The Goldman Sachs Group, Inc.

2016 Mid-Cycle Dodd-Frank Act Stress Test Disclosure

October 2016

2016 Mid-Cycle Dodd-Frank Act Company-Run Stress Test Disclosure for The Goldman Sachs Group, Inc.

Overview and Requirements

For the mid-cycle Dodd-Frank Act Stress Test (Mid-Cycle DFAST) currently completed in October of each year, The Goldman Sachs Group, Inc. (referred to herein as "Group Inc.," "we," "our," "us" or "the firm") is required to conduct stress tests under a set of internally developed macroeconomic scenarios (internal baseline, internal adverse and internal severely adverse). Stress testing is an integral component of our internal capital adequacy assessment. We incorporate the Dodd-Frank Act Stress Test (DFAST) into our internal processes to assess our capital adequacy and to ensure that the firm holds an appropriate amount of capital relative to the risks of our businesses.

The 2016 Mid-Cycle DFAST is not conducted under the Board of Governors of the Federal Reserve System's (Federal Reserve Board) Capital Plan Rule and is not part of the annual Comprehensive Capital Analysis and Review (CCAR) process. Accordingly, the Federal Reserve Board does not provide an objection or non-objection to an institution's Mid-Cycle DFAST results. Firms are required, however, to conduct the Mid-Cycle DFAST in accordance with the requirements of the Federal Reserve Board's DFAST rules.

We are required to calculate our 2016 Mid-Cycle DFAST results reflecting certain aspects of the Federal Reserve Board's revised risk-based capital and leverage regulations, subject to certain transitional provisions (Revised Capital Framework). These regulations are largely based on the Basel Committee's final capital framework for strengthening international capital standards (Basel III) and also implement certain provisions of the Dodd-Frank Act. The risk-based capital requirements are expressed as capital ratios that compare measures of regulatory capital to risk-weighted assets (RWAs).

The firm is required to calculate Common Equity Tier 1 (CET1), Tier 1 capital and Total capital ratios for all quarters of the planning horizon in accordance with the Standardized approach and market risk rules set out in the Revised Capital Framework (together, the Standardized Capital Rules). We are also required to calculate a Tier 1 leverage ratio for all quarters in the planning horizon, using the Revised Capital Framework definition of Tier 1 capital in the numerator and quarterly average adjusted total assets (which includes adjustments for certain capital deductions) in the denominator.

The planning horizon for the 2016 Mid-Cycle DFAST is the third quarter of 2016 through and including the third quarter of 2018.

Minimum Regulatory Capital Ratio Requirements

The table below presents the required minimum capital ratios for the firm over the planning horizon in the stress test:

	Minimum Capital Ratio
CET1 ratio	4.5%
Tier 1 capital ratio	6.0%
Total capital ratio	8.0%
Tier 1 leverage ratio	4.0%

Overview and Description of Group Inc.'s Severely Adverse Scenario

The firm's nine-quarter internally developed severely adverse scenario is characterized by a stressed global macroeconomic environment, including severe recessions in the U.S., Eurozone, U.K. and Japan and a mild recession in developing Asia. The scenario begins with a global market shock, which is a repricing of our trading and counterparty exposures. In addition to the global market shock, we include the impact of the default of a large counterparty during the first quarter of the planning horizon. The planning horizon includes a decline in gross domestic product (real GDP), a rising rate of unemployment, a low interest rate environment (including negative short-term interest rates), declining asset values and widening credit spreads across global economic regions. This is followed by a slow and partial recovery. We also incorporate a firm-specific event, which further reduces our franchise revenues.

In this scenario, we project variables across a range of macroeconomic indicators and asset classes that management determines are necessary to produce revenues, expenses, balance sheet and RWA projections. For example:

GDP and Unemployment. U.S. real GDP declines 7.5% over the first seven quarters of the planning horizon. From the trough in the first quarter of 2018, U.S. real GDP experiences growth of approximately 0.4% over the remainder of the planning horizon. The U.S. unemployment rate increases from 4.7% in the second quarter of 2016 to 10.7% by the end of the planning horizon.

Equity Markets and Volatility. Equity market indices experience sharp declines over the first five quarters of the planning horizon, with the S&P 500 Index decreasing 51% by the third quarter of 2017. The VIX Index increases from 16 to a peak of 74 in the first quarter of 2017. The S&P 500 Index partially recovers over the remainder of the planning horizon, ending 14% below the second quarter of 2016 starting point. The VIX Index gradually decreases to 20 over the remainder of the planning horizon.

U.S. Interest Rates and Credit Spreads. The 3-month Treasury (UST) yield declines to approximately (50) basis points by 4Q16 and remains at that level through the planning horizon. Additionally, the 10-year UST yield decreases by approximately 130 basis points to its trough in the fourth quarter of 2016 and stays at that level throughout the planning horizon. By the third quarter of 2017, U.S. investment-grade credit spreads widen by approximately 150 basis points above the second quarter of 2016 starting point and by the third quarter of 2017, U.S. high yield spreads widen by approximately 1,000 basis points. U.S. investment-grade and U.S. high yield spreads gradually contract over the remainder of the planning horizon, though they still remain higher than their second quarter of 2016 starting points.

Similarly, international economies experience declines in real GDP and equity markets, as well as widening credit spreads. In addition, to reflect recent events, the scenario incorporates the negative macroeconomic and market impacts caused by the policy uncertainty resulting from the outcome of the U.K.'s EU membership referendum vote.

Given the extensive use of fair value accounting in our balance sheet, we believe the inclusion of a global market shock is a meaningful way for us to stress our risks and exposures as significant and rapid changes in asset values are particularly impactful to our capital position. We choose a shock that we believe captures, and appropriately stresses, our material risk positions. Furthermore, as the scenario includes a severely adverse operating environment, characterized by further market deterioration in global asset values and a firm-specific event, we believe the scenario captures our idiosyncratic risks and significantly stresses our capital position. We believe our severely adverse scenario represents a low probability, but high impact scenario, though it does not reflect our forecast of likely macroeconomic conditions over the planning horizon.

Summary of Results

The table below presents the results of the firm's calculations under our severely adverse scenario over the planning horizon, including the global market shock and counterparty default scenario applied to our trading and counterparty exposures.

These results incorporate the following capital action assumptions, as prescribed by the Federal Reserve Board's DFAST rules:

- actual capital actions for the third quarter of 2016;
- for each of the remaining quarters in the planning horizon:
    - common stock dividends equal to the quarterly average dollar amount of common stock dividends that were paid in the fourth quarter of 2015 through and including the third quarter of 2016; and
    - payments on any other instrument that is eligible for inclusion in the numerator of a regulatory capital ratio equal to the stated dividend, interest, or principal due on such instrument during the quarter.

Based on the firm's severely adverse scenario, the most significant drivers of the firm's capital ratios over the planning horizon are:

- Pre-Provision Net Revenues (PPNR) over the planning horizon which reflect stress revenues and increased operational risk losses as a result of our severely adverse macroeconomic scenario, as well as the negative impact of an assumed firm-specific event that results in a reduction to our franchise revenues;
- Increased provisions and other losses in our loans and lending commitments; and
- Trading and counterparty losses and other losses, which include both the global market shock and the counterparty default scenario, are included in our net (loss)/income projections; the impacts of the global market shock are also reflected in our balance sheet and RWA projections;
- Further transition towards the fully phased in Standardized Capital Rules, as applicable.

These 2016 Mid-Cycle DFAST results are prepared based on our internal stress testing methodology and our internally developed severely adverse scenario, and therefore will not be comparable to the 2016 Annual DFAST results for the firm's calculations based on the Federal Reserve Board's supervisory severely adverse scenario and instructions.

2016 Mid-Cycle DFAST Results

Projected Capital Ratios, RWAs, Pre-Provision Net Revenues (PPNR), Losses, Net (Loss)/Income Before Taxes and Loan Losses

The Goldman Sachs Group, Inc. Estimates in Our Severely Adverse Scenario

These results are calculated using capital action assumptions required by the DFAST rules. All projections represent hypothetical estimates that involve an economic outcome that is more adverse than expected. These estimates are not forecasts.

Actual Q2 2016 and Projected Capital Ratios through Q3 2018 under Our Severely Adverse Scenario

	Actual	Stressed Capital Ratios	
	Q2 2016	Ending	Lowest
CET1 ratio (%) [1]	13.7	8.0	8.0
Tier 1 capital ratio (%) [1]	15.6	9.6	9.6
Total capital ratio (%) [1]	18.7	12.6	12.6
Tier 1 leverage ratio (%) [1]	9.1	6.1	6.1

[1] CET1, Tier 1 capital, Total capital and Tier 1 leverage ratios are calculated under the Standardized Capital Rules, subject to transitional provisions. The lowest calculated capital ratios from Q3 2016 to Q3 2018 are presented in the table.

Actual Q2 2016 and Projected Q3 2018 RWAs under Our Severely Adverse Scenario

	Actual	Projected
	Q2 2016	Q3 2018
	Standardized Capital Rules	
RWAs ($ in billions)	$519.0	$522.7

Projected Loan Losses by Type of Loan from Q3 2016 through Q3 2018 under Our Severely Adverse Scenario

	$ in billions[1]	Portfolio Loss Rates (%) [1]
Loan Losses	$5.0	7.7%
First Lien Mortgages, Domestic	0.0	0.0
Junior Liens and HELOCs, Domestic	0.0	0.0
Commercial and Industrial	2.2	10.0
Commercial Real Estate, Domestic	0.4	13.0
Credit Cards	-	-
Other Consumer	0.1	7.3
Other Loans	2.3	6.3

[1] Loan losses and average loan balances used to calculate portfolio loss rates exclude loans and lending commitments accounted for under the fair value option.

Projected PPNR, Losses and Net (Loss)/Income Before Taxes from Q3 2016 through Q3 2018 under Our Severely Adverse Scenario

	$ in billions	Percentage of Average Assets (%)
PPNR [1]	$5.5	0.7%
Other Revenue	-	
Less:		
Provision for Loan Losses	5.8	
Realized Losses/(Gains) on Securities	-	
Trading and Counterparty Losses [2]	20.5	
Other Losses/(Gains) [3]	3.2	
Equals:		
Net (Loss)/Income Before Taxes	(24.0)	(2.9)

[1] PPNR includes net revenues (revenues) and operating expenses (including operational risk events and other real estate owned costs).

[2] Trading and counterparty losses include mark-to-market losses, trading incremental default risk losses on positions held at fair value and changes in credit valuation adjustment (CVA) as a result of the global market shock and the impact of the counterparty default scenario. Subsequent trading incremental default risk and counterparty losses over the planning horizon are also included.

[3] Other losses/(gains) primarily reflects the impact of the global market shock on certain loans and lending commitments accounted for under the fair value option, as well as the projected change in the fair value of these loans and lending commitments based on our severely adverse scenario.

Material Risks Captured in the Stress Test

Market Risk. Market risk is the risk of loss in the value of our inventory, as well as certain other financial assets and financial liabilities, due to changes in market conditions. We employ a variety of risk measures to monitor market risk. We hold inventory primarily for market making for our clients and for our investing and lending activities. Our inventory therefore changes based on client demands and our investment opportunities. Our inventory is accounted for at fair value and therefore fluctuates on a daily basis. Categories of market risk include the following:

- Interest rate risk: results from exposures to changes in the level, slope and curvature of yield curves, the volatilities of interest rates, mortgage prepayment speeds and credit spreads;
- Equity price risk: results from exposures to changes in prices and volatilities of individual equities, baskets of equities and equity indices;
- Currency rate risk: results from exposures to changes in spot prices, forward prices and volatilities of currency rates; and
- Commodity price risk: results from exposures to changes in spot prices, forward prices and volatilities of commodities, such as crude oil, petroleum products, natural gas, electricity and precious and base metals.

Market risk is incorporated into our 2016 Mid-Cycle DFAST results via the global market shock and the severely adverse macroeconomic scenario. The global market shock is applied to our fair value positions with changes in the fair value being reflected in our revenue projections in the first quarter of the planning horizon.

In addition to the global market shock, trading incremental default risk losses are estimated over the planning horizon.

We further stress our positions based on the changes in macroeconomic variables and asset values over the planning horizon of our internally developed severely adverse scenario.

Credit Risk. Credit risk represents the potential for loss due to the default or deterioration in credit quality of a counterparty (e.g., an over-the-counter (OTC) derivatives counterparty or a borrower) or an issuer of securities or other instruments we hold. Our exposure to credit risk comes mostly from client transactions in OTC derivatives and loans and lending commitments. Credit risk also comes from cash placed with banks, securities financing transactions (i.e., resale and repurchase agreements and securities borrowing and lending activities) and receivables from brokers, dealers, clearing organizations, customers and counterparties.

Credit risk is incorporated into our 2016 Mid-Cycle DFAST results via the global market shock, the counterparty default scenario and under the severely adverse macroeconomic scenario. The global market shock includes counterparty credit losses (i.e., from credit valuation adjustments (CVA)). The counterparty default scenario includes counterparty credit losses due to defaults on OTC derivative and securities financing transactions and the default of a large counterparty. The global market shock and the counterparty default scenario are both recognized in the first quarter of the planning horizon. Projections for CVA and incremental credit default risk over the planning horizon are also included to capture the impact of losses due to the change in counterparty credit quality and correlated defaults under the severely adverse macroeconomic scenario.

Credit risk is also incorporated into our projections for changes in provisions and loan losses in our loans held for investment that are accounted for at amortized cost, net of allowance, (loans receivable) and related lending commitments. We utilize a model that estimates losses based on projections of exposure at default, loss given default, probability of default, industry classification, region and ratings migration for loans receivable in the accrual portfolio. We also include projections of estimated defaults and associated losses on our loans and lending commitments accounted for under the fair value option.

Operational Risk. Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. Our exposure to operational risk arises from routine processing errors as well as extraordinary incidents, such as major systems failures or legal and regulatory matters. Potential types of loss events related to internal and external operational risk include:

- Clients, products and business practices;
- Execution, delivery and process management;
- Business disruption and system failures;
- Employment practices and workplace safety;
- Damage to physical assets;
- Internal fraud; and
- External fraud.

Operational risk, including litigation-related losses, is incorporated into our 2016 Mid-Cycle DFAST results with losses estimated based on the firm's historical operational risk experience, relevant internal factors, scenario analysis, recent industry matters and the assumed conditions of the firm's severely adverse scenario. Operational risk losses are included within non-compensation expense projections over the planning horizon.

Liquidity Risk. Liquidity risk is the risk that we will be unable to fund the firm or meet our liquidity needs in the event of firm specific, broader industry, or market liquidity stress events. Liquidity is of critical importance to us as most failures of financial institutions have occurred in large part due to insufficient liquidity. Accordingly, we have in place a comprehensive and conservative set of liquidity and funding policies. Our principal objective is to be able to fund the firm and to enable our core businesses to continue to serve clients and generate revenues, even under adverse circumstances.

For purposes of the 2016 Mid-Cycle DFAST, we analyzed how we would manage our balance sheet through the duration of a severe crisis and we included assumptions regarding our ability to access the secured and unsecured funding markets to generate incremental liquidity. Our 2016 Mid-Cycle DFAST results took liquidity risk into account by projecting potential liquidity outflows due to our severely adverse scenario environment (e.g., draws on unfunded commitments and secured and unsecured funding roll-offs without replacement) and the impact of these outflows on our liquidity position and balance sheet.

Description of Our Projection Methodologies

PPNR. PPNR includes revenues and operating expenses.

Revenues. We project revenues for each of our four business segments: Investment Banking, Institutional Client Services, Investing & Lending and Investment Management.

When projecting segment revenues for these four segments, we utilize multiple approaches, including models based on regression analyses, management judgment and projecting the impact of re-pricing inventory due to the projected changes in asset values under the firm's severely adverse scenario. We also incorporate the impact of broader industry performance during historical stressed periods to help guide management judgment regarding our future performance in the assumed stressed operating environment. The projected revenues under the firm's severely adverse scenario are an aggregation of projected revenues for each of these business segments.

Additionally, we incorporate an impact to our franchise revenues resulting from the assumed firm-specific event as discussed above. The inclusion of a firm-specific event in our severely adverse scenario projections inherently incorporates some level of management judgment, specifically regarding the ways in which the event impacts our projected results. When assessing the impact of the firm-specific event on our results, we leverage multiple approaches, including assumed reductions in trading revenues, investment banking market share and assets under supervision.

We also use our judgment to reassess revenue projections to ensure reasonableness given assumed compensation levels and the associated impact on voluntary staff attrition over the planning horizon.

- **Investment Banking**
  The firm provides a broad range of investment banking services to a diverse group of corporations, financial institutions, investment funds and governments. Services include strategic advisory assignments with respect to mergers and acquisitions, divestitures, corporate defense activities, restructurings, spin-offs and risk management and debt and equity underwriting of public offerings and private placements, including local and cross-border transactions and acquisition financing, as well as derivative transactions directly related to these activities.

- **Institutional Client Services**
  The firm facilitates client transactions and makes markets in fixed income, equity, currency and commodity products, primarily with institutional clients such as corporations, financial institutions, investment funds and governments. The firm also makes markets in and clears client transactions on major stock, options and futures exchanges worldwide and provides financing, securities lending and other prime brokerage services to institutional clients.

- **Investing & Lending**
  The firm invests in and originates loans to provide financing to clients. These investments and loans are typically longer-term in nature. The firm makes investments, some of which are consolidated, directly and indirectly through funds and separate accounts that the firm manages, in debt securities and loans, public and private equity securities and real estate entities.

- **Investment Management**
  The firm provides investment management services and offers investment products (primarily through separately managed accounts and commingled vehicles, such as mutual funds and private investment funds) across all major asset classes to a diverse set of institutional and individual clients. The firm also offers wealth advisory services, including portfolio management and financial counseling and brokerage and other transaction services to high-net-worth individuals and families.

Expenses. Operating expense projections over the planning horizon include compensation and benefits and non-compensation expenses.

Compensation and benefits includes salaries, discretionary compensation, amortization of equity awards and other items such as benefits. Discretionary compensation is significantly impacted by, among other factors, the level of net revenues, overall financial performance, the structure of our share-based compensation programs and the external environment.

Non-compensation expenses include certain expenses that vary with levels of business activity, such as brokerage, clearing, exchange and distribution fees and market development costs. Non-compensation expenses also include expenses that relate to our global footprint and overall headcount levels. Such expenses include depreciation and amortization, occupancy and communication and technology costs.

In addition, non-compensation expenses include any projected impairments of non-financial assets as well as operational risk losses, including litigation reserves (and corresponding legal fees), business disruption costs, external fraud costs (including cyber-attack associated losses), internal fraud costs, execution/processing errors and damage to physical assets.

Provisions and Loan Losses. Provisions and loan losses are projected over the planning horizon using a comprehensive, model-based approach. The model estimates losses based on projections of exposure at default, loss given default, probability of default, industry classification, region and ratings migration for loans receivable and lending commitments in the accrual portfolio.

Trading and Counterparty Losses. Trading and counterparty losses include mark-to-market losses, trading incremental default risk losses on positions held at fair value and changes in CVA as a result of the global market shock, as well as the impact of our counterparty default scenario. Subsequent trading incremental default risk and counterparty losses over the planning horizon are also included. We use the firm's existing stress testing and risk management infrastructure to calculate the impact of the global market shock, the counterparty default scenario as well as trading incremental default risk and counterparty losses over the planning horizon.

Other Losses. Other losses primarily includes projected changes over the planning horizon in the fair value of certain loans and lending commitments accounted for under the fair value option, due to the global market shock, as well as the projected change in the fair value of these loans and lending commitments based on our severely adverse scenario.

Balance Sheet. Balance sheet projections are based on the macroeconomic environment and incorporate input from businesses on growth assumptions and planned activity, changes to carrying values as a result of marking our inventory to market, as well as management judgment as to how the firm would manage its balance sheet, funding and liquidity over the planning horizon.

We include the impact of the global market shock into the firm's balance sheet projections under our severely adverse scenario.

Capital and RWAs. Capital projections incorporate projected net earnings, other changes in equity including the impact of the third quarter of 2016 actual capital actions and assumed capital actions required by the DFAST rules and capital deductions. Projected RWAs reflect the impact of the macroeconomic environment; for example, changes in volatilities and credit spreads are incorporated into our calculation of projected RWAs. Additionally, projected RWAs and capital deductions are also impacted by the projected size and composition of our balance sheet over the planning horizon.

As noted above, we have calculated capital ratios under the Standardized Capital Rules, including transitional provisions where appropriate.