fundamental Review of the Trading Book: Final Standards**

### **Cite**

Basel Committee on Banking Supervision, STANDARDS – Minimum capital requirements for market risk

### **Recommended Distribution:**

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### **Website**

<http://www.bis.org/bcbs/publ/d352.pdf>

### **Impact Assessment**

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- Although Basel generally discounts added costs from these rules, data suggest many banks – especially those with large trading operations and/or a securitization focus – will need to post far more trading-book capital and bear large implementation expenses.
- Products with high, new capital charges (e.g., securitizations, single-name CDS with low liquidity) may be reduced or even eliminated at affected banks. Some may also sharply reduce investment-banking operations, while others will realign banking and trading operations for capital optimization.
- The new ES methodology may well address VaR flaws, but it is untested and possibly subject to model risk that may only be captured by regulators in the wake of stress events. Back-testing ES models is particularly complex.
- The final standards imply that exceptions might be considered for market-making, perhaps easing the adverse impact of the FRTB.
- Trades in TLAC debt/equity are also subject to possible FRTB changes, although it is less likely that these would be reductions due to regulatory fears of undue inter-connectedness if banks hold TLAC issued by other large banks.

- Use of internal models will be complex and hard to achieve. Banks seeking to do so will among other conditions need to implement market-risk stress tests very different from stress-VaR calculations that are now uncommon other than with regard to the six U.S. GSIBs. All of these conditions will be costly to meet and maintain, likely leading more banks to use the SA where allowed to do so.
- The SA is a more widely-used rule, benchmark, and/or floor that will prevent unduly low IMA results, but not necessarily capture higher-risk positions, creating new risk incentives at sophisticated banks willing to absorb them. Reduced recognition of hedging and diversification in the IMA may also create risk-taking incentives.

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## Overview

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Continuing its “fundamental review of the trading book” (FRTB) that dramatically revises the current market-risk rules known as Basel II.5,<sup>1</sup> the Basel Committee has adopted final standards that take a far more stringent view of the internal-models approach (IMA), mandating a revised and more stringent standardized approach (SA) that is now not just an alternative but also a floor under the IMA. The rules also include a shift from the value-at-risk (VaR) methodology to one based on expected shortfall (ES) under stress, new standards addressing illiquidity risk replacing static time horizons under VaR, and a revised boundary between the banking and trading books to prevent regulatory arbitrage. Taken together, all of these changes lead to significant increases in trading-book capital that will result in strategic changes at banks now active in affected lines of business. Demand for assets frequently used in trading operations (e.g., sovereigns and agency obligations) could also suffer despite provisions designed to reduce capital for instruments with low credit and liquidity risk. However, higher-risk assets not captured by the SA could become a greater focus for banks that remain on the IMA.

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## Impact

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The final FRTB follows a very controversial consultation<sup>2</sup> and two subsequent quantitative impact surveys (QIS). The final standards are revised from the initial consultation, in part because the preliminary QIS found that trading-book capital would rise on average 73 percent, with some banks enforced to hold as much as nine times more capital. The latest QIS downplays these concerns based on revisions to the final FRTB, but many banks may nonetheless find that their trading-book capital rises significantly.

This is because, as before, the latest QIS provides only weighted-average conclusions and many of the banks in its sample do not have large trading

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<sup>1</sup> See **CAPITAL181**, *Financial Services Management*, May 29, 2012.

<sup>2</sup> See **CAPITAL202**, *Financial Services Management*, November 15, 2013.

books affected by these changes to market risk-based capital. As a result, the lower average-impact data likely still reflect significant actual capital differences with considerable impact on banks at the upper end of the spectrum. Basel did not this time issue ranges for specific banks that permit assessment of how the most significantly affected banks fare under the revised FRTB. Given the scope of changes from the proposed to the final standards (see below), capital implications will generally remain significant, with affected banks also required to invest millions of dollars to ensure compliance with the new system for constructing, validating, and updating any internal models they still retain.

Among the most significant changes in the final FRTB is a tough approach to “exotic” instruments with “residual” risk. These risks include optionality by the counterparty or risks such as longevity or weather that are not now well modeled in standardized financial markets. “Exotic instruments” – a category of somewhat uncertain proportions under the final rule – are most heavily penalized, but the final standards now make it clear that carbon-credit positions are not “exotic.” This decision appears based more on social-policy intentions than on financial risk and may signal Basel’s willingness to adjust other trading-book risk weightings based on social policy much like mortgages and small-business risk has long been favored in the banking-book rules. However, the FRTB does not give mortgages a pass, including prepayment risk and “emotional” factors for RMBS among the residual risks banks now must capitalize.

Another significant change is the treatment of liquidity risk that is generally more generous than provided in the consultation. However, the multiplier for banks that use internal models has been sharply increased from the one percent proposed to 1.5 percent. As a result, capital under internal models will be considerably higher than many anticipated, as well as above current models-driven approaches.

Operational risk and complexity are also major challenges, especially for banks that continue to use internal models. For example, models-using banks now need to calculate capital on an intra-day basis, a complexity that may well compound with the multiplier to persuade many to use the standardized approach.

Because this SA is now, as noted, a benchmark against which IMA conclusions will be judged and a floor on them, banks not required by their regulators to use the IMA may find it simpler and less costly to use the SA even though capital requirements for positions now judged low risk under the IMA will likely face higher capital requirements. The new SA better captures higher-risk positions than the II.5 rules, but it may well still not do so for complex instruments. If the IMA also does not properly capture these higher-risk positions, then incentives akin to those created by leverage-capital standards will arise under which banks seek to arbitrage their capital requirements by holding books of higher-risk exposures that remain under-weighted for capital purposes, disposing of lower-risk holdings where capital

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and return incentives do not align. Reduced capital recognition of hedging and diversification may also lead banks under IMA to take on more risk because the economic-capital benefits of anticipated risk reductions are not recognized for regulatory purposes.

The FRTB is not Basel's only effort to standardize regulatory-capital requirements. In late 2015, Basel significantly revised the standardized approach to credit risk in the banking book.<sup>3</sup> It did not at the same time finalize floors and other constraints on the use of internal models analogous to the FRTB,<sup>4</sup> but it said in early January that it will do so following a revised consultation and quantitative impact survey. A proposal to standardize operational risk-based capital<sup>5</sup> is also pending. All of this increases the overall shift in global capital rules from advanced to standardized requirements. The U.S. has yet to follow this, mandating as it does that larger banks and BHCs (i.e., those with assets over \$250 billion) use the advanced internal ratings-based approach for credit risk in the banking book<sup>6</sup> and the advanced-measurement approach for operational risk.<sup>7</sup>

## What's Next

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The FRTB was released on January 14. National supervisors are to lay out their requirements by January 1, 2019, with reporting under them to begin at year-end 2019.

Basel intends to monitor the FRTB as implementation begins and adjust it as necessary. Pending changes to the capital treatment for “simple, transparent, and clear” asset-backed securities<sup>8</sup> would apply to both the banking and trading books. Credit-value adjustment standards will also be incorporated into the market-risk framework. Pending changes related to interest-rate risk,<sup>9</sup> operational risk,<sup>10</sup> and sovereign obligations (not yet addressed in a specific proposal) would also be considered as changes to the market-risk rules. A broader review of changes to bank capital requirements for certain assets – e.g., those associated with market-making or issued as TLAC<sup>11</sup> – would also affect the market-risk framework. Disclosure requirements for the new FRTB standards will be separately proposed, although Basel does not now say when this will be done.

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<sup>3</sup> See **CAPITAL209**, *Financial Services Management*, December 21, 2015.

<sup>4</sup> See **CAPITAL207**, *Financial Services Management*, January 12, 2015.

<sup>5</sup> See **OPSRISK16**, *Financial Services Management*, October 20, 2014.

<sup>6</sup> See **CAPITAL201**, *Financial Services Management*, July 19, 2013.

<sup>7</sup> See **OPSRISK14**, *Financial Services Management*, June 14, 2011.

<sup>8</sup> See **ABS39**, *Financial Services Management*, November 30, 2015.

<sup>9</sup> See **IRR6**, *Financial Services Management*, June 17, 2015.

<sup>10</sup> See **OPSRISK16**, *Financial Services Management*, October 20, 2014.

<sup>11</sup> See **TLAC4**, *Financial Services Management*, November 24, 2015.

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## Analysis

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The analysis below addresses major strategic issues. Clients are advised to consult the FRTB for specific considerations and implementation matters. All of the requirements described below apply, like other Basel rules, on a consolidated worldwide basis. However, supervisors may permit banking and financial entities in a group which is running a global-consolidated trading book and whose capital is assessed on a global basis to include just net short and net long risk positions no matter where they are booked. Treatment is allowed only when the new SA permits a full offset of the risk position or in situations of problematic profit repatriation or of opacity.

There is no *de minimis* exemption for market risk except with regard to certain foreign-exchange transactions or other consideration warranting segregation of national operations.

### A. SA

#### 1. Scope

All banks would need to calculate the SA and report each month even if they otherwise use the IMA.

#### 2. Key Components

The Sensitivities-based Method builds on the elements of the former Standardized Measurement Method for market risk, which allowed for the use of sensitivities in some risk treatments within a risk class (e.g., the duration method for interest rate risk) and for certain instruments (e.g., the delta plus method for options). The Sensitivities-based Method entails expanding the use of sensitivities across the standardized approach to additional risks (e.g., equity- and commodity-risk factors), as well as to include a new framework for liquidity risk.

The standardized Default Risk Charge is calibrated to the credit risk treatment in the banking book to reduce the potential discrepancy in capital requirements for similar risk exposures across the banking and trading books. As with the sensitivities-based method, the Default Risk Charge allows for some limited hedging recognition, but it does not also reflect diversification.

A residual risk add-on is applied in the SA to capture risk not otherwise addressed with the above requirements (e.g., pre-payment options, correlation risk, behavioral risk (e.g., demographic or “emotional” factors that drive mortgage-borrower decision)).

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A bank must determine each delta and vega sensitivity and curvature scenario based on instrument prices or pricing models that the independent risk control unit uses to report market risks or actual P&L to senior management.

## **B. IMA**

### **1. Scope**

Any bank using the IMA must first be approved to do so by its supervisor under detailed quantitative and qualitative conditions that will make it difficult for banks to use the IMA although the standards indicate that home and host authorities intend to work together to speed these approvals.

### **2. Framework**

For a bank that has bank-wide internal model approval for capital requirements for non-securitizations in the trading book, the total IMA capital requirement would be an aggregation of ES, the default risk charge (DRC) and stressed capital add-on (SES) for non-modelable risks. ES must be computed daily across the bank and for each trading desk using the IMA. In calculating the expected shortfall, a 97.5<sup>th</sup> percentile, one-tailed confidence level is to be used. The ES liquidity shortfall should be calculated on a ten-days horizon, with scaling factors detailed in the FRTB. ES must also be calculated for stress scenarios, capturing stress correlations, doing so under an approved “indirect” approach that uses a reduced set of risk factors appropriate to a bank’s positions subject to supervisory approval. The results of this stress test are then scaled up to compute the final ES charge.

Extensive P&L-attribution, model-validation and back-testing standards are also prescribed covering matters such as ensuring that assumptions do not under-estimate risk and capture concentrations, use “real” prices, and reflect situations in which end-of-day values do not change (excluding considerations such as fees). Procedures for determining if trading activities are suitable for the IMA are also detailed, with these mandating considerations such as organizational structure (including that of the trading desks) and firm-wide internal capital-allocation methodologies. Any model, back-testing, or other factors that are not in compliance with IMA standards would result in mandatory use of the SA for designated periods of time. Basel does note that there may on very rare occasions be a valid reason why a series of accurate desk-level models across different banks produce many back-testing exceptions or inadequately track P&L attribution to the front-office pricing model (i.e., during periods of significant cross-border stress or when financial markets are subjected to a major “regime” shift). Supervisors then could permit relevant desks to remain capitalized under the IMA but require each desk’s model to take account of the regime shift or significant market stress when possible. However, the Committee believes that this supervisory discretion should only be allowed under the most extraordinary, systemic circumstances.

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### **3. *Default Risk***

Separate internal models are to measure default risk taking into account not only direct loss related to an instrument, but also indirect ones resulting from a default event. Default risk in the IMA is to be measured using VaR using a specified simulation model and backed by documentation detailing compliance with them and other requirements. The VaR calculation must be done weekly and be based on a one-year time horizon at a one-tail, 99.9<sup>th</sup> percentile confidence level. All posit correlations must be measured over ten years that include at least one stress scenario generally based on a one-year liquidity horizon.

Importantly, sovereign positions must be included in these models despite their zero risk weighting in the SA. In general, netting is permitted if various restrictions are met.

Once default risk is established, the DRC is to be calculated based on the incremental loss (above and beyond that reflected in mark-to-market valuations). Incremental loss is to be calculated based on an array of requirements that stipulate consideration of systemic as well as specific risk. However, because calculating incremental loss is more qualitative, these requirements are somewhat less prescriptive.

### **4. *Relation to the SA***

Banks must calculate the SA for each trading desk as if it were a stand-alone portfolio at least weekly.

### **5. *Stress Testing***

This is required for IMA banks at both the trading-desk and bank-wide levels according to standards in the rules designed to capture both qualitative and quantitative factors that could create fat-tail risk. The FRTB includes both supervisory stress-test criteria and those banks should use, requiring also that senior management and the board periodically review results.

### **6. *IMA Calculation***

For those desks permitted to use the IMA, all risk factors that are modelable must be included in the internal, firm-wide, ES model. The bank must calculate its internally-modeled capital charge at the bank-wide level using this model, with no supervisory constraints on cross risk-class correlations. However, partial ES calculations based on risk classes cannot be used for diversification benefit. Weighted averages under a calculation methodology detailed in the rule then lead to the final capital charge. A multiplier of 1.5 percent applies based on risk-management capabilities according to the regulator's determination along with a "plus" factor banks are to assess based on their own judgment and criteria related to back-testing results.

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## **7. Securitizations**

These may be covered by the IMA.

### **C. Boundaries and Related Requirements**

#### **1. Book-Assignment Criteria**

As noted, the FRTB lays out boundaries between the banking and trading book to prevent regulatory arbitrage by, for example, preventing assets that are not readily tradable or marked to market on a daily basis from being held in the trading book. Regulators are also given flexibility to dictate which assets go where, with a penalty capital charge to be imposed if risk-based capital drops solely as a result of changing the book in which an exposure is housed. Requirements for the treatment of internal risk transfers from the banking book to the trading book are clearly defined for risk transfers of credit, equity and interest rate risk. Internal risk transfers from the trading book to the banking book are not recognized under the framework.

Banks may only include a financial instrument, foreign exchange, or a commodity in the trading book when there is no legal impediment against selling or fully hedging it and must fair-value daily any trading book instrument and recognize any valuation change in the P&L account. Instruments held for the following purposes must be in the trading book:

- short-term resale;
- short-term price movement profit;
- arbitrage-profit locks; hedging risks related to the above instruments;
- instruments in the correlation-trading portfolio;
- instruments managed on the trading desk as defined in the FRTB;
- instruments resulting in a net short credit or equity position in the banking book; and
- instruments related to an underwriting commitment.

Instruments that must be held in the banking book include:

- unlisted equities;
- securities-warehousing instruments;
- real-estate holdings;
- retail and SME credit;
- fund equity investments not subject to pricing look-through or daily pricing; and
- derivatives or hedging instruments related to these assets.

Banks that believe instruments listed above or those covered by other clarifications in the FRTB are inappropriately classified would need to get formal approval from their supervisor to alter the book in which the asset is held. Supervisors may also demand evidence to support a bank's classification and reverse it. The FRTB includes detailed documentation and governance standards in this area.

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## **2. Risk Management**

Under procedures approved by senior management, all trading-book assets are to be subject to active risk management that meets criteria detailed in the standards.

## **3. Trading Desks**

These are defined in the rules and are to be determined by banks based on this definition subject to supervisory approval. Importantly, trading desks must not only be rigorously identified without overlaps, but also are to be subject to compensation policies linked to established objectives and to an array of risk-management controls detailed in the standards. An array of reports for supervisors for each trading book is required.

When trading desks use the IMA, they can be separately deemed eligible or ineligible to do so. Prior rules allowed supervisors only to mandate the SA for an entire bank, not on a desk-by-desk

## **4. Limits**

Strict limits (including senior-management approval and public disclosure) apply to any movement of assets from the banking to the trading book or vice versa (including through internal transfers by trading desks even if these are designed to hedge risks in one book with assets in another). Capital benefits resulting from switching are not allowed in any circumstance. Surcharges offsetting reduced capital would then apply.

## **5. Counterparties**

For credit-risk purposes, trading-book weights are to be the same for counterparties as they are under the banking book, using either the SA or IRB depending on what the bank uses for the banking book.

## **6. Collateral**

For repos, all trading-book instruments may be used as capital, although any instrument that is not eligible collateral for banking-book purposes is subject to haircuts in the FRTB.

## **D. Currency Risk**

Matched currency risk positions protect a bank against loss from movements in exchange rates, but will not necessarily protect its capital ratio. If a bank has its capital denominated in its domestic currency and has a portfolio of foreign currency assets and liabilities that is completely matched, its capital/asset ratio will fall if the domestic currency depreciates. By running a short-risk position in the domestic currency, the bank can protect its capital, although the risk position would lead to a loss if the domestic currency were to appreciate. Supervisors may permit this type of

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arbitrage if conditions (including prior approval) specified in the final standards are met.

### **E. Financial Obligations**

Holdings of a bank's own eligible regulatory capital instruments are deducted from its capital. Holdings of other bank, securities-firm, and financial-entity eligible regulatory capital instruments, as well as of intangible assets, will receive the same treatment as that set down by the national supervisor for these assets held in the banking book, which in many cases is also deduction from capital.

However, where a bank demonstrates that it is an active market-maker, then a national supervisor may establish a dealer exception for holdings of other bank, securities-firm, and financial-entity capital instruments in the trading book. To qualify for the dealer exception, the bank would have to have adequate systems and controls surrounding the trading of financial institution eligible regulatory capital instruments. Holdings of capital instruments that are deducted or risk-weighted at 1,250 percent may or may not be included in the market-risk framework.

The market-maker/dealer exemption is, as noted, subject to change by the Basel Committee.