Meeting Between Staff of the Federal Reserve System and Representatives of Morgan Stanley
March 16, 2026

Participants: Tara Hofbauer, Brian Kesten, Hillel Kipnis, Emma Lucas, Doriana Ruffino, and Rye Salerno (Federal Reserve Board); Patrick deFontnouvelle (Federal Reserve Bank of Boston); Ronel Elul (Federal Reserve Bank of Philadelphia); Nika Lazaryan, Fabrizio Marodin, and Dengli Yang (Federal Reserve Bank of Richmond); Sara Holm and Jason Schmidt (Federal Reserve Bank of Minneapolis)

Dmitriy Barskiy, Sean Egan, Andrew Nash, Denise Pieck, Angela Shen Ross, Brandon Von Feldt, Sharon Yeshaya, and Caroline Yoo (Morgan Stanley)

Summary: Staff of the Federal Reserve System met with representatives of Morgan Stanley regarding the Board's notice of proposed rulemaking to enhance the transparency and public accountability of its annual stress test, as well as the Board's requests for comments on the scenarios and models for the upcoming 2026 stress test (the stress test proposals). Representatives of Morgan Stanley discussed their views on the stress test proposals, including the proposed pre-provision net revenue models.

Attachment

Morgan Stanley

February 20, 2026

Ann E. Misback
Secretary
Board of Governors of the Federal Reserve System
20th Street and Constitution Avenue NW
Washington, D.C. 20551

Re: Enhanced Transparency Proposal

Ladies and Gentlemen:

We appreciate the opportunity to comment on the proposal published by the Board of Governors of the Federal Reserve System (the "**Board**") to increase the transparency and public accountability of the Board's supervisory stress testing framework and incorporate related modifications to capital planning and stress capital buffer standards (the "**Enhanced Transparency Proposal**").[1]

Morgan Stanley supports the Board's efforts to reevaluate its supervisory stress testing practices, as implemented through its Comprehensive Capital Analysis and Review ("**CCAR**") program. After more than a decade of operational experience and evidence, CCAR could be made more accurate and better designed to advance supervisory and risk management objectives; more efficient in its operation, with reduced burdens and complexity for both the Board and firms; and better designed to capture the specific profiles of individual firms, which have a diverse range of business models and exposures. We support a strong supervisory stress testing framework and are submitting this comment letter to explain how, in specific areas, the Enhanced Transparency Proposal could be improved.

We encourage the Board to adopt revised supervisory stress testing methodologies in time for 2027 CCAR. Our recommendations in this letter emphasize practical, reliable approaches that can be implemented based on existing data collection practices paired with modest adjustments to the Board's proposed models. Where further work is required in specific areas, we encourage the Board to adopt empirical-based methodologies in time for 2027 CCAR while the Board evaluates further enhancements over a longer time horizon.

The Enhanced Transparency Proposal includes a wide range of methodologies that impact every business line at every large bank. Recognizing the large scope of models proposed by the Board, we have focused our comments in this letter on the most critical areas that we encourage the Board to prioritize in advance of 2027 CCAR.[2] In places, our comments focus on time period measurements for data. We

[1] 90 Fed. Reg. 51,856 (Nov. 18, 2025). Docket No. R–1873, RIN 7100–AH05.
[2] In some areas, we incorporate by reference technical commentary in the February 20, 2026, comment letter submitted by the Bank Policy Institute, the American Bankers Association, the Financial Services Forum, the

believe CCAR models should generally incorporate the most recent data series suitable for each specific model; in some cases we believe jump-off date spot values are most suitable whereas in other cases averaging across recent quarters may be necessary to correct for seasonality fluctuations.

Pre-Provision Net Revenue ("PPNR")

Wealth management business line recommendations

We support efforts by the Board to improve supervisory data collection and modeling techniques in PPNR calculations, particularly as applied to wealth management business lines. Historically the Board's PPNR models have not fully reflected the earnings durability of these business lines. Variable non-interest expenses ("**NIE**") decline in tandem with non-interest income declines, preserving core earnings capacity even in economic downturns. Through the Enhanced Transparency Proposal, the Board has taken an important step forward to strengthen related NIE and non-interest income projections for wealth management business lines.[3]

The proposed PPNR techniques could, however, be further improved to achieve more accurate, reliable and consistent forecasts, particularly when considering the interplay of modeling choices with scenario design choices. For example, the use of a three-year averaging mechanic penalizes wealth management businesses that have continuously expanded the depth and breadth of their client franchises such that most revenues are generated from fee-earning client assets. A firm with steady growth in fee-earning client assets over a three-year period has greater earnings capacity as of the jump-off date than it did on average during that period; using an average is a mismeasurement of the firm's earnings capacity.

The effects of this PPNR Model feature are amplified when combined with the equity market path in the projection period. Equities are a major component of fee-earning client assets and thus drive revenues; as a result, when equity values are rising during the three-year period, a bank's earnings capacity will be higher at the jump-off date than on an average basis during the period. The scenario design guidelines, however, impose additional severity on the Dow Jones path when market performance leading up to the jump-off date has been strong.

A dynamic and growing wealth management business is thus subject to two levels of conservatism in revenue forecasts: first, its client franchise is measured through a three-year average that does not reflect its full earnings capacity as of the jump-off date; second, the profitability of the under-measured business is forecasted through a very conservative scenario, the severity of which is calibrated to market levels as of the jump-off date. PPNR modeling choices and scenario design choices would be better reconciled through use of jump-off date values that do not replicate conservatism embedded in the equity guides. This recommendation is also more aligned with the Board's stress capital buffer ("**SCB**")

Securities Industry and Financial Markets Association, the International Swaps and Derivatives Association, Inc., and the U.S. Chamber of Commerce (the "**Joint Trades Letter**") (link).

[3] Board, Supervisory Stress Test Model Documentation: Pre-Provision Net Revenue (PPNR) Model, Oct. 2025 (Updated Dec. 2025) ("**PPNR Model**") (link).

averaging proposal, which would impose a separate two-year averaging mechanic that reduces the need for multiyear averaging in the models used in each CCAR cycle.[4]

Improving the accuracy of NIE and non-interest income projections in wealth management business lines should be a central objective in CCAR revisions. Fee-based businesses such as wealth and asset management generate durable, recurring income streams that provide ballast to larger banking organizations, including in economic downturns. Broadly speaking, wealth management businesses have three distinct revenue drivers: asset management revenues, primarily driven by fee-based client assets and the applicable fee rate; transactional revenues, primarily driven by client activity; and net interest income. Wealth management financial advisors' compensation—a significant NIE driver—is largely determined through formulaic payout calculations linked to asset management revenues and transactional revenues. As a result, declines in these two compensable revenue categories flow directly into NIE declines, as compensation moves in tandem with revenues. The PPNR Model should recognize this inherent connection, which ensures that wealth management NIE can be managed effectively in market downturns.

With this context, we recommend several adjustments to the proposed PPNR Model to improve the accuracy, reliability and consistency of wealth management business line profitability forecasts.

- Data time period: The PPNR Model should incorporate jump-off date values instead of three-year average values. As explained above, jump-off date values provide the most accurate current measure of a wealth management business line's earnings capacity. This recommendation applies regardless of whether the Board uses revenue from the quarter ending as of the jump-off date or (as recommended below) fee-earning asset values.

- Fee-earning asset values: The PPNR Model should incorporate fee-earning client asset values, which are the most reliable measure of a wealth management business line's earning capacity. Market-driven changes in asset values in the projection period can be estimated by applying relevant macroeconomic drivers, such as Dow Jones and BBB spreads, to jump-off date asset values.

    - Net flows: In a fee-earning asset value approach, PPNR modeling should incorporate institution-specific fee-earning asset net inflow / outflow estimates in the projection period. Wealth management franchises are not static; adjusting client asset values for empirically observed net flows would improve accuracy in forecasts.

- Efficiency ratios: PPNR Model coefficients should be revised to reflect each wealth management business line's efficiency ratio, as demonstrated through observed revenue and expense structures. The proposed model implies that a hypothetical firm only generating wealth management revenue would have an efficiency ratio above 100% over the entire nine-quarter forecast horizon, effectively penalizing this relatively lower risk

[4] 90 Fed. Reg. 16,843 (Apr. 22, 2025). Docket No. R–1866, RIN 7100–AG92.

business line. This miscalibration in coefficients—at odds with publicly available information—is compounded by applying uniform efficiency ratio paths throughout the nine-quarter projection horizon, which does not account for differences in firms' revenue composition.[5] This problem could be solved in either of two ways.

- Efficiency ratio models could incorporate firm-specific fixed effects instead of the proposed five-year average revenue historical variable. The Board already collects sufficient reporting data to implement a firm-specific fixed effects approach. This approach might be supplemented over time through additional research around using revenues to inform the shape of the nine-quarter efficiency ratio path.

- The Board could modify and expand data collection to enable more accurate and granular calculations of NIE and non-interest income. Our technical comments later in this letter identify specific line items that could be added to reporting templates that would enable the Board to confirm each institution's empirically grounded efficiency ratio.

Regardless of the specific methodological approach utilized, we emphasize the importance of achieving improved accuracy in the PPNR Model as applied to wealth management business lines. Nearly half of Morgan Stanley's revenues are generated by our wealth management segment, which benefits from variable NIE structures that preserve earnings in periods of economic stress.[6] Morgan Stanley's deliberate and successful expansion in this business line in the past fifteen years has made the firm more resilient and better able to meet clients' needs and provide credit to the economy through the cycle, underscoring the importance of correctly calibrating PPNR forecasts.

PPNR "double count" recommendations

In addition to our wealth management recommendations, we encourage the Board to address overlaps, or "double counts," between the PPNR methodology and other CCAR methodologies applied to institutional markets businesses. While we appreciate that the Board's modeling choices may in some areas reflect deliberate conservatism, we believe that targeted refinements to the PPNR Model are justified where substantial losses are separately forecasted for the same positions or activities in more than one CCAR methodology. The following two areas should be addressed before 2027 CCAR.

- HFS/FVO and PE losses: Held for Sale and Fair Value Option ("**HFS/FVO**") loan losses and private equity ("**PE**") losses are included in historical FR Y-14A schedules for PPNR projections across several line items; such losses are also separately included in projected "other losses / gains" in the Board's CCAR results. The Board's proposed use of historical PPNR submissions

[5] Morgan Stanley, Form 10-K for the year ended Dec. 31, 2025 ("**MS 2025 Form 10-K**") (link), p. 27 (disclosing a full-year 2025 pre-tax margin of 29.3% for Morgan Stanley Wealth Management).
[6] MS 2025 Form 10-K, p. 27 (reporting full-year Morgan Stanley Wealth Management net revenues of $31.8 billion and consolidated Morgan Stanley net revenues of $70.6 billion).

from firms will result in a "double count" of these losses across PPNR and other losses / gains stress losses. The Federal Reserve should resolve this double count by excluding HFS/FVO loans and PE losses from PPNR.

- MTM losses: Mark-to-market ("**MTM**") losses in trading portfolios are included in historical data used to calibrate PPNR projections even though these same portfolios are subject to the Global Market Shock ("**GMS**"), which also imposes losses on trading portfolios. The proposed sales and trading PPNR modeling methodology should be replaced with a simple four-quarter trailing approach, which would produce projections that are transparent, seasonally neutral, easy to implement with current data collections, and conservatively do not capture the countercyclical benefit associated with higher volumes and spreads.

Appendix 1 includes analysis and evidence supporting our PPNR recommendations, including illustrative technical formulas to demonstrate how data could be incorporated into the Board's models to improve forecasting accuracy.

Global Market Shock

The GMS component of CCAR is an important quantitative driver of CCAR results for firms with significant trading activities. We support the Board's proposal to shorten GMS liquidity horizons, which would improve the coherence of the GMS as an "upfront" instantaneous shock rather than one that replicates features of the macroeconomic scenario through multi-quarter liquidity horizons. We believe that, with shortened liquidity horizons, volatility and "atypical" GMS results should become less common, which supports retaining the current single-scenario, single-date approach. To the extent the Board expands the GMS component to include multiple scenarios, we believe that a two-scenario, single-date approach should be paired with efforts to reduce operational burdens on firms, including elimination of exploratory scenarios and simplified data collections in first-day letters.

Appendix 2 includes more analysis and evidence supporting our GMS recommendations.

Credit Risk

The Board's Credit Risk models should be revised to better reflect risk management practices that have become common since the financial crisis. In addition, greater transparency is needed for key model inputs—most notably the High-Yield Corporate Bond OAS—to enable firms to understand model behavior and outcomes. The adjustments described below should each be implemented before 2027 CCAR.

- ABLs: In the Corporate Model, asset-based loans ("**ABLs**") should not be classified with other secured facilities. FR Y-14Q reporting forms include an ABL flag, permitting the Board to collect data accurately identifying ABLs within larger loan portfolios. ABLs have structural credit risk protection features that make them more resilient in stressed markets, which justifies applying a lower loss given default ("**LGD**") to ABLs in the Corporate Model.

- HFS/FVO portfolios: The Board should release more information about the methodology applied to calculate losses in the HFS and FVO portfolios. The Enhanced Transparency Proposal and related documentation do not include sufficient detail to enable commentators to analyze and comment on these loss assumptions. Existing disclosures support an inference that the spreads applied to high-yield loans are too severe, relative to observed market evidence, or that the use of linear spread sensitivities may be overly conservative and inaccurate when considered against stress period data. We encourage the Board to release more information on HFS and FVO portfolio modeling to enable feedback on the complete record.

Appendix 3 includes more analysis and evidence supporting our Credit Risk recommendations.

Largest Counterparty Default ("LCPD")

Similar to the GMS, the LCPD component is an important quantitative driver of CCAR results and resulting SCBs for certain firms. A well-designed LCPD would reflect each firm's risk management practices: counterparties have variable credit risk profiles and banks make risk management judgments about their largest exposures. Quantitatively large counterparty relationships often involve firm-specific risk mitigation practices that address the vulnerabilities LCPD is designed to test.

- Margined counterparties: The LCPD model should apply reduced shocks to exposures with margined counterparties. The adoption of the Uncleared Margin Rule was a major post-crisis reform that has substantially reduced default risk and, when defaults do occur, substantially reduced resulting losses, as parties have been exchanging margin on a daily basis as portfolio values change.[7]

- Variable LGDs: Not all counterparties are alike and a uniform 90 percent LGD calibration significantly overstates default risk from exposures to certain governmental entities, unlevered counterparties, and other counterparties with strong credit risk profiles. Differentiating LGDs by industry of the counterparty in the LCPD component would improve the realism of the exercise and encourage firms to conduct more business with lower risk counterparties since LCPD results would be moderated.[8]

Tax-related projections

The PPNR Model should include a more accurate Deferred Tax Asset ("**DTAs**") methodology by relying solely on the deduction thresholds in the capital rule. As proposed, the PPNR Model overstates firms' tax liability by calculating a valuation allowance ("**VA**") on temporary DTAs. But the capital rule adopted by the Board in 2013 includes specifically calibrated thresholds for measuring tax-related effects

[7] See Joint Trades Letter, p. 60.
[8] See Joint Trades Letter, pp. 59-61.

that may arise temporarily or involve related calculations of DTAs and associated deferred tax losses.[9] The PPNR Model should incorporate the DTA methodology imposed by the capital rule without separate adjustments based on CCAR-only VA assumptions.[10]

Operational loss projections

We encourage the Board to revise the proposed Operational Risk model to better reflect empirical evidence, including with respect to timing assumptions, confidence levels and variability of operational losses across business lines. In particular, the timing of legal losses should be extended to later projection period quarters to more accurately reflect the time scale of litigation matters and associated losses.[11]

CCAR process

We support continued use of a December 31 as-of date, which aligns with a range of financial accounting and risk management year-end date measurements and operational practices. We believe that the Board could publish the annual CCAR scenario in early January, after the December 31 as-of date, and complete the annual process by June 30, as in current practice. We also recommend that the Board codify, by rule, a requirement that firms receive, by June 30, specific nonpublic information about the Board's calculation of firm-specific results, with receipt of such information triggering the start of the 15-day period for firms to submit a reconsideration request. Nonpublic information received by firms should include detailed information related to any firm-specific overlays applied by the Board. This calendar and process would preserve the core structure of the Board's existing annual CCAR practices and ensure that the Board and firms have a common understanding of supervisory stress test results.[12]

SCB averaging

Morgan Stanley submitted a comment letter supporting the Board's proposal to implement two-year averaging of CCAR results in the SCB.[13] In this letter, we express support for use of the most recent data series suitable for each CCAR model. These two recommendations are related: incorporation of the most recent available data will improve the accuracy of each annual CCAR cycle's results and any year-over-year volatility in outcomes would be mitigated through two-year averaging in the SCB. Two-year averaging should be implemented on a prospective basis after the Board adopts revised models incorporating comments on the Enhanced Transparency Proposal.

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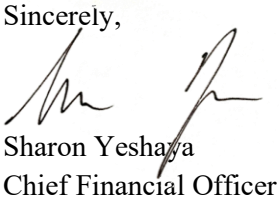
[9] 78 Fed. Reg. 62,018, 62,070-71 (Oct. 11, 2013).
[10] See Joint Trades Letter, pp. 90-93.
[11] See Joint Trades Letter, pp. 66-71.
[12] See Joint Trades Letter, pp. 4-8.
[13] See Letter from Sharon Yeshaya and Charles Smith (Jun. 23, 2025) (link).

We appreciate the Board's consideration of our comments on this important rulemaking.

Sincerely,



Sharon Yeshaya
Chief Financial Officer

Charles Smith
Chief Risk Officer

Appendix 1: PPNR Model Comments

The PPNR Model requires enhancements to forecast wealth management business lines' earnings capacity more accurately

We understand that, historically, the Board designed and calibrated its PPNR models utilizing non-CCAR reporting data submissions from the industry that intermingled revenues from wealth management, asset management and investment banking. The economic structures of these business lines exhibit materially different revenue and expense dynamics: while wealth and asset management business lines generally reflect through-the-cycle earnings stability, investment banking profitability is more sensitive to economic conditions, with reduced earnings capacity in stressed markets. Fee-based business lines such as wealth and asset management also have meaningfully lower risk profiles, pairing earnings durability with lower risk of significant losses. The historic PPNR methodology failed to accurately forecast wealth management revenues in severely adverse economic conditions, impacting CCAR outcomes for firms with significant presence in these business lines, effectively disincentivizing investments in growing lower risk businesses that make institutions safer.

The Enhanced Transparency Proposal takes important corrective steps to address these historic shortcomings in PPNR modeling practices. As revised, the proposed PPNR Model would include greater specificity in both modeling and related data collection for wealth management business lines, enabling more accurate profitability forecasts. However, as explained in greater detail below, PPNR practices could still be improved through modest enhancements that could largely be implemented in time for 2027 CCAR.

The PPNR Model should use as-of date spot values for wealth management activities instead of trailing 12-quarter average revenue

The Board's proposed PPNR Model would use trailing 12-quarter average revenue to project firms' non-interest income.[14] We recommend that, at least for wealth management business lines, the Board instead model non-interest income based on jump-off date values, for four reasons.

First, a three-year averaging mechanic understates revenue generation projections for firms with expanding wealth management business lines. Expansion can come in the form of deepened relationships with existing clients (e.g., growth in per-client fee-earning client assets) as well as accumulation of new clients who have fee-based accounts (e.g., growth in the total number of advisor-led client relationships). For business lines that primarily generate revenues through fees charged on total client assets, the most recent data series will provide the most accurate forecast of earnings. This approach is also conservative, as PPNR projections for franchises with declining client engagement will avoid overstating jump-off date earnings capacity. The Board does not calculate credit or market risk losses in CCAR based on a trailing 12-quarter average of loans or trading portfolios; for similar reasons, the most recent wealth management data will provide the most accurate assessments.

[14] PPNR Model, pp. 243-44.

Second, a three-year averaging mechanic is unnecessary to achieve conservatism in projections because of other conservative CCAR modeling choices. PPNR is calculated against economic forecasts in the severely adverse macroeconomic scenario, including sharp declines in equity markets, which are a large driver of PPNR forecasts for wealth management business lines. The proposed equity guides include overall market declines that are at, or beyond, the severity of observed post-World War II U.S. recessions, imposing severe conservatism on PPNR forecasts even if spot values are used. Combining conservative equity guides with a three-year averaging mechanic imposes two levels of conservatism in revenue forecasts: first, equity market-linked business lines are subject to the outer limits of historically observed declines; second, the starting values impacted by these market declines do not include the full current value of client relationships, since the three-year averaging mechanic dilutes earnings capacity based on client and fee-earning client asset growth in recent quarters.

Third, the use of a three-year averaging mechanic introduces technical and conceptual confusion when combined with the Board's SCB averaging proposal. Taken together, a firm's SCB would be based on the average of two separate PPNR calculations in successive years, each of which would incorporate three-year averaging. PPNR calculations in the second year would incorporate two-thirds of the same data used in the prior year's PPNR calculations; the SCB, in turn, would be based on a two-year average of capital ratio stress loss projections that in turn each incorporate three-year PPNR averages. Whatever potential benefit in PPNR forecasts that might be achieved through three-year averaging appears to be substantially diluted when considering partial duplication across CCAR cycles and SCB averaging.

Fourth, jump-off date values could be included in PPNR calculations with a relatively simple modification to the Enhanced Transparency Proposal. Instead of using the trailing 12-quarter average revenue value, the PPNR Model could instead use jump-off quarter data to model revenues. This approach would enable the Board to calculate PPNR based on the most recent data available, avoiding "blurring" effects of averaging across three years. Just as a bank's loan or trading portfolios might change year over year, with CCAR testing current year exposures, use of the most recent revenue value would permit the most accurate PPNR projections based on a firm's current business model as of the jump-off date. Among other advantages, this approach is also more consistent with the Board's policy objectives of ensuring that supervisory stress testing is forward-looking, generated from simpler and more transparent approaches, and robust and stable.[15]

More generally, the Board should reconsider the data time period measurements for all revenue models. Jump-off date spot values should be considered in other products where revenues are generated based on a similar "assets under management" concept (e.g., for asset management) while a four-quarter average would provide more stability for businesses that may exhibit seasonality, such as sales and trading.

The Board should revise the PPNR Model for wealth management business lines to incorporate client asset values

The Board's PPNR modeling practices for wealth management business lines would be improved by incorporating client asset values into PPNR methodologies. Client asset values include fee-based

[15] See 12 C.F.R. Part 252 Appendix B (codifying the Board's Stress Testing Policy Statement).

assets on which a firm earns advisory fees and, separately, non-fee-based assets on which it earns transactional fees. Wealth management business units' profitability is closely tied to client asset values, as revenues can be forecasted reliably based on average client asset levels and the associated fee rates. Non-fee-based assets generate resilient revenues, since they are based on client transactional activity across a broad range of products. Accordingly, when clients rebalance their portfolios in variable market conditions, transactional revenues in the form of commissions and fees generally increase.[16]

Fee-based client assets provide an important quantitative measure of a wealth management business line's earning capacity. Earnings can be reliably forecasted by applying macroeconomic variables aligned with equity and fixed income asset classes to each firm's fee-earning clients. Fee-based revenues can be forecasted using firm-specific revenue-to-assets ratios from FR Y-14Q reporting line items and PPNR calculations. This approach allows for a direct link between macroeconomic drivers and underlying revenue drivers (i.e., fee-based client assets).

A wealth management business line's income is largely derived from the client services it provides related to clients' assets. Fees and commissions applied to clients' assets are variable by product and client category and variable across firms; asset classes included in clients' portfolios will have variable economic forecasts in the severely adverse scenario. Use of fee-based client assets would facilitate more accurate and reliable PPNR forecasts.

Client asset-based PPNR calculations for wealth management business lines could be implemented through model changes that are more accurate and reliable

We have provided below illustrative suggestions for how the Board could refine the formulas in its PPNR Model to improve projections for wealth management business lines. This client asset-based approach relies on existing data collected by the Board so is capable of near-term implementation.

Client assets roll forward

Using jump-off date client asset values provides an accurate and reliable foundation for wealth management PPNR projections. The Board should enhance this jump-off date approach by including a mechanism to capture estimated changes in fee-based client asset values during the projection period. Changes in fee-based client assets are primarily driven by two factors: (i) net inflows or outflows (net flows), which reflect firm-specific net asset gathering from new and existing client relationships; and (ii) market performance impacting the value of fee-based client assets. Net flows are necessarily institution-specific and reflect the scale, product diversification and client relationships unique to each firm. By contrast, market performance changes apply generally to all firms and can be derived from a regression-based approach reflecting the Board's macroeconomic scenario.

[16] See, e.g., Morgan Stanley, Form 10-Q for the quarter ended Mar. 31, 2020 ("**MS Q1 2020 Form 10-Q**") (link), p. 11 (disclosing that, during the Q1 2020 COVID quarter, Morgan Stanley Wealth Management commissions and fees within the transactional revenue category increased from $406 million to $588 million when compared with Q1 2019).

The fee-based client asset roll forward recommendation is summarized in the following illustrative formula:

$$\boldsymbol{Ending\ Balance = Starting\ Balance + Net\ Flows + Market\ Performance}$$

This approach is both intuitive and empirically grounded. The use of a jump-off (or starting balance) value of client assets provides the most accurate representation of a firm's income-generating capacity at the starting point of the projection period. The adjustments for net flows and market performance are both logical—profitability in client asset-based business lines is impacted both by net flows as well as the market value of client assets—and can be evaluated by the Board empirically against publicly available market data and each institution's existing reporting data.[17]

Net flows

Fee-based asset net flows (net flows) for a wealth management franchise can be reliably projected for each individual firm based on recently observed evidence. Net flows are driven more by new asset gathering practices at each firm rather than by macroeconomic conditions; firms that have expanding franchises will continue to expand even in challenging markets. For example, Morgan Stanley Wealth Management observed fee-based asset net inflows of over $18.4 billion during the Q1 2020 COVID stress, which exceeded the $14.8 billion in net inflows from Q1 2019.[18] The Board could incorporate a reasonable simplifying assumption that net flows will remain constant in the projection period with the trailing four-quarter average of actual net flows. This assumption would also be consistent with the fact that dividends and interest are paid on client assets, which increases clients' investing capacity.

Incorporating net flows in this manner would also balance other conservative choices in the design of the macroeconomic scenario. Insofar as the Board calibrates the severely adverse scenario at or beyond historically observed post-World War II recession evidence, a static view of client assets will not adequately capture a business line's resilience if it can reliably be expected to generate inflows during the projection period. Similarly, a static assumption will also overestimate profitability for a business line that is unable to generate positive net flows. Institution-specific net flows can be calculated based on a four-quarter trailing average.

Market performance

The Board's macroeconomic scenario utilizes projections of economic variables to inform revenue estimates. To estimate market-driven changes in fee-earning client assets, we recommend the following illustrative formula:

$$\boldsymbol{Market\ Growth_t} = \ln\left(\frac{\boldsymbol{Fee\ Earning\ Client\ Assets_t\ -\ Net\ Flows_t}}{\boldsymbol{Fee\ Earning\ Client\ Assets_{t-1}}}\right)$$

[17] See FR Y-14Q Schedule G.3, line item 37 (ending client assets); FR Y-14Q Schedule G.3, line item 38 (net flows).
[18] MS Q1 2020 Form 10-Q, p. 11.

The market growth forecast should also incorporate market data variables. We recommend use of ordinary least square calculations for the BBB to 10Y Treasury Spread and Dow Jones, as reflected in this illustrative calculation:

$$\boldsymbol{Market\ Growth_t = \alpha + \beta_1 \Delta(BBB\ to\ 10Y\ Treasury\ spread_t) + \beta_2 \Delta \ln\ (Dow\ Jones_t) + \varepsilon_t}$$

Here, "alpha" is equal to the formula constant, "beta" is equal to the coefficient on the macro variable, and "epsilon" is equal to the error term.

Fee ratio

To calculate PPNR reliably, projected fee-earning client asset values must be multiplied by an institution-specific fee ratio. Firms' business lines should be expected to have variable fee ratios reflecting institution-specific client service models and product diversification. Institution-specific fee ratios can be calculated based on a four-quarter trailing average using this illustrative formula:

$$\boldsymbol{Fee\ Ratio_t = \frac{1}{4}\sum_{i=0}^{3}\left(\frac{WM\ revenues\ (Line\ 19B)_{t-i}}{Fee\ Earning\ Client\ Assets\ (Line\ 37)_{t-i}}\right)}$$

This approach is conservative because it incorporates only asset value projections and does not estimate increases in transactional-based revenues, even though such revenues are likely to be resilient in variable market conditions as investors reposition their portfolios.

Total wealth management revenue can then be projected through the following steps:

1. Adjust the quarter's starting client asset levels to reflect market performance.
2. Adjust the results of the first step to incorporate net flows.
3. Average each quarter's starting and ending client asset values to arrive at average client assets for the quarter. This is a conservative modeling choice because clients pay fees on a one-month delay (e.g., fees paid in Q1 are based on ending client balances from December, January and February, so Q1 revenues benefit from the higher pre-stress jump-off values).
4. Multiply the output by the calculated fee ratio.

Efficiency ratio projections should incorporate firm-specific fixed effects

There is a strong relationship between revenues and certain types of expenses, so using an efficiency-ratio based approach to forecasting expenses has an empirical foundation. For example, this linkage manifests both through compensation expenses (e.g., employee compensation declines predictably with revenue declines, particularly for a wealth management business line with a largely formulaic compensation structure) and through operational expenses (e.g., brokerage and clearing fees decline predictably with revenue declines associated with lower client execution volumes).

The proposed PPNR Model is an improvement over prior models that projected expenses independently from revenues. However, it still requires adjustments to achieve accurate efficiency ratios. For example, the coefficients in the proposed PPNR Model indicate that it heavily penalizes firms that

have higher concentrations in wealth management: only investment banking, asset management, and "miscellaneous" revenues are penalized more.[19]

Under the proposed PPNR Model, a hypothetical firm generating only wealth management revenues would have an efficiency ratio above 100% across the entire forecast horizon, whereas another hypothetical firm generating only credit card fee revenue would have a negative efficiency ratio.

The projected efficiency ratio is a function of three inputs: (i) the intercept term (coefficient = 126.967), (ii) the time trend (coefficient = -0.923), and (iii) the historical revenue distribution (nine coefficients, each representing the relative difference to the reference category of "miscellaneous" revenue).[20] The combined contribution of the intercept plus time trend is between 126.044 (in the first projection quarter) and 118.660 (in the ninth quarter). The coefficient on wealth management revenues is -0.166, so a firm with 100% wealth management revenues would therefore have a minimum efficiency ratio of 102.06 (i.e., the combined intercept and time trend impacts, plus 100 times the wealth management coefficient), which only occurs in the ninth quarter. In contrast, the coefficient on credit card loan noninterest income is -1.374; using the same math, the worst efficiency ratio experienced by a credit card-only firm would be -11.356 (occurring in the first projection quarter). While the PPNR Model imposes an efficiency ratio floor of zero on a negative projection,[21] the miscalibration of the wealth management coefficient leads to extreme differences in outcomes in this illustrative example of hypothetical monoline businesses.

We have identified two technical approaches for improving efficiency ratio estimates. The firm-specific fixed effects approach could be implemented by the Board by relying on existing data reporting and could be implemented in time for 2027 CCAR; the increased model granularity approach would require changes to reporting forms to implement.

Firm-specific fixed effects approach

The proposed PPNR Model includes an assumption that all businesses of the same type have the same efficiency ratio, irrespective of the firm. In practice, efficiency ratios vary significantly for a range of reasons, including institution-specific management practices and technology investments. The proposed PPNR Model attempts to capture these effects by incorporating historical actual revenue shares across 10 key categories as model variables. However, replacing these variables with a firm-specific fixed effects term—i.e., using a Boolean variable in the regression to capture the recent performance of each firm—would more accurately capture firm-by-firm distinctions in expense structures. These fixed effects terms could be calibrated based on the most recent data submissions with longer time series data used to inform the overall shape of the efficiency ratio projection.

The Board has utilized a similar fixed effects approach in other contexts, including in prior models that relied on FR Y-9C reporting. Utilizing a firm-specific fixed effects term in this context

[19] PPNR Model, p. 255.
[20] PPNR Model, p. 255.
[21] PPNR Model, p. 249.

should produce industry-level projections broadly similar to those generated by the proposed PPNR Model but with more accurate and reliable projections for each individual firm.

Increased model granularity approach

In parallel, the Board should increase the granularity of data collected in reporting templates to enable more accurate and specific modeling of NIE and non-interest income by firm. While this approach has the disadvantage of requiring additional data collection and would require additional time to propose and finalize changes to FR Y-14 reporting forms, it would enable more empirical PPNR forecasts based on firm-specific data across key revenue and expense drivers. Reporting changes under this approach would focus on controllable NIE items that are not identifiable discretely in existing reporting templates. Once data templates are revised in this manner, the Board would have a more specific, empirical basis for forecasting NIE and non-interest income by firm to construct independent models that link variable expenses and revenues.

Recommended revisions to FR Y-14 reporting templates include adding line items to capture brokerage, clearing and exchange expenses; information processing and communications; transaction taxes; and carried interest.

CCAR models should eliminate double-count losses in PPNR and "other losses / gains" calculations

Under the current framework, CCAR may result in "double counts" across PPNR and "other losses / gains" through inclusion of HFS/FVO loans and PE-related data in both methodologies. The extent of any such double counts is difficult to confirm based on information disclosed by the Board but, in concept, the issue arises because HFS/FVO and PE losses are included in historical FR Y-14A schedules for PPNR projections even though such losses may be separately included in projected "other losses / gains" in the Board's CCAR results. We recommend that the Board confirm in final models that such losses are not separately captured in both PPNR estimates and other losses / gains calculations.

The Federal Reserve should resolve this double count by excluding HFS/FVO and PE losses from PPNR. In practice, the elimination of double counts for PE losses can be achieved by excluding losses reported on line item 17 in FR Y-14A Schedule A.7.a. For HFS/FVO loans, loan projections are incorporated across several line items but, again, reported losses can be identified and excluded from PPNR.

CCAR models should eliminate double-count losses in PPNR and GMS calculations

We support the Board's efforts to improve the accuracy, efficiency and transparency of CCAR modeling practices. To fulfil these objectives, we recommend that the Board explicitly and directly include an expanded methodology to eliminate double-count losses in PPNR and GMS calculations.

The Board's PPNR documentation explains that, "[i]n modeling pre-provision net revenue, the Board makes adjustments to eliminate or minimize potential double-counting of losses."[22] It is unclear, however, how such adjustments are, in practice, given effect. Moreover, the Board's modeling choices make it more likely that double counts will occur in some trading portfolios.

The underlying issue arises because of data characteristics and modeling choices in PPNR and GMS models. It is not feasible to remove historic MTM losses from the FR Y-14A data series; absent MTM movements, trading businesses would be expected to generate higher revenues in periods of stress as spreads widen and volumes increase. Replacing the proposed sales and trading PPNR methodology with a simple four-quarter trailing approach would result in projections that are transparent, seasonally neutral, easy to implement with current data collections, and conservatively do not capture the countercyclical benefit associated with higher volumes and spreads.

Separately, however, the GMS imposes significant losses on the same trading businesses. As a result, the projections incorporate the effect of trading losses in both PPNR and the GMS. These modeling choices do not appear to be logical or reconciled with one another.

The PPNR Model should not be calibrated based on forecast data submissions dating back to 2014; instead, the most recent five years of data would be a more reliable foundation

The Board has proposed to calibrate the PPNR Model based on firms' data submissions from the 2014-2024 stress testing cycles.[23] We respectfully encourage the Board to instead use the most recent five-year period, for three reasons.

First, PPNR modeling techniques have improved significantly in recent years. In 2014, PPNR modeling was in its infancy and some firms, including Morgan Stanley, had not yet fully developed robust quantitative PPNR models. Calibration of supervisory models with more recent data would incorporate more accurate PPNR methodologies and more relevant data reporting.

Second, firms' business models have evolved since 2014. For example, Morgan Stanley Wealth Management's net revenues grew from $14.9 billion in 2014 to $31.8 billion in 2025, reflecting not only the maturation and deepening of core activities but also expansion of products and services.[24] Other large U.S. banking organizations similarly reshaped business strategies in recent years.[25] Calibration of the PPNR Model based on a more recent rolling time series would better capture relevant business activities in the U.S. banking sector.

Third, to the extent the Board in the future seeks to revalidate PPNR methodologies it could use a future five-year data series, which would incorporate the most current modeling practices and business

[22] PPNR Model, p. 7 n. 2.
[23] PPNR Model, p. 239.
[24] Morgan Stanley, Financial Supplement – 4Q 2014 (link), p. 8; MS 2025 Form 10-K, p. 27.
[25] See, e.g., Morgan Stanley Research, "Citigroup Inc.: Key Takeaways from Our Meeting with the CEO, CFO, and Head of USPB: More to Come" (Nov. 24, 2025) (link) ("Citi has made large, transformative progress towards medium-term targets set at its last firm-wide investor day in 2022 . . . ."); Wall Street Journal, "JPMorgan Case Reaches Deal to Take Over Apple Credit Card," (Jan. 7, 2026) (link) (explaining Goldman Sachs' exit from consumer lending).

model changes. Using the most recent five years of data now would provide a reliable foundation for evaluating PPNR Model changes for 2027 and establish a precedent for similar future reviews and recalibrations.

Non-interest revenue models should incorporate a zero floor

The Board has acknowledged that the proposed "discount factor" approach in the PPNR Model will lead to unintuitive results in cases where starting revenues are negative.[26] We agree with the Board's concern in this case. A practical solution would be to floor revenues at zero, which would be conservative since material negative values can be driven by countercyclical items (e.g., DVA) that would be expected to become positive in periods of severe stress.

The PPNR Model should be reconciled with anticipated future changes to the Board's regulatory capital framework

Vice Chair for Supervision Bowman has indicated that the Board intends to issue a new proposal implementing the revised Basel Accord in the United States.[27] A key question in any future proposal is how Operational Risk standards codified in risk-weighted assets ("**RWAs**") will be reconciled with PPNR calculations that include operational loss estimates. Our comments in this letter are focused on the PPNR Model specifically, but a coherent capital framework requires future reconciliation of PPNR and Operational Risk RWAs.

[26] PPNR Model, p. 246, Question A197.

[27] See Statement by Michelle W. Bowman before the U.S. House of Representatives Financial Services Committee (Dec. 2, 2025), p. 5 (link) ("Finalizing Basel III is an important act of closure for the banking sector, reducing uncertainty and providing clarity on capital requirements, enabling banks to make better-informed business and investment decisions.").

Appendix 2: GMS Model Comments

We support the Board's proposed liquidity horizon standards

We support the Board's proposal to reduce GMS liquidity horizons. The revised liquidity horizons will more accurately simulate trading portfolio shocks that could arise in a single quarter, improving the conceptual clarity of CCAR by avoiding incorporation of "upfront" losses that rely on multi-quarter trading shock calibrations.

Shortened liquidity horizons should also have the effect of reducing year-over-year volatility in GMS results and should make the occurrence of "atypical" outcomes less common, since the directionality of a particular firm's trading portfolio will have less magnified effects when subjected to shorter liquidity horizons. As proposed, the liquidity horizons also retain significant severity and risk capture, ensuring that the GMS will serve as a credible component of supervisory stress testing.

The Board should retain a single-scenario, single-date GMS approach aligned with the current annual window

We recommend that the Board retain its current single-scenario, single-date GMS approach. While GMS results have historically evidenced some year-over-year volatility and inconsistency in risk capture across firms, these weaknesses may be partially remedied by the proposed shortened liquidity horizons.

While expanding the GMS to include multiple scenarios would, in concept, permit expanded testing of firms' trading portfolios, we believe the supervisory and risk management benefits of such expansion would be outweighed by operational burdens. Conducting GMS is a data-intensive exercise with voluminous controls and data checks; even the current once-a-year approach requires significant focus and investment by the Board and firms. The Board should first assess whether shortened liquidity horizons adequately address GMS concerns before making a significant operational change to a multiple-scenario GMS.

If the Board adopts a multiple-scenario GMS, the revised approach should be a two-scenario, single-date approach

As explained above, we support continued use of a single-scenario, single-date GMS. If, however, the Board imposes a multiple-scenario GMS, we encourage adoption of a two-scenario, single-date approach.

A single as-of date would mitigate operational burdens associated with two scenarios, as the same data collections, processes, and controls could support two scenarios for the same date. Performing two scenarios on the same date would also permit alternative supervisory testing of a portfolio's directionality; for example, a portfolio with a "rates up" directionality could be tested against both "rates up" and "rates down" shocks. Performing the two scenarios independently would ensure that GMS performs its purpose of stressing firms' trading portfolios against plausible but severe market conditions.

Any expansion of the GMS to include two scenarios should, however, be paired with operational adjustments to account for the increase in burdens on the Board and firms. If it adopts any form of a

multiple-scenario GMS, the Board should place limitations, by rule, on the use of exploratory scenarios, as alternative trading market forecasts could be tested through the use of multiple scenarios. Similarly, the Board should take deliberate efforts to reduce data collections in the first-day letters and similar examination exercises.

The GMS should be reconciled with anticipated future changes to the Board's regulatory capital framework

As noted earlier, the Board has signaled that it intends to issue a revised regulatory capital proposal in the coming months. When proposing new Market Risk RWAs, the Board should deliberately seek to reconcile the objectives and technical approaches of the GMS and the Fundamental Review of the Trading Book, each of which is designed to test capital adequacy in trading portfolios. Shortening GMS liquidity horizons is a positive initial step toward such reconciliation, but a coherent approach requires full consideration, at both the consolidated firm and product levels, of the mechanics and calibrations of these two frameworks and their interactions with each other.

ABLs should receive a specific, reduced LGD as compared with other secured loans

As proposed, the Corporate Model classifies ABLs together with first-lien secured loans, despite important differences in the credit quality of these product categories.[28] The proposed Corporate Model does not capture the distinct risk characteristics of a broad range of ABL structures, including lending secured by real assets (e.g., equipment), reserve-based lending, and securitization-like structures that are not treated as securitizations under the Board's regulatory capital rules. These facilities benefit from strong structural credit protections—such as borrowing-base mechanics, frequent collateral monitoring, and collateral top-up requirements—that have historically resulted in materially higher recoveries in default. Consistent with this evidence, third-party data indicate that ABL recoveries are significantly higher than for other secured loans.[29] ABLs are more resilient in stressed markets, which justifies application of a lower LGD in the Corporate Model.

FR Y-14Q reporting forms already include an ABL flag, making it possible for the Board to identify ABLs within the broader population of secured loans without additional operational burden. Accordingly, an ABL-specific LGD can be implemented by relying on ABL "flag" reporting and adding an additional binary factor in the Corporate Model to reduce the LGD for these facilities. This factor could be calibrated based on historical data collected by the Board or from rating agencies or other third parties. Over time, the Board could consider reporting enhancements, such as imposing more specific technical criteria for use of the ABL flag, but such potential enhancements should not prevent near-term reliance on existing reporting.

The Board should release information to support analysis of what adjustments, if any, are necessary to address methodological shortcomings related to HFS and FVO portfolios

The Board should release more information about the methodology applied to calculate losses in the HFS and Fair Value Option FVO portfolios. The Enhanced Transparency Proposal and related documentation do not include sufficient detail to enable commentators to analyze and comment on these loss assumptions. Existing disclosures support an inference that the spreads applied to high-yield loans are too severe, relative to observed market evidence, or that the use of linear spread sensitivities may be overly conservative and inaccurate when considered against stress period data. We encourage the Board to release more information on HFS and FVO portfolio modeling to enable feedback on the complete record.

The first step in addressing this issue is release of more comprehensive information permitting commenters with necessary visibility into modeling assumptions. The Board provided the HY Corporate bond OAS formula and drivers but did not disclose coefficient estimate values, which are necessary to

[28] See Board, Credit Risk Models, Oct. 2025 (Updated Jan. 2026), which includes the corporate model ("**Corporate Model**").

[29] See, e.g., Fitch, U.S. Leveraged Finance Restructuring Series: Revolving Credit Facility Performance in Bankruptcy (Nov. 25, 2024) (link).

forecast the HY Corporate Bond OAS variable.[30] In addition, the Board indicated that manual overrides are also applied to impose a floor on the projections based on minimum value observed in the historical time series.[31]

Separately, the Board disclosed the formulas and coefficient estimates for rating-specific corporate spread projections, indicating that the HY Corporate OAS forecast is a required input for modeling non-investment-grade spreads.[32] Without this input, BB, B, and CCC spread projections cannot be derived. In summary, the absence of disclosed HY Corporate Bond OAS coefficients prevents firms from forecasting this variable, deriving BB/B/CCC spreads, and fully understanding these important projections and their potentially material mark-to-market impact.

[30] Board, Supervisory Stress Test Model Documentation: Market Risk Models, Oct. 2025 (Updated Jan. 2026) ("**Market Risk Models**") (link), p. 292, Eq. H-1; p. 294, Fig. H-1.
[31] Market Risk Models, p. 296.
[32] Market Risk Models, p. 144, Eq. C-7; p. 145, Fig. C-2.