



BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM
WASHINGTON, DC 20551

September 4, 2020

Mr. David M. Solomon
Chief Executive Officer
The Goldman Sachs Group, Inc.
200 West Street
New York, NY 10282

Subject: Response to request for reconsideration of the stress capital buffer requirement, pursuant to the Board's capital plan rule

Dear Mr. Solomon:

This letter is in response to the request by The Goldman Sachs Group, Inc. ("Goldman Sachs"), for reconsideration of the stress capital buffer requirement provided to Goldman Sachs by the Board on June 25, 2020.¹ For the reasons stated below, the Board has affirmed the stress capital buffer requirement previously provided to Goldman Sachs.² In addition, with respect to the request by Goldman Sachs for an informal hearing in connection with the request for reconsideration, the Board has not ordered an informal hearing.

I. Background

The Board's capital plan rule³ establishes the Board's process for determining the stress capital buffer requirement applicable to a firm subject to the capital plan rule. Pursuant to that rule, the Board generally will provide a firm with notice of its stress

¹ This letter supersedes the letter, dated August 7, 2020, from Margaret McCloskey Shanks, Deputy Secretary of the Board, to Mr. David M. Solomon.

² As noted below, the final stress capital buffer requirement for Goldman Sachs reflects corrected stress test results, as updated on September 4, 2020.

³ 12 CFR 225.8.

capital buffer requirement by June 30 of each year in which the firm submits an annual capital plan.⁴ On June 25, 2020, the Board provided Goldman Sachs with notice that its stress capital buffer requirement associated with its 2020 annual capital plan submission is 6.7 percent.⁵

The capital plan rule permits a firm to request reconsideration of the stress capital buffer requirement within 15 calendar days of receiving notice of the requirement.⁶ Goldman Sachs was granted a five-day extension to request reconsideration⁷ and submitted a request for reconsideration on July 15, 2020. A request for reconsideration may include a request for an informal hearing on the firm's request for reconsideration.⁸ Goldman Sachs' request for reconsideration included a request for an informal hearing. The capital plan rule generally provides that the Board will notify a firm of the Board's decision to affirm or modify the firm's stress capital buffer requirement within 30 calendar days of receipt of the firm's request for reconsideration, or within 30 days of the conclusion of an informal hearing regarding such a request.⁹

In each year in which a firm submits an annual capital plan, the Board generally will provide the firm with a final stress capital buffer requirement, as well as confirmation of the firm's final planned capital distributions for that year, by August 31.¹⁰ Unless otherwise determined by the Board, the final planned capital distributions and final stress capital buffer requirement for a given year become effective October 1 of that year.¹¹ A stress capital buffer requirement that becomes effective will remain effective until superseded.¹²

⁴ 12 CFR 225.8(h)(1).

⁵ See email regarding 2020 CCAR Results (June 25, 2020).

⁶ 12 CFR 225.8(h)(2)(i) and (j)(2).

⁷ Letter from Ann Misback, Secretary of the Board, to Luigi L. De Ghenghi, Esq., Davis Polk & Wardwell LLP (July 8, 2020).

⁸ 12 CFR 225.8(h)(3)(ii).

⁹ 12 CFR 225.8(j)(5)(ii).

¹⁰ 12 CFR 225.8(h)(4)(i).

¹¹ 12 CFR 225.8(h)(4)(ii)(A).

¹² 12 CFR 225.8(h)(4)(ii)(B).

II. Stress Testing Framework

The stress capital buffer requirement is established based, in part, on the results of a supervisory stress test conducted by the Board. Specifically, a firm's stress capital buffer requirement is the greater of 2.5 percent or the following calculation: (1) the difference between the firm's starting and minimum projected common equity tier 1 (CET1) capital ratios under the severely adverse scenario in the Board's supervisory stress test plus (2) the sum of the dollar amount of the firm's planned common stock dividends for each of the fourth through seventh quarters of the planning horizon¹³ as a percentage of risk-weighted assets.¹⁴ The stress capital buffer requirement provided to Goldman Sachs on June 25, 2020, was calculated based on 2020 supervisory stress test results released by the Board.¹⁵

¹³ The planning horizon is the period of at least nine consecutive quarters over which the relevant projections extend, beginning with the quarter preceding the quarter in which the firm submits its capital plan.

¹⁴ 12 CFR 225.8(f)(2).

¹⁵ See Board of Governors of the Federal Reserve System, *Dodd-Frank Act Stress Test 2020: Supervisory Stress Test Results* (June 2020), available at <https://www.federalreserve.gov/publications/files/2020-dfast-results-20200625.pdf>. On February 5, 2019, the Board released materials intended to increase the transparency of the stress testing program. See <https://www.federalreserve.gov/newsevents/pressreleases/bcreg20190205a.htm>. First, the Board updated the Policy Statement on the Scenario Design Framework for Stress Testing ("Scenario Policy Statement") to provide additional information regarding the path of home price variables, in particular, reducing uncertainty about the path of these variables in the severely adverse scenario. Second, the Board adopted a final Stress Testing Policy Statement to provide additional information about the Board's principles and policies with regard to the development and validation of supervisory stress test models. See 12 CFR part 252, Appendix A. As described in the Stress Testing Policy Statement, material changes to the supervisory stress test models are phased in over two years to reduce year-over-year volatility stemming from updates to the supervisory models. The Stress Testing Policy Statement defines a model change as highly material if its use results in a change in the CET1 ratio of 50 basis points or more for one or more firms, relative to the model used in prior years' supervisory exercises. See 12 CFR 252, Appendix B 2.3. This approach contributes to the stability of the results of the supervisory stress test by ensuring that changes in model projections primarily reflect changes in underlying risk factors and scenarios, year over year. Third, the Board provided additional information about the models used in the supervisory stress test. See 84 Fed. Reg. 6784 (February 5, 2019). The Board is committed to continuing to provide additional information, including modeled loss rates by loan and borrower characteristics,

The results of the Board's supervisory stress tests are projected using a set of models developed or selected by the Federal Reserve that take as inputs (1) the supervisory scenarios created by the Federal Reserve and (2) firm-provided data on the firm's financial condition and risk characteristics. To provide firms and the public with greater transparency regarding the Board's process for designing supervisory scenarios for stress testing, in 2013 the Board finalized the Scenario Policy Statement.

Consistent with the principles described in the Stress Testing Policy Statement, the Federal Reserve designed the system of models so they would result in projections that are (1) from an independent supervisory perspective; (2) forward-looking; (3) consistent and comparable across covered companies; (4) generated from simple approaches, where appropriate; (5) robust and stable; (6) conservative; and (7) able to capture the effect of economic stress.¹⁶

The Federal Reserve's models rely on detailed portfolio data provided by firms but generally do not rely on models or estimates provided by firms, consistent with the modeling principle that emphasizes an independent perspective.

The Federal Reserve generally develops its models under an industry-level approach that is calibrated using data from many financial institutions. This approach reflects modeling principles that favor models resulting in consistent, comparable, and forward-looking projections. The Federal Reserve models the response of specific portfolios and instruments to variations in macroeconomic and financial scenario variables such that differences across firms are driven by differences in firm-specific input data, as opposed to differences in model parameters and specifications. As a result, two firms with the same portfolio receive the same results for that portfolio in the supervisory stress test, facilitating the comparability of results. In addition, the industry-level approach promotes a forward-looking stress test, as it results in models that do not assume that historical patterns will necessarily continue into the future for individual

about its stress test models, as it has done most recently for its corporate loan and credit card models.

¹⁶ See 12 CFR part 252, Appendix A.

firms. These policies also help to ensure that consistent and comparable supervisory models are forward-looking, robust, and stable.¹⁷

III. Discussion

As required by the Board's capital plan rule, Goldman Sachs' request for reconsideration of its stress capital buffer requirement included a detailed explanation of why it contends that reconsideration should be granted.¹⁸

To ensure that review of Goldman Sachs' request would be conducted with an independent perspective, a group of experts within the Federal Reserve System, who are independent of the staff who developed the models, analyzed the arguments made by Goldman Sachs in favor of reconsideration of its stress capital buffer requirement.¹⁹ With respect to each of the issues raised in the request of Goldman Sachs, the experts considered whether the request identified any errors in the firm's stress test results and whether each stress test model identified in the firm's request is operating as intended,

¹⁷ While the Federal Reserve limits the use of firm-specific fixed effects and the use of dummy variables indicating a loan vintage or specific year, it makes exceptions where appropriate. For example, the Federal Reserve may use firm-specific indicator variables, firm-provided estimates, or third-party models or data in instances in which it is not possible or appropriate to create a supervisory model for use in the stress test, including when supervisory data are insufficient to support an independently modeled estimate of losses or revenues. However, the Federal Reserve does not adjust supervisory projections for individual firms or implement firm-specific overlays in the supervisory stress test. This policy ensures that the supervisory stress test results are determined solely by supervisory models and firm-specific input data. The Federal Reserve has instituted a policy of not using additional input data submitted by one or more of the covered companies unless comparable data can be collected from all the firms that have material exposure in a given area.

¹⁸ See 12 CFR 225.8(j)(3)(i).

¹⁹ This group is composed of staff members not involved in supervisory modeling and subject-matter experts from across the Federal Reserve System. This group's model validation process includes reviews of model performance; conceptual soundness; and the processes, procedures, and controls used in model development, implementation, and the production of results. See Board of Governors of the Federal Reserve System, *Dodd-Frank Act Stress Test 2020: Supervisory Stress Test Methodology* at 7 (March 2020), available at <https://www.federalreserve.gov/publications/files/2020-march-supervisory-stress-test-methodology.pdf>.

within the bounds of the Board's published policies. The information in this letter regarding the Board's stress testing policies and supervisory modeling practices was previously publicly disclosed, consistent with the Board's practice to increase the transparency of the stress testing program.²⁰

In its reconsideration request, Goldman Sachs presents five arguments: (1) its projected trading revenue was unrealistic due to modeling assumptions; (2) its trading and compensation expenses were overstated, as they are not related to revenue; (3) its fair value option ("FVO") residential mortgage losses were overstated relative to risk profile; (4) its FVO syndicated loan losses were overstated due to lack of accounting for "flex" pricing; and (5) the pre-provision net revenue ("PPNR") model should be fully phased in. With respect to each of these arguments, the Board has assessed Goldman Sachs' stress test results and Federal Reserve models for errors. Through this assessment, the Board did not identify any errors in Goldman Sachs' stress test results and has determined that the models operated as intended, within the bounds of the Board's published policies.

As discussed above, Goldman Sachs' request for reconsideration included a request for an informal hearing. The Board has determined not to grant Goldman Sachs' request for an informal hearing regarding its request for reconsideration.²¹ The informal hearing process is intended to ensure that a firm is able to present its arguments to the Federal Reserve and to provide an opportunity for both the firm and the Federal Reserve to ask any questions regarding the request, including questions regarding disputed issues of material fact. Since the submission of Goldman Sachs' request, Federal Reserve staff has met with representatives from Goldman Sachs. The firm described its arguments for reconsideration in these meetings, and both the firm and Federal Reserve staff had the opportunity to ask questions. Federal Reserve staff also offered to hold additional meetings. In light of this process, the Board does not believe it is necessary to order an informal hearing regarding Goldman Sachs' request.

1. Projected Trading Revenue

First, Goldman Sachs argues that the Board's model appears to project lower trading revenue during heightened periods of volatility, which is unrealistic. The firm claimed that this may result from the dependence on data sourced from the FR Y-9C

²⁰ See supra note 15.

²¹ See 12 CFR 225.8(j)(4)(i) (providing that the Board has sole discretion regarding whether to order an informal hearing).

trading revenue line item, which combines activity-based trading revenue with mark-to-market position losses, which are already captured as part of the global market shock (the trading and counterparty component of the stress tests) (“GMS”).

For firms subject to the GMS, the Board models trading revenues in the aggregate as a function of stock market returns and changes in stock market volatility, and allocates revenues to each firm based on a measure of the firm’s market share. Firms’ trading revenues include both changes in the market value of trading assets and fees from market-making activities. Trading revenues for this group of firms are modeled using a median regression approach to lessen the influence of extreme movements in trading revenues and thereby mitigate the double-counting of trading losses that are captured under the GMS. With respect to the projection of trading revenue for Goldman Sachs in the 2020 stress tests, the Board has determined that it will follow its published principles for stress testing, including the principle of creating industry-level models, and not modify the existing results of these models. In particular, models used in the supervisory stress test are generally developed according to an industry-level approach, calibrated using data from many institutions. In this way, the Board ensures that differences across firms are driven by differences in firm-specific input data, as opposed to differences in model parameters or specifications.

2. Trading and Compensation Expenses

Second, the firm argues that trading expenses were inappropriately modeled for the industry using macroeconomic variables such as GDP growth. In addition, the firm asserted that the projections of compensation expense should more closely reflect the observed relationship between the firm’s compensation expense and its revenues, instead of the relationship with macroeconomic variables.

With respect to the modeling of trading expenses for Goldman Sachs in the 2020 stress tests, the Board has determined that it will follow its published principles for stress testing, including the principle of creating industry-level models, and not modify the existing results of these models. In particular, models used in the supervisory stress test are developed according to an industry-level approach, calibrated using data from many institutions. The models are designed to link most components of revenue and expense to macroeconomic variables. While for an individual firm the model may seem to improve by selecting different predictors, such as the amount of projected revenue, the Federal Reserve’s models are optimized to predict expenses across the entire industry. The Board’s non-interest expense models are not intended to capture the firm’s specific expense structure related to trading activities or the correlation of expenses to revenue.

3. FVO Residential Mortgage Losses

Third, the firm argues that its portfolio of FVO residential mortgage loans has experienced minimal losses since its inception, including through both the 2007-2008 financial crisis and the COVID event. The firm argues that the Board's approach does not provide the necessary detail to appropriately reflect the shorter duration and better credit quality of the portfolio. The firm suggested using loan-level data instead to model losses on this portfolio.

The Board's approach for calculating loss rates for mortgages in the FVO portfolio does not include credit characteristics present in the mortgage loss rate model. The Board calculates gains and losses on FVO retail loans using a duration-based approach. The model includes data on total loan balances, vintage, and loan type. It estimates losses as a function of duration, and quarterly changes in stressed spreads from the supervisory scenarios. The model was designed to capture the typical performance of these types of loans under stress. The Board has determined not to deviate from its model development practices with respect to calculating loss rates for mortgages in the FVO portfolio. The model is designed to balance the principles of simplicity, creation of industry-level models, and projection of impact under stress. Accordingly, the Board has determined that it will follow its published principles for stress testing, and not modify the existing results of its FVO model with respect to mortgage loss rates.

4. FVO Syndicated Loan Losses

Fourth, the firm argues that its portfolio of FVO syndicated loans includes a feature that allows the firm to adjust pricing when credit spreads widen. The firm argues that this feature is not captured in the current model. The Board's model projects losses based on the loan characteristics known at the time of the forecast. Future pricing options for syndicated loans are not provided at the time of the forecast, and the timing of the firm exercising the options would need to be forecasted to be included. Although some firms use pricing strategies to minimize losses, the Board has instituted a policy of not using additional input data submitted by one or more firms unless comparable data can be collected from all the firms that have material exposure in a given area. This promotes consistency across the stress test results of covered companies and conservative estimates of losses, and balances the principles of simplicity and projection of impact under stress. Accordingly, the Board has determined that it will follow its published principles for stress testing, and not modify the existing results of its FVO model with respect to syndicated loan losses.

5. *PPNR Model Phase-In*

Finally, the firm argues that a recent change to the PPNR model intended to diminish the degree to which quarterly volatility in historical PPNR affects projections was helpful because of the seasonality of firm behavior in the fourth quarter. While the Stress Testing Policy Statement notes that the Federal Reserve will phase in material model changes over two years, the firm argues that it is more appropriate to immediately phase this change in because it reduces volatility. The Board has determined that it will follow its published principles for stress testing, and not modify the existing results of its PPNR model. As discussed above, the Federal Reserve's policy is to phase in material model changes over two years, which contributes to the stability of the results of the supervisory stress test.

IV. Conclusion

After consideration of the Board's stress testing policies and all relevant facts, including the information provided in the request, and consistent with the Board's regulations, the Board has determined to affirm the stress capital buffer requirement provided to Goldman Sachs on June 25, 2020. The Board notes that it is focused on continuously improving the stress testing framework, including the Board's supervisory models. With regard to the arguments raised by Goldman Sachs in the request for reconsideration, the Board has directed Federal Reserve staff to investigate and address, as appropriate, the incorporation of portfolio credit quality in modeling losses on loans that use FVO accounting to see if any future improvements can be made. In addition, the Board has directed Federal Reserve staff to explore potential improvements with regard to the granularity of the approach to estimating trading revenues for firms subject to the GMS, estimating expenses based on revenues instead of macroeconomic variables, and using flexible pricing options in projecting losses. In evaluating any of its supervisory models, the Board follows the processes for development, implementation, and validation of its supervisory models, as outlined in the Board's Stress Testing Policy Statement.

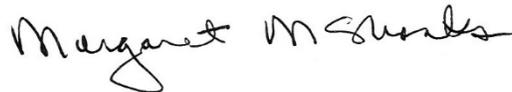
The final stress capital buffer requirement for Goldman Sachs is 6.6 percent.²² The Board hereby confirms that the planned capital distributions Goldman Sachs submitted as part of its 2020 capital plan submitted on April 5, 2020, incorporating any adjustments made pursuant to 12 CFR 225.8(h)(2), are final. Goldman Sachs' final stress capital buffer requirement and final planned capital distributions are effective October 1,

²² This final stress capital buffer requirement reflects corrected stress test results for Goldman Sachs, as updated on September 4, 2020.

2020. The Federal Reserve supports banking organizations that choose to use their capital buffers to lend and undertake other supportive actions in a safe and sound manner.²³ When using their buffers, banking organizations may make capital distributions up to prescribed limits, which include automatic limitations in the capital framework, as well as any additional limitations determined by the Board.²⁴

Please contact Hillel Kipnis at (202) 452-2924 with any questions.

Sincerely yours,



Margaret McCloskey Shanks
Deputy Secretary of the Board

cc: Joanna de Plas, Officer
John Heinze, Officer
Lauren Hargraves, Senior Vice President
Federal Reserve Bank of New York

²³ See Interagency Statement on the Use of Capital and Liquidity Buffers (March 17, 2020), available at <https://www.federalreserve.gov/newsevents/pressreleases/bcreg20200317a.htm>.

²⁴ A “capital buffer” refers to capital held above regulatory minimum requirements. Banking organizations with regulatory capital ratios that are below their capital buffer requirement face gradual restrictions on capital distributions and discretionary bonus payments. See 12 CFR 217.11(c). These restrictions encourage banking organizations to conserve capital within the organization as they lend to households and businesses and as their capital levels approach minimum regulatory capital requirements. Capital buffers were designed to provide banking organizations with the means to support the economy in adverse situations and allow banking organization to continue to serve households and businesses.