THE GOLDMAN SACHS GROUP, INC. 2017 RESOLUTION PLAN

Public Section

June 30, 2017

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Abbreviations

When we use the terms ''Goldman Sachs,'' ''GS Group,'' ''the firm,'' ''we,'' ''us'' and ''our'' in this document, we mean The Goldman Sachs Group, Inc. (Group Inc. or the parent company) and its consolidated subsidiaries.

When we use the term "the Agencies," we mean the Board of Governors of the Federal Reserve System (the "Federal Reserve Board") and the Federal Deposit Insurance Corporation (the "FDIC").

Unless otherwise specified, all financial information is as of, or for the year ended, December 31, 2016.

For convenience, we have compiled the following list of abbreviations; they have also been defined when first used in this document.

Certain Abbreviations Used:	
2015 Resolution Plan	*Plan for the rapid and orderly resolution of Goldman Sachs under the Bankruptcy Code that we submitted to the Agencies on June 30, 2015*
2016 Submission	*Submission to the Agencies on September 30, 2016, containing certain information about our resolution plan as required by the Agencies in the April 2016 Letter*
2017 Resolution Plan	*The present plan for the rapid and orderly resolution of Goldman Sachs under the Bankruptcy Code*
2017 Guidance	*"Guidance for 2017 §165(d) Annual Resolution Plan Submissions by Domestic Covered Companies that Submitted Resolution Plans in July 2015," a guidance document issued by the Agencies in April 2016*
April 2016 Letter	*Letter to Goldman Sachs dated April 12, 2016, in which the Agencies set out their findings regarding our 2015 Resolution Plan*
Capabilities	*The capabilities described in the 2017 Guidance that the Agencies expect us to have developed in order to demonstrate that we are able to mitigate any obstacles to the successful implementation of our preferred resolution strategy*
Funding IHC	*Goldman Sachs Funding LLC*
Funding Note	*The subordinated funding note, a component of the Capital and Liquidity Support Agreement, pursuant to which Group Inc. lends funds to the Funding IHC*
Our Board	*The Board of Directors of The Goldman Sachs Group, Inc.*

Participating material entities	*Those material operating entities and material service entities that benefit from financial support under the Capital and Liquidity Support Agreement; these entities are not projected to enter bankruptcy or similar proceedings*
Participating material operating entity	*A participating material entity that is an operating entity*
Participating material service entity	*A participating material entity that is a service entity*
Preferred resolution strategy	*The strategy by which, at the end of the Runway, Group Inc., J. Aron and Company LLC and Goldman Sachs Lending Partners LLC enter Chapter 11 bankruptcy proceedings while other material entities continue outside proceedings and wind down over time*
Resolution Steering Group	*Recovery and Resolution Planning Steering Group*
Revolver	*The revolving committed credit facility, a component of the Capital and Liquidity Support Agreement, pursuant to which the Funding IHC lends funds to Group Inc.*
Runway	*The ten-day period immediately preceding Group Inc.'s bankruptcy filing*
CLSA	Capital and Liquidity Support Agreement
FMU	Financial Market Utility
GCLA	Global Core Liquid Assets
ISDA	International Swaps and Derivatives Association
MIS	Management Information Systems
RCAP	Resolution Capital Adequacy and Positioning
RCEN	Resolution Capital Execution Need
RLAP	Resolution Liquidity Adequacy and Positioning
RLEN	Resolution Liquidity Execution Need
RWAs	Risk-Weighted Assets
SLA	Service Level Agreement
TLAC	Total Loss Absorbing Capacity

Taxonomy of Goldman Sachs in our Resolution Plan

Material Entities		Participating Material Entity[1]	Acronym	Country or State of Incorporation
Covered Company	The Goldman Sachs Group, Inc.	No	Group Inc.	Delaware
Material Operating Entities	Goldman Sachs & Co. LLC	Yes	GS&Co.	New York
	Goldman Sachs International	Yes	GSI	England
	Goldman Sachs Bank USA	Yes	GS Bank	New York
	J. Aron & Company LLC	No	JANY	New York
	Goldman Sachs Japan Co., Ltd	Yes	GSJCL	Japan
	Goldman Sachs International Bank	Yes	GSIB	England
	Goldman Sachs Asset Management, L.P.	Yes	GSAM	Delaware
	Goldman Sachs Asset Management International	Yes	GSAMI	England
	Goldman Sachs Lending Partners LLC	No	GSLPtnrs	Delaware
Material Service Entities	Goldman Sachs Funding LLC	No	GFLC[2]	Delaware
	Goldman Sachs Services Private Limited	Yes	GSSE	India
	Goldman Sachs Services LLC	Yes	GSPW	Delaware
	Goldman Sachs Property Management	Yes	GSPM	England
	Goldman Sachs Property Management USA LLC	Yes	GPMU	Delaware
	Goldman Sachs Services (Asia) Limited	Yes	GHKL	Hong Kong
	Goldman Sachs Services (Singapore) Pte. Ltd.	Yes	GPMS	Singapore
	Goldman Sachs (UK) Svc. Limited	Yes	GSUL	England
	Goldman Sachs Japan Services Co., Ltd.	Yes	GSJS	Japan

Core and Non-Core Business Lines	
Core Business Lines	*Non-core Business Lines*
- Investment Banking	- Investing and Lending
- Institutional Client Services	- Investment Management

Notes:

1. See Abbreviations for a definition of Participating Material Entity

2. We also refer to GFLC as the Funding IHC

Cautionary Note on Forward-Looking Statements

The Resolution Plan is based on a series of hypothetical scenarios and assumptions about future events and circumstances. Accordingly, many of the statements and assessments in the Resolution Plan constitute "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. These statements include statements, other than historical information or statements of current conditions, that relate to, among other things, our future plans, objectives and resolution strategies (including our expectations and projections regarding the implementation of those strategies), to the objectives and effectiveness of our risk management policies and practices, and to our resolution capabilities (including those regarding capital, liquidity, operational matters, legal entity rationalization and separability, and our governance mechanisms, derivatives and trading activities and MIS). The Resolution Plan is based on many significant assumptions, including assumptions about the actions of regulators, creditors, depositors and counterparties, the ability of Group Inc. and the Funding IHC to perform their obligations under the Capital and Liquidity Support Agreement in connection with the provision of liquidity to and the recapitalization of the participating material entities, the state of the capital markets and the economy and the impact of a significant loss event on Goldman Sachs. None of these assumptions may prove to be correct in an actual resolution situation. The Resolution Plan is not binding on a bankruptcy court, the Agencies or any other resolution authority, and the scenarios that we describe and the assumptions that we make in the Resolution Plan are hypothetical and do not necessarily reflect events to which we are or may become subject. In the event of the resolution of Goldman Sachs, the strategies implemented by Goldman Sachs, the Agencies or any other resolution authority could differ, possibly materially, from the strategies we have described. As a result, our actual resolution strategies, or the outcomes of our resolution strategies, could differ, possibly materially, from those we have described.

We have also included information about the status or efficacy of projects we have undertaken in connection with the shortcomings identified by the Agencies in our 2015 Resolution Plan, the April 2016 Letter, the 2017 Guidance, and resolution planning generally. The statements with respect to the completion, impact and effectiveness of these projects are also forward-looking statements, and these projects may not be completely effective or have the impact we anticipate.

1. Introduction

Introduction

The submission of this 2017 Resolution Plan marks the latest step in our multi-year effort to make our firm more resolvable. Throughout this process, our goal has been to construct business-as-usual practices and to ingrain them into our everyday operations and decision-making processes so that our firm will remain resolvable across a broad range of potential failure scenarios. This submission marks a significant change from the last one, and we believe that our firm is now more easily resolvable.

We have devoted substantial resources to the resolution planning process across all our business units and geographic locations. Resolution planning has been the catalyst for important changes across the firm, including a significant reduction in the complexity of our organizational structure and numerous enhancements to our governance and booking practices. These changes address both regulatory feedback and enhancements that we ourselves identified through the course of resolution planning and business-as-usual processes.

About Goldman Sachs

Although Goldman Sachs is a leading global investment banking, securities and investment management firm, we currently have only a small retail banking franchise, and we do not participate significantly in broad-based retail or custody banking, or provide payment services. On the other hand, we do have a significant presence in the global securities and derivatives markets. Therefore a primary objective of our resolution planning efforts has been to ensure that we could exit these businesses in an orderly manner over time, without serious adverse consequences for the broader markets.

See Section 2 for a more detailed description of Goldman Sachs.

Our Preferred Resolution Strategy

Our Resolution Plan covers the entire firm but places particular emphasis on our two core business lines[1] of Investment Banking and Institutional Client Services. We conduct these business lines primarily through nine material operating entities and nine material service entities. These 18 entities, together with our parent company, Group Inc., account for the vast majority of the firm's net revenues (82%), balance sheet (93%), third-party derivatives notionals (98%) and staff (83%).

Our Resolution Plan assumes that the firm experiences a period of financial difficulties, followed by an extremely large financial loss and significant outflows of liquidity. It ensures that resolution is

[1] *Core Business Lines are those businesses, including their associated operations, services, functions and support, the failure of which would, in the firm's view, result in a material loss of revenue, profit or franchise value.*

triggered at a point when the firm still has sufficient liquidity and capital to conduct an orderly wind-down.

Our preferred resolution strategy is consistent with a single point of entry strategy, an approach that has been developed by regulators and the industry over the past several years. Under our strategy, our parent company (Group Inc.) goes into bankruptcy proceedings, but most of our material operating entities and all of our material service entities do not; instead, they remain in business and engage in an orderly wind-down of their activities or, in the case of our asset management subsidiaries, are sold. We have structured our Resolution Plan to give these entities access to the capital and liquidity they need to remain in business throughout the wind-down period. Some of this capital and liquidity is pre-positioned at these entities in business-as-usual circumstances, well ahead of any financial distress. In addition, material entities that participate in a Capital and Liquidity Support Agreement ("CLSA") ("participating material entities") will have access to any further capital or liquidity they may need because the CLSA requires our newly established Funding Intermediate Holding Company ("Funding IHC") to provide such resources once a runway trigger has been breached. This agreement operates under pre-arranged contractual terms that do not require any activation by the Board of Group Inc. ("our Board") or by regulators.

With access to this capital and liquidity, the participating material entities can continue to perform limited activities that allow them to be wound down or sold, in an orderly fashion, outside of bankruptcy proceedings. Because they have the necessary resources to meet their contractual obligations, their derivative and secured funding contracts are not terminated[2], they can sell their assets without a fire-sale, and they can transfer clients' accounts to alternative service providers in an orderly fashion. By avoiding a disorderly sale of assets, this strategy works to minimize losses and reduce the likelihood of causing systemic disruption. By the end of our 18-month projection period, some businesses (such as our asset management business) may have been sold, but the vast majority of our activities will have been wound down and ceased to exist.

See Section 3 for a more detailed description of our preferred resolution strategy.

Resolution Capabilities

As part of our multi-year resolution planning processes, we have built the underlying capabilities required to support the successful execution of our preferred resolution strategy and to maintain its flexibility. We have addressed all the industry-wide and firm-specific guidance issued by the Agencies over the last several years and have amended our business-as-usual processes accordingly. Importantly, we have addressed the "capabilities" identified by the Agencies in their

[2] *We assume that the regulations supporting the ISDA Resolution Stay Protocol have been implemented.*

industry-wide 2017 Guidance[3], as well as the firm-specific shortcomings identified by the Agencies in their April 2016 Letter[4].

Our consistent approach has been to develop and use strategic technology platforms and comprehensive financial models. Although this approach has required a long lead-time, we believe it greatly enhances the reliability, frequency and consistency of our calculations; in addition, it allows us to perform "what if" scenario analyses, and to integrate these capabilities into our business-as-usual processes and Management Information System ("MIS") reporting.

The following are some highlights of the initiatives to improve our resolvability that we have undertaken and embedded into our global, business-as-usual practices:

Funding IHC and CLSA:

- We have established the Funding IHC. This entity extends most of the short- and long-term loans required by our participating material entities and holds most of the firm's excess liquidity that is not already pre-positioned at participating material operating entities.
- We have put in place the CLSA, which is a fully collateralized, contractually binding mechanism designed to ensure that our participating material entities will obtain from the Funding IHC the capital and liquidity that they need in a resolution scenario. Together, the Funding IHC and the CLSA are designed to mitigate the risk of creditor challenge and to afford an additional degree of flexibility in our resolution strategy because the exact amount and location of capital and liquidity does not need to be pre-determined.

Capital and Liquidity:

- We have developed methodologies and comprehensive models for calculating the amounts and determining the appropriate positioning of capital and liquidity required to execute our preferred resolution strategy.
- We have positioned capital and liquidity resources at participating material entities and the Funding IHC in accordance with the methodologies we have developed.

Governance Mechanisms:

- We have linked the new capital and liquidity metrics to our recovery and resolution "triggers and alerts" framework, which is part of our broader governance mechanisms designed to ensure that actions are taken at the appropriate time regarding the escalation of information for

[3] By "2017 Guidance," we refer to the "Guidance for 2017 §165(d) Annual Resolution Plan Submissions by Domestic Covered Companies that Submitted Resolution Plans in July 2015," issued by the Agencies in April 2016.

[4] By "April 2016 Letter," we refer to the letter to Goldman Sachs dated April 12, 2016, in which the Agencies set out their findings regarding our 2015 Resolution Plan.

decision-making, the Funding IHC's provision of contractual support to participating material entities, and the timely execution of the bankruptcy filing itself.

- We have developed a resolution "playbook" for each of our material entities and conducted a series of educational workshops for their respective boards of directors.

Derivatives Wind-down:

- We have prepared a comprehensive analysis of the likely costs and the capital and liquidity implications of winding down our derivatives portfolios under our preferred resolution strategy, as well as under the "active" and "passive" scenarios required by the Agencies.
- The financial models used to calculate the capital and liquidity metrics are integrated with the derivatives technology platform to ensure that derivative wind-down and operational costs are integrated into the capital and liquidity metrics in a consistent and systematic manner.

Shared Services:

- In all the principal jurisdictions where we are active, we have established a series of resolution-resilient service entities, funded them with six months' liquidity, and transferred staff, fixed assets and technology assets into them to provide flexible operational continuity capabilities for the orderly wind-down of our operations.
- We have identified all resolution-critical intercompany services across the firm, and have documented them in Service Level Agreements ("SLAs") that are stored in a readily searchable repository.
- We have performed a quantitative and qualitative evaluation to identify those Financial Market Utilities ("FMUs"), including agent banks, that are critical to the successful execution of our preferred resolution strategy, and we have prepared individual playbooks for each of them to facilitate the necessary operational, staffing and funding activities.

Management Information Systems:

- We have developed highly sophisticated technology solutions that enable rapid access to the data that is essential in a resolution scenario; these include a "Recovery and Resolution Visualizer" that accesses multiple databases in order to display relationships and inter-dependencies among legal entities, services, functions, systems, people, vendors and facilities, and to give easy access to supporting documentation such as Qualifying Financial Contracts and SLAs.

Legal Entity Rationalization:

- We have developed and implemented criteria for the rationalization of our legal entity structure and simplification of our booking model. This has enabled us to:
    - simplify our legal entity structure;

- reduce the number of legal entities;
- re-organize remaining entities under simpler ownership lines;
- group entities under intermediate holding companies in a manner that could facilitate the sale of individual businesses; and
- reduce the number of intercompany transactions.

Booking Practices:

- We have reduced the number of intercompany derivative transactions (for example, by changing our trade booking practices and entering into “tear-up” arrangements whereby affiliates agree to terminate offsetting and near-offsetting transactions at mutually agreed, arm’s-length prices).
- We have taken steps designed to ensure that remaining intercompany derivative transactions present a significantly reduced risk to the resolvability of our firm (for example, by subjecting them to central clearing arrangements, establishing daily margin requirements and reducing the threat of cross-default and early termination rights).

Operational Feasibility of Runway:

- We have created a Runway Period Operational Playbook to support the operational feasibility of the runway period; this identifies the steps required to operationally execute each action we expect to take during the runway, and estimates the amount of time required to perform them.
- We have carried out, with the help of external counsel, a practice test to satisfy ourselves that our MIS could produce all the information needed to support a bankruptcy filing within 48 hours.

See Section 4 for a more detailed description of our resolution capabilities.

Governance over Preparation of our Resolution Plan

Our Board and senior management have overseen our resolution planning process and have taken an active role by giving direction, challenging assumptions and providing resources for the many projects that we have undertaken to improve our resolvability. Numerous firmwide and regional governance bodies have also been updated and have reviewed and, where appropriate, have approved our Resolution Plan.

Our Resolution Steering Group has been responsible for developing our Resolution Plan and for ensuring that the critical capabilities are fully operational. This Steering Group is co-chaired by the firm’s Head of Global Compliance (who was, until recently, the firm’s Principal Accounting Officer) and the firm’s Treasurer (who was previously the firm’s Head of Operations). Its members are drawn from a broad range of functions and have between them a comprehensive understanding of our firm. In addition, we established a series of global working groups, all of which report to the Resolution Steering Group, to oversee the implementation of specific aspects of the work we have undertaken and to maintain the newly implemented procedures in a business-as-usual environment.

The financial models that we have developed to support our resolution planning capabilities have been validated by our independent model review group. Our Internal Audit department has also provided independent assurance over the procedures and controls relevant to the Resolution Plan.

See Section 6 for a more detailed description of our resolution plan governance.

Conclusion

We do not underestimate the complexity of resolving a financial institution such as ours. We recognize that resolution planning is about more than simply creating a formal resolution plan. It is also about designing a process that can be flexible as conditions change, taking steps to make our resolution strategy fully operational and embedding resolution considerations in our day-to-day business decisions. Recognizing the challenges of anticipating the precise circumstances of how our firm might come to the point of resolution, we have built a high degree of flexibility into our resolution planning process.

Since our last submission, we have invested significant time and resources to upgrade our Resolution Plan substantially. While the work is our own, we have benefitted from the valuable feedback and guidance from the Agencies through the process.

With the significant levels of capital and liquidity pre-positioned at our participating material operating and service entities, the further resources pre-positioned at our Funding IHC, our enhanced governance mechanisms, our CLSA, and the many other measures we have taken to comprehensively address the capabilities required by the Agencies, we are confident that our resolution strategy could be executed successfully and that our firm could be wound down in an orderly manner, without jeopardizing global financial markets, requiring taxpayer support or causing losses to the FDIC's Deposit Insurance Fund.

2. Considerations Specific to Goldman Sachs

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A. About Goldman Sachs

Goldman Sachs is a leading global investment banking, securities and investment management firm that provides a wide range of financial services to a substantial and diversified client base that includes corporations, financial institutions, governments and individuals. Our clients are located worldwide and we are an active participant in financial markets around the world. As of December 2016, we had offices in over 30 countries and 47% of our 34,400 employees were based outside the Americas. During 2016, we generated 40% of our net revenues outside the Americas.

We currently have only a small (but growing) retail banking franchise, and we do not participate to a significant degree in broad-based retail or custody banking, or provide payment services. On the other hand, we do have a significant presence in global securities and derivatives markets, and a primary objective of our resolution planning efforts has been to ensure that we could exit these businesses without serious adverse consequences to the broader markets.

We considered the criticality of our business units in the light of their market volumes, profitability and balance sheet footprint: based on this review, we identified core business lines, critical operations and material entities:

- Our core business lines are those businesses that, upon failure, would result in a material loss of revenue, profit, or franchise value to the firm: they are Investment Banking and Institutional Client Services.
- Our critical operations are those that would pose a threat to the financial stability of the United States if they were to fail or be discontinued.

- Our material entities are those subsidiaries of the firm that are significant to the activities of a critical operation or core business line. In addition to the “covered company” (i.e., our parent company, Group Inc.), we have nine material operating entities and nine material service entities.

The chart below shows not only that our material entities account for the vast majority of the firm’s net revenues, balance sheet, third-party derivatives notionals and staff, but that the largest three entities account for most of the firmwide totals:

Material Entities as a Proportion of Firmwide Total

Entity	Net Revenues	Balance Sheet	3rd-Party Derivative Notionals	Staff[1]
GS&Co.	36%	36%	3%	34%
GSI	20%	24%	45%	12%
GS Bank	10%	18%	47%	2%
Sub-Total: Top 3 Entities	**67%**	**78%**	**94%**	**49%**
Remaining Material Entities	15%	15%	3%	34%
Sub-Total: All Material Entities	**82%**	**93%**	**98%**	**83%**
Other Subsidiaries	18%	7%	2%	17%
Total	**100%**	**100%**	**100%**	**100%**

Note 1: Staff numbers have been adjusted to reflect transfers into service entities since January 1, 2017

B. Financial Profile

In terms of our capital and liquidity, our balance sheet has never been more conservatively positioned, largely as a result of changes we have made to adapt to new regulations since the financial crisis. Our parent company has substantial levels of Total Loss Absorbing Capacity (“TLAC”) and liquidity, and its financing is long-dated and diversified. Furthermore, our material operating entities themselves have strong financial and risk profiles, and many of them are regulated in their own right.

Current Balance Sheet:

Our balance sheet is less than $1 trillion. Over a quarter of it is comprised of unencumbered, highly liquid securities that have been earmarked to meet current and potential liquidity needs (our "Global Core Liquid Assets" or "GCLA"). Almost a quarter is comprised of secured client financings. Our inventory of financial instruments is used to facilitate the execution of client transactions across multiple products, markets and geographies in our role as market maker. As of year-end 2016, 97% of our balance sheet was carried at fair value or at amounts that approximate fair value.

Non-GAAP Balance Sheet Allocation as at December 31, 2016

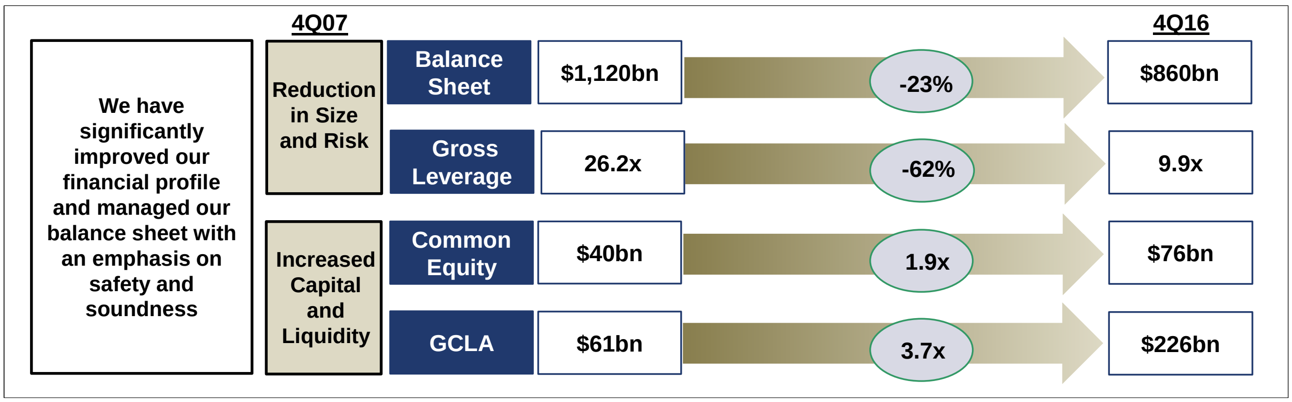
$ in billions	
Assets	
Global core liquid assets (GCLA)	$ 226
Other cash	9
GCLA and cash	**235**
Secured client financing	**199**
Inventory	207
Secured financing agreements	66
Receivables	29
Institutional Client Services	**302**
Public equity	3
Private equity	18
Debt	22
Loans receivable	50
Other	5
Investing & Lending	**98**
Total Inventory and related assets	**400**
Other assets	**26**
	$ 860
Liabilities and Equity	
Deposits	$ 124
Financial instruments sold, but not yet purchased	117
Collateralized financings	101
Payables and other liabilities	242
Unsecured long-term borrowings	189
Total Liabilities	**773**
Preferred stock	11
Common equity	76
Total Shareholders' Equity	**87**
	$ 860
Unfunded commitments to extend credit	$ 112
Derivatives notionals	$41,376

On the liability side of our balance sheet, we maintain significant tenor in both our secured and unsecured borrowings, thereby reducing the likelihood that liquidity shortfalls triggered by maturing funding transactions would compel us to resort to disorderly sales of our securities inventory. Our expectation of an orderly wind-down is further enhanced by the fact that, at December 2016, 54% (by notional) of all our derivatives with external counterparties are either cleared or exchange traded.

Note that this Non-GAAP Balance Sheet Allocation is an allocation of assets to our businesses. This is a non-GAAP presentation and may not be comparable to similar non-GAAP presentations used by other companies. We believe that presenting our assets on this basis is meaningful because it is consistent with the way management views and manages risks associated with our assets and better enables an assessment of the liquidity of our assets. See Supplementary Information schedule SI 10 on page 116 for a reconciliation of this Non-GAAP Balance Sheet Allocation to our U.S. GAAP balance sheet.

Strengthened Financial Profile[5]:

Since 2007, we have taken many actions[6] that have strengthened our financial profile, improved our resiliency and reduced the possibility of causing a systemic disruption to the U.S. financial system.



We have decreased our size and risk levels by:

- reducing our balance sheet by 23% (from $1.12 trillion to $860 billion);
- lowering our level 3 assets[7] by more than 50%;
- significantly increasing the volume of our derivatives that are centrally cleared; and
- significantly reducing our gross leverage ratio from approximately 26 times to approximately 10 times.

We have increased capital and liquidity by:

- growing our common shareholders' equity by 90% (from $40 billion to $76 billion);
- increasing our GCLA to 26% of our balance sheet from 5% at year-end 2007 (an increase of $165 billion to $226 billion); and
- increasing the weighted average maturity of our non-GCLA secured funding book[8] to more than 120 days.

[5] *Unless otherwise stated, all financial data is as of December 31, 2016.*

[6] *Some of these actions were driven by regulatory requirements, others were taken at our own initiative.*

[7] *See "Fair Value Measurements" Note 5 of the Group Inc.'s Annual Report on Form 10-K for the year ended December 31, 2016.*

[8] *Comprised of "collateralized financings" in the consolidated statements of financial condition.*

We have reduced complexity by:

- closing all of our proprietary trading businesses;
- selling our investment in Industrial and Commercial Bank of China (a Chinese bank);
- selling several non-core businesses and activities including:
  - our Americas reinsurance and European insurance businesses[9];
  - our hedge fund administration business;
  - our electronic trade management platform;
  - our mortgage servicing business; and
  - our investments in several commodities-related businesses that hold physical infrastructure, including a metals warehouse, a coal extraction facility and power generation plants;
- discontinuing our trading activities on bespoke credit correlation products;
- simplifying our corporate structure and significantly reducing the number of our legal entities;
- rationalizing our intercompany transactions to reduce interconnectedness; and
- making progress on exiting a substantial portion of our investments in “covered funds” under the provisions of the Dodd-Frank Act referred to as the “Volcker Rule.”

Total Loss-Absorbing Capacity[10]:

We have significant balances of loss-absorbing instruments at our parent company (at December 2016, equal to more than 30% of our risk-weighted assets (“RWAs”) calculated under the Standardized Capital Rules) in the form of common and preferred equity, as well as subordinated and senior unsecured debt. This large amount of TLAC is available to absorb losses, thereby insulating taxpayers from risk of loss and providing the ultimate resources necessary for re-capitalizing the material operating entities.

Funding and Liquidity:

In order to pre-fund our estimated potential cash and collateral needs during a liquidity crisis, we maintain a significant balance of unencumbered, highly liquid securities and cash, which we call our GCLA, much of which is pre-positioned at participating material operating entities or at the Funding IHC. The maturities of our external liabilities are long-dated in comparison to our assets,

[9] *We retain a minority stake in these businesses.*

[10] *External TLAC takes the form of common equity, preferred equity, subordinated debt and senior unsecured debt that complies with the requirements of the Federal Reserve’s TLAC rule that becomes effective in January 2019.*

with the result that there is a reduced likelihood of having to sell inventory at depressed prices in the face of sudden liquidity pressures:

- our GCLA balance was $226 billion as of December 2016;
- our unsecured long-term borrowings ($189 billion as of December 2016, of which $18 billion is subordinated debt) have a weighted average maturity of approximately 8 years; in the event that Group Inc. enters bankruptcy proceedings, the relevant lenders would have an unsecured claim against Group Inc. with respect to any amounts owed in connection with such borrowings. Group Inc. would generally be prohibited from paying claims, including claims in respect of the unsecured borrowings, that arose prior to the commencement of any bankruptcy proceeding until the bankruptcy proceedings are completed;
- as of December 2016, our banks had deposits of $124 billion, of which approximately $70 billion was insured by the FDIC; in the event that Group Inc. enters bankruptcy proceedings, we expect that pace of withdrawals will be determined primarily by the insurance status of these deposits and the contractual arrangements to which they are subject.
- the weighted average maturity of our secured funding[11], excluding funding that can only be collateralized by highly liquid securities that are eligible for inclusion in our GCLA, exceeded 120 days as of December 2016. The overwhelming majority of our secured funding transactions do not feature cross-default provisions and, therefore, would not terminate early as a result of a parent company bankruptcy filing.

Financial and Risk Profile of Material Entities:

By keeping most of our material operating entities and all our material service entities out of proceedings, we would be able to facilitate the gradual and orderly wind-down of our balance sheet, and thereby avoid the disruption that could be caused by a sudden cessation of activities. Many aspects of our material entities' financial and risk profile are beneficial to our preferred resolution strategy:

- our parent company has discontinued the practice of issuing debt with an original maturity of less than one year;
- we do not have and do not permit upstream guarantees of the parent company by its subsidiaries, so the contagion of losses across the firm is reduced;
- significant pre-positioned intercompany loans from our parent company or the Funding IHC to material operating entities act as internal TLAC by permitting swift and comprehensive re-capitalization of those entities via debt forgiveness where needed;

[11] *Secured funding is included in "collateralized financings" in the consolidated statements of financial condition.*

- we hold substantial liquidity in our participating material operating entities; and
- we operate primarily through subsidiaries, many of which are regulated in their own right, so capital is available locally to support exposures in the relevant jurisdictions.

Cross-Jurisdictional Coordination:

We believe that the number and complexity of cross-jurisdictional issues are greatly reduced by the fact that all our material operating entities are currently situated in only three countries: the United States, the United Kingdom and Japan. Further, we believe that the regulatory agencies in these countries have interests that are generally aligned with our preferred resolution strategy of keeping participating material entities out of proceedings, because it is not generally in their interests to put large entities into bankruptcy proceedings if these entities maintain sufficient capital and liquidity to meet all their obligations.

Accounting Practices:

As of year-end 2016, 97% of our balance sheet was carried at fair value or at amounts that approximate fair value. Our practice of marking assets to market means that write-downs are immediately identified and reflected in net revenues and in risk management systems. Further, the discipline of marking exposures to market, together with the supporting discipline of a rigorous price verification process, give us ongoing transparency into our true exposures and greatly reduce the likelihood that significant unrecognized losses would come to light during a resolution.

3. Summary of our Preferred Resolution Strategy

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C. Conclusion of our Preferred Strategy *Page 24*

A. Introduction to our Preferred Resolution Strategy

Our preferred resolution strategy is consistent with a single point of entry strategy:

- We assume a period of financial difficulties, followed by an extremely large financial loss and significant outflows of liquidity.
- This causes our parent company and two smaller material operating entities to enter bankruptcy proceedings.
- Our participating material operating entities and all our material service entities survive, either because they already have sufficient pre-positioned capital and liquidity at their disposal, or because, as parties to the CLSA, they are contractually entitled to receive financial resources from our newly-created Funding IHC.
- Our material service entities continue to provide operational services to the participating material operating entities because they are contractually obligated to do so and would continue to be paid for providing those services.
- The participating material operating entities are therefore able to continue performing limited activities for long enough to be wound down or sold in an orderly fashion outside of resolution proceedings.

This strategy avoids the fire-sale of assets, minimizes unnecessary losses and permits the orderly transfer of client accounts to alternative service providers.

B. Sequence of our Preferred Resolution Strategy

We recognize that actual events rarely unfold exactly as planned. Throughout the preparation of our Resolution Plan, we have emphasized the need for flexibility to deal with a wide variety of real-world situations, and have focused as much on the planning process as on the creation of a plan to address a specific situation. Nevertheless, for the purposes of our Resolution Plan, we envision that our preferred resolution strategy would unfold as follows:

Early Signals of Financial Distress

Our firm enters a period of financial distress: the enhanced framework of capital- and liquidity-based “triggers and alerts” that we have established quickly causes this situation to be signaled to senior management, our Board and our regulators globally:

- Our Board and senior management consider and, if appropriate, take actions to raise liquidity, reduce balance sheet size and/or strengthen our capital ratios.

Deteriorating Financial Situation

Further trigger levels are breached as the firm’s financial position continues to weaken:

- The engagement of our Board and senior management becomes more focused.
- We continue to calculate and monitor on a daily basis Resolution Liquidity Execution Need (“RLEN”), Resolution Liquidity Adequacy and Positioning (“RLAP”) and Resolution Capital Execution Need (“RCEN”).
- We activate our communications playbook, which provides a roadmap for our proactive communication with regulators, staff, clients and other stakeholders so that they are aware of the firm’s evolving financial situation.

Start of Runway

Recovery efforts prove unsuccessful, with continuing losses and significant liquidity outflows. Our firm incurs a very significant loss, as a result of which significant liquidity outflows occur and at least one runway trigger is breached: our Board sets in motion the preparations for a possible bankruptcy filing by Group Inc. and two smaller material operating entities:

- We have prepared an inventory of the tasks that would need to be completed during the runway, including the preparation and execution of bankruptcy filings, coordination with various governance bodies within the firm, and communication with regulators in the United States and other jurisdictions.
- We update and complete the first-day and emergency motions legal documents, including an emergency motion asking the court to effect the contractual stay on termination rights in the ISDA Protocol. Drafts of these documents have been prepared in advance and are included in our “Bankruptcy Playbook” in our 2017 Resolution Plan.
- We are confident that we can produce, within a 48-hour period, the large volume of information needed to support these filings, because we carried out a comprehensive “test run,” monitored by external counsel, to satisfy ourselves that our MIS can produce this information.
- We continue to follow our communications playbook which requires, among numerous other matters, more extensive communication and coordination with regulators in all relevant jurisdictions.

- Under our preferred resolution strategy, we assume a runway period of ten days, which allows sufficient time for us to complete all the tasks required during this period.
- Throughout the runway, the Funding IHC is required under the terms of the CLSA to replenish participating material entities' liquidity and capital levels.

Resolution is Triggered

Losses and liquidity outflows continue and the resolution trigger under the CLSA is breached.

- Because we have developed comprehensive models to determine how much RCEN and RLEN our participating material entities would need to conduct the orderly wind-down (and have had them validated in accordance with our model control policy), resolution is designed to be triggered at a point when the firm still has sufficient liquidity and capital for these entities to conduct an orderly wind-down.
- Our strategy is designed to ensure the best possible starting position for the resolution event by optimizing the amount of capital and liquidity available to participating material operating entities, while ensuring that the parent company enters bankruptcy while GS Group still has a sufficient amount (but not an unnecessarily large excess) of capital and liquidity.
- At the point of the resolution trigger, the following events take place in accordance with the CLSA's contractual terms:
  - Group Inc. is required to make a final contribution of certain assets to the Funding IHC; this obligation is secured and subject to a liquidated damages provision; and
  - A revolving credit facility provided by the Funding IHC to Group Inc. as part of the CLSA ("Revolver") is automatically repayable and terminated, thereby cutting Group Inc. off from its primary source of liquidity.
- Although our Board still retains the discretion to decide whether or not to file for bankruptcy, it is at this point highly likely to authorize Group Inc. to enter bankruptcy proceedings.
- We have determined that the failure of two of our smaller material operating entities, J. Aron & Company LLC ("JANY") and Goldman Sachs Lending Partners LLC ("GSLPtnrs"), would not pose a risk to the stability of financial markets and would not adversely affect the resolution of Goldman Sachs. We believe it is both reasonable and prudent to refrain from attempting to save every entity, but rather to focus capital and liquidity resources on those entities that are either systemically important or core to our firm. Therefore, these entities are not signatories to the CLSA, and because they have insufficient capital or liquidity to survive without parent support, they also enter proceedings at this time.
- Under the CLSA, the Funding IHC remains obligated, following the resolution trigger, to provide participating material entities with the capital and liquidity that they need.

Orderly Wind-down Period Begins

The table below summarizes the anticipated resolution approach for Group Inc. and each of our material operating entities:

Resolution Approach For Group Inc. and Material Operating Entities

Entity	Potential Sale	Orderly Wind-down Outside of Proceedings	Supervised Orderly Wind-down in Proceedings
The Goldman Sachs Group, Inc.	✗	✗	✓
Goldman Sachs & Co. LLC	✗	✓	✗
Goldman Sachs International	✗	✓	✗
Goldman Sachs Bank USA	✗	✓	✗
J. Aron & Company LLC	✗	✗	✓[1]
Goldman Sachs Japan Co., Ltd	✗	✓	✗
Goldman Sachs International Bank	✗	✓	✗
Goldman Sachs Asset Management, L.P.	✓	✗	✗
Goldman Sachs Asset Management Int'l	✓	✗	✗
Goldman Sachs Lending Partners LLC	✗	✗	✓[1]

Note 1. Alternative options for these entities are available; however, to be conservative, our preferred resolution strategy reflects a supervised orderly wind-down in proceedings.

- All material service entities have been pre-funded with sufficient capital and liquidity to operate autonomously for six months. They continue to provide services (staffing, as well as access to technology hardware and software, and to facilities) to participating material operating entities because they are contractually obligated to do so, provided the participating material operating entities continue to pay for the services they receive.

- Two participating material operating entities, Goldman Sachs Asset Management, L.P. ("GSAM") and Goldman Sachs Asset Management International ("GSAMI"), are likely to be sold as going concerns.

- Under the terms of the CLSA, until the Funding IHC's financial resources have been exhausted, it must use them to provide participating material operating entities with sufficient capital and liquidity to meet their regulatory and operational needs, and to prepare for their orderly wind-down over time outside of proceedings. We have prepared detailed plans for these entities to:

  - cease revenue-generating activity, except to the extent necessary to (a) maintain critical operations pending their assumption by other market participants, and (b) maintain market risk at constant levels through inventory hedges;

  - retain those staff who have been identified as critical to an orderly wind-down; and

  - provide for seamless operational continuity and continued access to FMUs and other vendors and infrastructure.

Orderly Wind-down Period Progresses

Although the orderly wind-down of the participating material operating entities proceeds with all due speed, it does so without unnecessary haste because these entities continue to have access to capital and liquidity from the Funding IHC. Therefore, they remain in compliance with their regulatory requirements and market expectations, they have sufficient liquidity to meet any outflows as they arise, and the long weighted-average maturity of their secured funding book allows asset dispositions to take place in an orderly fashion.

- In accordance with the detailed plans that we have developed and tested, we facilitate the transfer of client accounts (especially those of our prime brokerage and private wealth management customers) to alternative service providers as quickly as possible, and in a manner that does not disrupt their business. Our RLEN methodology conservatively projects the liquidity needed for the transfer period.
- Consistent with our RCEN and RLEN calculations and our resolution triggers, our derivatives portfolios are wound down over an 18-month period; we have also estimated the impact of both a longer (36-month) and a shorter (12-month) period, and of a passive wind-down over the full life of our derivatives book.
- Because we consider that a return to investment-grade status is unlikely under these circumstances, we assume that we do not have access to the bi-lateral OTC derivatives market and therefore we assume that we can only hedge with listed and cleared transactions.
- JANY and GSLPtnrs, which have entered proceedings, sell their inventory positions in an orderly manner over time. We expect that their derivative counterparties would terminate open transactions at the point when these entities enter bankruptcy.
- We have identified five discrete operations, none of which are core business lines, that might be sold under certain conditions. However, in order to be conservative, we take no benefit from these potential sales in our RLEN or RCEN projections.

C. Conclusion of our Preferred Strategy

We have prepared detailed projections of the firm’s capital and liquidity position over an 18-month wind-down period under our preferred resolution strategy. In addition, the integrated technology platform that we use to calculate projections of our financial projections (i.e., derivatives portfolio wind-downs, operational costs, capital and liquidity positions) now gives us greater flexibility to perform such calculations under a range of alternative scenarios. Depending on the severity of these alternative scenarios, it is possible that several (or all) of our material entities would enter insolvency proceedings, such as FDIC receivership for GS Bank, liquidation under the Securities Investor Protection Act for our U.S. broker-dealer, and the relevant broker-dealer or bank resolution regimes in the United Kingdom and Japan.

Under our preferred resolution strategy, our financial projections show that, with their pre-positioned resources and any further injections of capital or liquidity from the Funding IHC, our participating material operating entities have sufficient resources to repay all creditors and wind down in an orderly manner over the forecast period; this is achieved without reliance on extraordinary government support or taxpayers' funds, and without jeopardizing global financial markets.

At the conclusion of the resolution process, only a small number of discrete businesses may have survived and been sold to third parties, and all our other assets have been sold or wound down. Following the wind-down, all residual value is returned to Group Inc. and is distributed to Group Inc.'s stakeholders.

4. Resolution Capabilities

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A. Introduction to our Resolution Capabilities

We have built all of the underlying capabilities that we believe are required to support the successful execution of our preferred resolution strategy, and to support flexibility in that strategy. As we developed these capabilities, we took particular care to incorporate them into our business-as-usual practices, including our governance practices and our operational policies and procedures. We paid particular attention to the 2017 Guidance, which is intended to help firms develop their preferred resolution strategies.

The following high-level summary of the capabilities that we have developed is organized in the same order as the topics in the 2017 Guidance.

B. Capital

In order to execute either our preferred resolution strategy or any of the variations that we have considered, our parent company must have enough loss-absorbing capacity (i.e., external TLAC) to recapitalize our participating material entities so they could continue to operate while the parent company is in bankruptcy. However, in deciding how to allocate loss-absorbing capacity to participating material entities (i.e., internal TLAC), it is also important to balance the certainty associated with pre-positioning against the flexibility of holding recapitalization resources centrally, either at the parent company or at our Funding IHC, to meet losses wherever they are incurred.

Although we demonstrate that we have appropriately positioned internal TLAC to execute our preferred resolution strategy, we attach greater importance to the fact that we have run sensitivity analyses of our loss assumptions and could still execute our resolution strategy under a broad range of alternative scenarios.

Resolution Capital Adequacy and Positioning ("RCAP")

We have established an RCAP framework designed to ensure that:

- Group Inc. maintains enough external TLAC to allow the Funding IHC to recapitalize participating material entities so that they continue to meet their regulatory and operational needs while they wind down outside of proceedings over an extended period; and
- Internal TLAC is positioned in a manner that appropriately balances the certainty associated with pre-positioning directly at participating material entities with the flexibility of holding recapitalization resources centrally to meet unanticipated losses wherever they may occur.

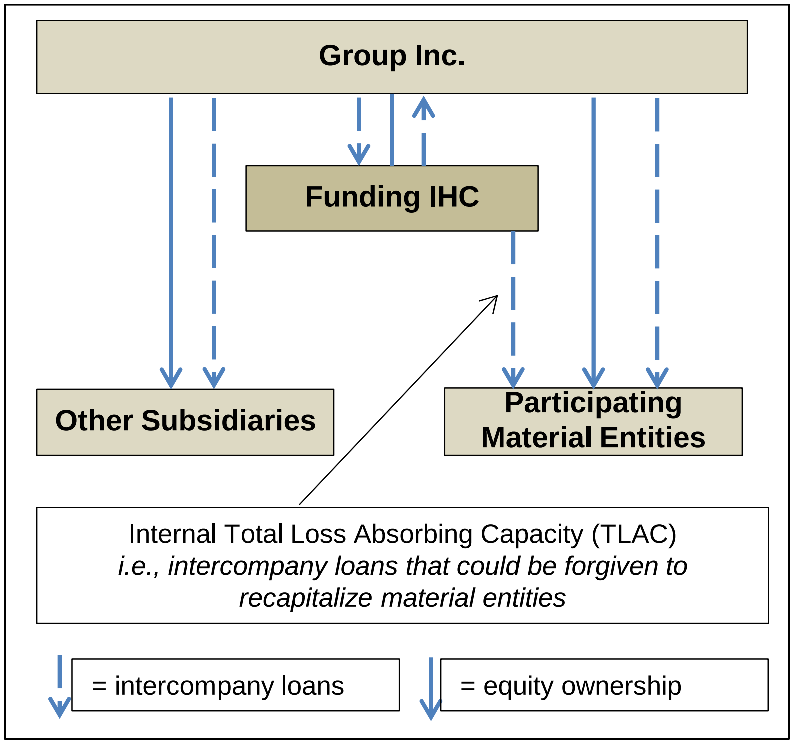
The key components of our RCAP framework (each of which is discussed in more detail below) are:

- Our newly established Funding IHC;
- Our CLSA;
- Our daily calculations of RCEN; and
- Our framework of triggers and alerts.

Funding IHC

As noted above, we have established a new Funding IHC. It is called Goldman Sachs Funding LLC and it is a direct subsidiary of Group Inc. This entity is fundamental to our pre-positioning strategy, and has been designated as a material service entity. In business-as-usual conditions, it provides most of the overnight and term loans required by our participating material entities and our parent company, and holds most of the firm's excess liquidity that is not already pre-positioned at participating material operating entities.

The chart below illustrates the role of the Funding IHC:



Capital and Liquidity Support Agreement

As explained above, the CLSA is a contractually binding mechanism to which Group Inc., the Funding IHC, our participating material operating entities and all our material service entities are signatories. If pre-determined capital or liquidity triggers are breached, the CLSA requires Group Inc. to transfer additional resources to the Funding IHC, and also requires the Funding IHC to provide financial support to participating material entities. This support begins during the runway and continues for an indefinite time after Group Inc.'s bankruptcy filing, until the resolution liquidity and capital needs of the participating material entities are satisfied. Group Inc. and the Funding IHC have granted a security interest in substantially all of their assets (other than Group Inc.'s equity interests in subsidiaries) to secure their obligations under the CLSA.

The CLSA and the Funding IHC bring two main benefits to our resolution strategy. First, it provides greater assurance that capital and liquidity will be dispensed as needed to the participating material operating entities. Second, it introduces a higher degree of flexibility because the Funding IHC does not enter resolution proceedings and the exact amount and location of capital and liquidity does not need to be pre-determined.

The CLSA operates as follows:

- during the runway, the CLSA requires the Funding IHC to recapitalize participating material entities as and when needed, including by forgiving or converting intercompany debt or injecting capital, so that they meet their applicable regulatory capital requirements plus an operating buffer[12];
- as soon as the resolution trigger under the CLSA is breached, it requires Group Inc. to make a final contribution to the Funding IHC of any remaining GCLA that the Funding IHC does not already hold[13], as well as intercompany receivables held by Group Inc.;
- following Group Inc.'s bankruptcy filing, the CLSA continues to require the Funding IHC to recapitalize participating material entities as before.

Daily RCEN Calculations

We now calculate and monitor RCEN on a daily basis for each of our participating material operating entities. An entity's RCEN is the cumulative amount of capital it would need in order to wind itself down in an orderly manner over time, following our parent company's bankruptcy. In order to calculate a material entity's RCEN, it is first necessary to project its capital requirements over the wind-down period, taking into account its projected expenses[14] and the gradual wind-down of its balance sheet. At each projection point, we measure a capital "excess" or "shortfall" (i.e., the difference between the projected regulatory capital levels and the amount required to meet the entity's applicable regulatory requirements).

For each participating material entity, RCEN is:

- the amount of capital it held at the start of the projection period
- plus the largest projected shortfall (or less the smallest projected excess)

Our daily calculations are based on a series of new financial models that have been fully documented in accordance with our internal model governance framework and validated by our Model Risk Management group. The calculations leverage our Asset-Liability Management model ("ALM"), a liquidity risk-management model that projects the liquidation of inventory over time under a variety of constraints. Our calculations are conservative because they assume a highly stressed environment for the projected liquidation of inventory.

[12] For the purpose of the CLSA, the Funding IHC is required to ensure that each participating material entity meets or exceeds its applicable regulatory capital requirements (for example, GS Bank should meet the "well capitalized" standard under the Prompt Corrective Action framework).

[13] Under the terms of the secured CLSA, the final contribution of remaining GCLA excludes an amount held back to fund the administrative expenses of Group Inc.'s bankruptcy proceeding and the projected amount of Group Inc.'s cash disbursements through the next business day.

[14] Projected expenses include operating expenses, bid /offer costs on the sale of cash inventory and derivative exit costs.

Triggers and Alerts Framework

We have established a series of quantitative "triggers and alerts" that are based on the firm's most important capital metrics[15], which we calculate on a daily basis. These triggers and alerts serve as indicators of the firm's financial health: alerts are less severe than triggers and are intended to signal that the firm may need to take action to ensure that we do not breach triggers; triggers, on the other hand, may cause the firm either to enter the runway or to commence preparations for a bankruptcy filing. Our resolution triggers and alerts framework is outlined in the playbook for our Board, and has been incorporated into our existing triggers and alerts framework.

C. Liquidity

Daily RLAP Calculations

We now calculate and monitor RLAP on a daily basis for each of our material operating entities. Similar to our internal liquidity stress test, we have the capability to estimate the stand-alone liquidity position of each material operating entity over a stressed period of 30 days, taking into account the daily contractual mismatches between inflows and outflows, intraday needs, the effect of inter-affiliate frictions, and the daily stressed liquidity flows and trapped liquidity as a result of potential actions taken by clients, counterparties, FMUs and regulatory authorities. Our model is used to evaluate whether we hold sufficient liquidity at the parent company and the Funding IHC to cover the sum of all stand-alone material entity net liquidity deficits.

The stand-alone net liquidity position of each material operating entity is measured using our internal liquidity stress test assumptions while treating inter-affiliate exposures in the same manner as third-party exposures. Our model can provide a detailed break-out of inter-affiliate transactions. Our RLAP calculation assumes that a net liquidity surplus at one material operating entity cannot be used to meet net liquidity deficits at other material operating entities or to augment the resources of either our parent company or the Funding IHC. GCLA reserves and their positioning would enable the firm to withstand RLAP external and intercompany flows, with an excess buffer above RLAP flows held at the parent company and the Funding IHC which can be deployed against unanticipated external or intercompany flows. This excess buffer is monitored daily and linked to alerts and to a recovery period trigger.

Taking into account RLAP guidance that we must balance the flexibility of resources held at the parent company with the certainty of pre-positioning, we will hold a variable percentage of RLAP in each participating material operating entity. The percentage is calculated to be commensurate with the size and complexity of the entity.

[15] *The triggers and alerts framework also includes liquidity metrics, which are discussed later in this document.*

RLAP Governance Mechanisms

We have incorporated RLAP into our revised triggers and alerts framework as a signal of stress or entry into the recovery period.

Consistent with our governance processes and controls for the use of models and methodologies, our RLAP methodology has been independently reviewed by our Model Risk Management and Liquidity Risk Management and Analysis departments.

Daily RLEN Calculations

We have developed and implemented a methodology for estimating the minimum operating liquidity (MOL) and peak funding need (PFN) that each participating material operating entity requires in order to stabilize itself and operate post-filing in support of our wind-down strategy. Our MOL methodology captures participating material entities' liquidity needs to cover intraday requirements, operating expenses and working capital. Our PFN methodology incorporates daily cash flow forecasts by entity, taking into account the effect of inter-affiliate transactions. These include flows from unwinding the entity's cash inventory and prime brokerage business and from maturing derivatives. They also include contingent outflows such as deposit outflows, the funding of loan commitments, the maturity of secured funding transactions without rollover, and counterparty exercising of optional early terminations on swaps. We are thus able to create a detailed break-out of external and inter-affiliate cash flows in resolution.

We have built the capability to calculate both a spot RLEN (as if we were to file for bankruptcy on the next morning) and a post-stress RLEN (as if we were to file for bankruptcy after a period of stressed outflows). The RLEN calculator can be used to calculate financial projections using hypothetical assumptions, including the financial condition of the firm through the runway. Although the spot RLEN calculator would be the only relevant one on the eve of a decision to file, the post-stress RLEN calculator is relevant for stress testing and resolution planning in business-as-usual.

RLEN Governance Mechanisms

We have re-assessed our framework of triggers and alerts in light of the Agencies' guidance and our RLEN and RCEN estimates, and have calibrated it at levels which are designed to ensure that we could trigger resolution at a time when the firm still has sufficient liquidity and capital in the right entities to conduct an orderly wind-down. Our resolution trigger uses spot RCEN and RLEN projections so as to take into account current positions. If we are in the midst of a period of stress, as we presumably would be if considering bankruptcy, this stress would be reflected in the spot metrics.

Consistent with our governance processes and controls for the use of models and methodologies, our RLEN methodology has been independently reviewed by our Model Risk Management and Liquidity Risk Management and Analysis departments.

Flexibility in our Projections

We recognize that events could unfold in a very different manner from that envisioned in our preferred resolution strategy, necessitating a different distribution of capital and liquidity to support a subsequent unwind. The RCEN and RLEN models that we have developed are flexible and adapt to the evolution of the firm under stressed conditions, to enable filing decisions at the appropriate time and to allow the firm to be resolved in an orderly manner under those circumstances.

D. Governance Mechanisms

Governance Playbooks and Triggers

We believe that advance preparation is a valuable tool to ensure that processes are in place and people are in a position to respond quickly in the event of a rapidly unfolding situation. To that end, we have prepared a series of playbooks to enable our Board, the boards of our other material entities, senior management and staff to make well-considered decisions and take appropriate actions across functional departments and legal entities, especially during the runway period. These playbooks incorporate “triggers,” based on capital and liquidity metrics, which are linked to specific actions as the firm transitions from business-as-usual conditions to a stress or recovery period, then to a runway period, and finally to resolution.

We have also prepared an employee retention plan to enable us to move swiftly to retain those employees who are critical to our resolution strategy. In addition, we have prepared a communication strategy to facilitate the timely provision of information to regulators, staff, clients and other stakeholders in a resolution scenario; and we have prepared playbooks that outline how cross-jurisdictional intercompany shared services could be maintained in a resolution scenario.

Pre- and Post-Bankruptcy Support

We have prepared an analysis that identifies potential obstacles to the provision of financial support to participating material operating entities and explains how we could seek to ensure that such support would be provided as planned. The potential legal obstacles in the analysis include, among others, claims of fraudulent transfer, preference, breach of fiduciary duty, breach of indenture covenants and equitable claims to enjoin the provision of financial support. In order to mitigate risks relating to these potential challenges to the planned financial support, we have entered into the CLSA, formed the Funding IHC and pre-positioned financial resources in material entities. We have also pre-funded the Funding IHC with assets that could be used to support material entities leading up to a Group Inc. bankruptcy filing.

E. Operational

Payment, Clearing and Settlement Activities

Subject matter experts within our firm first performed a quantitative and qualitative evaluation to identify those FMUs, including agent banks, that are critical to the successful execution of our preferred resolution strategy. Under our preferred resolution strategy, all our participating material operating entities that provide other affiliates with access to FMUs continue to operate during the wind-down period. We have prepared individual playbooks for each of our 21 critical FMUs and agent banks to facilitate the operational, staffing and funding activities required to sustain an orderly resolution.

Our estimated liquidity requirements in a stressed scenario assume a reduction in intraday credit provided to our participating material operating entities, a delay in payments from counterparties, higher settlement volumes, and the imposition of substantially higher margin requirements.

Managing, Identifying and Valuing Collateral

Our systems and processes for managing securities collateral are fully compliant with, and in several respects go well beyond, the applicable regulatory guidance[16]. Each of our material entities is able to identify and value the collateral it has received and posted, whether from / to external parties or affiliates; it can identify and locate the supporting legal documentation; it can assess the enforceability, segregation and re-hypothecation status of each piece of collateral; and it can do so in a timely manner, even against the backdrop of significant spikes in volume during a period of stress.

In addition, the functionality provided by our systems enables us to:

- track all sources and uses of collateral;
- provide information on cross-entity and cross-contract netting;
- identify CUSIP and asset-class information on collateral pledged to specific counterparties on a T+1 basis; and
- track and report on inter-affiliate collateral pledged and received.

We have put in place a comprehensive collateral management policy that outlines our approach to collateral management and serves as a single source for governance. We have also invested in a technology platform that contains all our Qualified Financial Contracts[17] and required metadata, for all our legal entities, in a searchable format and on a single platform. This is explained in more detail below.

Management Information Systems

Our firm has a long history of investing significantly in technology, and our MIS are designed to provide complete, timely and accurate information across our firm.

Our commitment to technology platforms has enabled an agile and innovative approach to engineering solutions for our recovery and resolution planning initiatives. Integral to our strategy

[16] *Regulatory guidance includes SR Letter 14-1 and the 2017 Guidance*

[17] *As defined in 12 CFR 360.5*

has been the build-out of several key projects, such as our strategic “Document Lake” which houses the firm’s Qualified Financial Contracts and vendor agreements in a single, firmwide repository. By leveraging intelligent search capabilities, machine-learning and advanced mathematics, the system is able to identify and extract specific data fields within documents. In addition, we have developed a data visualization platform (Recovery and Resolution Visualizer, or RRV) that navigates several of the firm’s production data stores and leverages intelligent matching and modeling techniques to visualize key interdependencies and relationships. The application provides a holistic understanding of the interconnections between the firm’s legal entities, services, functions, systems, people, vendors and facilities.

From a reporting perspective, in order to evaluate whether our existing MIS are resolution-ready, we first identified the specific information required to execute our resolution strategy and then assessed our ability to prepare it in a timely, accurate and reliable manner. We reached a preliminary conclusion that most such information can be readily produced, either because it is already used by the firm in the ordinary course of business or because it could be prepared quickly on an ad-hoc basis; we then confirmed this by collecting and archiving a sample of each of these reports. In addition, we increased the transparency of, and improved the governance over, these requirements by documenting them in a strategic, firmwide repository of regulatory reporting obligations. We also carried out a test, with the assistance of external legal counsel, that demonstrated our ability to produce within 48 hours the information necessary to support the bankruptcy filings envisioned in our preferred resolution strategy. As a result of this, we made some adjustments to the list of documentation requirements, but concluded overall that we have the reporting capabilities necessary to make such a filing.

We believe that we have the MIS needed to provide the range of information that would be required both before and during a resolution situation.

Shared and Outsourced Services

We established a Shared Services Working Group[18] to act as a governance mechanism over the provision of shared and outsourced services[19] in a business-as-usual context and to ensure the operational continuity of such services. This group has been responsible for developing a global strategy for shared services and ensuring that it is consistently executed across all regions.

All the shared services projects that were identified as “resolution-critical” have now been completed. This represents a highly important milestone in our resolution planning efforts because it can now be demonstrated that our material service entities and third parties would be both obligated and incentivized to continue providing services to the firm’s participating material operating entities following a bankruptcy by Group Inc.

[18] The Shared Services Working Group is one of the Recovery and Resolution Working Groups described on page 46; the firmwide working group is supported by several regional sub-groups.

[19] By “shared services,” we refer to the provision of services by one affiliate to another affiliate; by “outsourced services,” we refer to the provision of services by an unaffiliated company to an affiliate of Group Inc.

Service Entity Model: Our service entity strategy is central to our goal of ensuring the operational continuity of shared services. We first developed criteria for a service delivery model that would most effectively support our needs in resolution and enable our participating material operating entities to continue to function after the parent company enters bankruptcy proceedings. Based on these criteria, we then created several new service entities, streamlined the ownership of several others, and transferred many members of staff who support multiple operating entities into service entities. The result is that, across our firm globally, we now have a consistent model to provide for flexible operational continuity capabilities.

Continuity of Services: We are confident that our material service entities would provide continuity of services after a bankruptcy filing by our parent company primarily because they are contractually obligated to do so and because material service entities are themselves operationally and financially resilient. They are contractually obligated by intercompany services agreements which stipulate that affiliated shared service providers may neither terminate the agreements nor suspend or delay performance of their obligations to provide services due to the insolvency of the service recipient or other affiliates. These agreements define the level of services required, and are based on arm's length prices. In addition, the service entities are operationally and financially resilient because they have their own operational and governance infrastructure, and they maintain six months' worth of working capital on hand as a buffer in case payments for services are not timely received.

Operationalization of Shared Services: We have devoted significant resources to ensure the readiness of affiliates and third parties, following a bankruptcy of Group Inc., to continue providing services to any of Group Inc.'s subsidiaries that continue to pay. Specifically:

- we have established a Shared Services Working Group to provide oversight and direction over our work in this area;
- we have completed a project to identify and document all resolution-critical inter-company services across the firm and link them to core business lines and critical operations;
- we have identified the staff functions that are essential to maintaining the firm's critical operations and have developed options designed to ensure the retention of the relevant employees;
- we have revised the legal agreements supporting our intercompany personnel services to provide for continuity of service even if a contracting entity enters some form of bankruptcy proceedings;
- we have developed a data repository and workflow management application called "SLATE," which creates and stores SLAs and facilitates coordination between entities that receive and provide inter-affiliate services;
- we have linked the SLATE platform to the RRV, which represents visually the linkages between legal entities across multiple dimensions, and which can therefore visually represent the

provision of inter-affiliate services. Separately, the SLAs are linked to the IT systems required to perform their work, and any external vendors on which they rely. This can all be displayed in the RRV;

- we are using arm's-length pricing for all our SLAs as part of business-as-usual charging practices;
- we have enhanced the legal agreements between our material entities to enable continued access to intellectual property and information technology in a resolution scenario;
- we have established a series of intercompany facilities agreements to enable continued access to physical office facilities in a resolution scenario;
- we have transferred substantially all our shared technology fixed assets into material service entities;
- we have identified all resolution-critical external vendors and have negotiated modifications of our legal agreements with them to provide for the continuity of service for all other entities, even if a contracting entity enters some form of bankruptcy proceedings; and
- we have created a series of playbooks that describe the arrangements made to safeguard against the loss of access to employees, vendors, technology, intellectual property or facilities in the event that any of our subsidiaries providing material intercompany services enters into bankruptcy proceedings.

Legal Obstacles Associated with Financial Support and Emergency Motions

Creditor Challenge: The provision of financial support to participating material operating entities is a critical component of our preferred resolution strategy because it allows these entities to avoid potential resolution proceedings themselves. However, we recognize the risk that a legal challenge by the creditors of Group Inc. could potentially hinder the provision of such financial support, and we have taken a number of steps to reduce the likelihood that such a challenge would be successful:

- With the help of external counsel, we have prepared an analysis that identifies potential obstacles under state and bankruptcy law to the provision of financial support. This analysis includes a consideration of potential creditor challenges based on claims of fraudulent transfer, preference, breach of fiduciary duty, breach of indenture covenants and equitable claims to enjoin the provision of financial support. The analysis considers potential obstacles to each element of the planned financial support, the timing considerations implicated by potential claims, and the extent to which any adjudication could affect the execution of our preferred resolution strategy.
- We have established a new Funding IHC as a direct subsidiary of Group Inc. In business-as-usual conditions, it provides most of the overnight and term loans required by our participating

material entities and the parent company, and holds much of the firm's excess liquidity that is not pre-positioned at participating material entities. Importantly, the Funding IHC has no external creditors and it does not enter proceedings under our preferred resolution strategy. The Funding IHC reduces the need for Group Inc. to contribute significant assets to material entities during the preference period that would precede its bankruptcy filing. See page 27 for a more detailed discussion of the Funding IHC.

- We have put in place a CLSA to which Group Inc., the Funding IHC, participating material operating entities, all our material service entities and certain intermediate holding companies are parties. If pre-determined capital or liquidity triggers are breached, the CLSA requires Group Inc. to transfer additional resources to the Funding IHC, and the Funding IHC to provide financial support to participating material operating entities. Group Inc. and the Funding IHC have granted a security interest in substantially all of their assets (other than Group Inc.'s equity interests in subsidiaries) to secure their obligations under the CLSA.

  The CLSA provides additional protection against creditor challenge because the decision to contribute Group Inc. assets, contractually tie the Funding IHC's support of participating material entities to specific metrics, and secure those obligations with collateral, is brought forward to a period when Group Inc. is solvent and has not entered the preference period that precedes a bankruptcy filing. *See page 28 for a more detailed discussion of the CLSA.*

First-Day Issues: We have prepared an analysis of issues that are likely to be raised at the hearing on the first-day emergency relief motion[20] and the best arguments in support of the motion. Issues that we have considered include, among others, possible assertions by creditors that they had insufficient opportunity to respond to the emergency motion, given that a creditors' committee is unlikely to have been appointed by this time. Because our preferred resolution strategy assumes that the parent company would seek to remain obligated on its guarantees, our analysis considers the legal basis upon which it would do so, the ability of the bankruptcy court to prevent third parties from interfering with the parent company or its subsidiaries in bankruptcy, and the interplay of public policy concerns (such as the need to preserve financial stability) with the bankruptcy court's decisions. Our analysis also considers the alternative request to transfer assets and certain credit enhancements to a trust-owned, newly-formed entity.

Regulatory Implications: We have discussed our preferred resolution strategy with key regulatory authorities globally, and have worked with outside counsel to consider the steps the firm could take to provide key domestic and foreign authorities with the necessary assurances to avoid objection to the emergency motion.

[20] *This is the hearing at which an affiliate in Chapter 11 proceedings seeks court approval of an order to stay all contracts under the ISDA Protocol, subject to the condition either that the claims are elevated to administrative priority status or that the contracts are transferred to a bankruptcy bridge company.*

Format: Our "Bankruptcy Playbook" that we have prepared includes a sample emergency motion and first day motions substantially in the form they would be presented to the bankruptcy court.

F. Legal Entity Rationalization and Separability

Legal Entity Structure

The corporate structure of our firm evolved over many years and, although it was shaped by many factors, resolution planning was not until recently an important consideration. For example, the growth of our investing businesses led to the proliferation of investing entities, especially since shared ownership arrangements often required the establishment of multiple holding companies reflecting the ownership structure. Our geographic expansion and the associated legal, regulatory and tax considerations also led to a substantial increase in the number of legal entities over time.

We have fundamentally transformed the corporate structure of our firm to make it more rational and less complex. Under the oversight of a newly-formed Legal Entity Structure and Booking Model working group, we first established a set of criteria for a more rational, less complex organization. We then evaluated ourselves against the criteria and identified almost 70 individual projects designed to conform our structure to them. We set ambitious goals for implementing these projects, and have completed almost all[21] of them. We have established a new process for setting up and liquidating entities, and we will carry out an annual re-assessment against the criteria going forward. Among the projects we have undertaken, we have:

- reduced the number of consolidated entities by a quarter since 2010;
- removed all cross-ownership between material entities;
- simplified ownership chains through the disciplined use of intermediate holding companies;
- reduced the number of material operating entities by merging two entities into GS&Co, our U.S. broker-dealer, and re-organizing the activities of two other entities, GSAF and GSALLC, which operate primarily in Hong Kong and no longer meet the criteria for material entity status;
- converted GS&Co. and JANY from partnerships into New York limited liability companies, thereby bringing their legal form into line with other material operating entities;
- rationalized the ownership structure of Asian operating and intermediate holding companies;
- split our U.K. group into core and non-core chains;
- consolidated and streamlined our non-bank mortgage activity under a new holding company with fewer legal entities;

[21] *We have reviewed the six projects that remain in progress and have concluded that they do not, individually or collectively, have a significant impact on our ability to be resolved or ensure continuity of service in resolution.*

- created distinct ownership groupings under a single holding company for our asset management and investing entities (our "business-in-a-box" initiatives); where certain entities could not be transferred into the "boxes" (for example, for regulatory or tax reasons,) we have developed playbooks for how the entities would be sold;
- enhanced the governance and technology around the creation of new entities and elimination of existing entities; and
- developed a technology platform that graphically presents our legal entity ownership structures and gives easy access to critical entity information that would be essential in a resolution scenario.

These efforts have now resulted in simple ownership lines for all our material operating and service entities, and logical groupings of other entities that enhance our ability to sell discrete operations in furtherance of our resolution plan.

Derivatives Booking Model

We have a large number of intercompany derivative transactions between our material operating entities[22]; this gives rise to a high degree of interconnectedness between such affiliates, with the consequent threat of a "domino" effect if one of them were to enter bankruptcy proceedings.

This situation arises because of our business-as-usual practice of centralizing market risk by product or inventory category in a small number of material operating entities: when the client-facing entity is not also the market risk-managing entity, each transaction with a client generates additional intercompany transactions. By way of example, GS Bank is our central market-risk entity for interest rate derivative products; if a client of GSI wishes to enter into a derivative transaction on an interest-rate product, GSI will itself transact with the customer and simultaneously enter into an equal-and-opposite derivative with GS Bank. This practice has numerous benefits from a business-as-usual risk management perspective: in particular, it maximizes the internal netting of market risk exposures, which results in fewer external hedging transactions with the market.

We have taken several steps to mitigate the effect of intercompany derivative transactions:

- All our affiliates that engage in external derivatives activity under ISDA Master Agreements signed the November 2015 ISDA Resolution Stay Protocol, which imposes a stay on certain cross-default and early termination rights in standard ISDA derivative, repo and securities lending contracts in the event of resolution. Consequently, our intercompany derivatives are afforded the protection of the ISDA Protocol.
- We adjusted our business practices to reduce the number of intercompany transactions: for example, by centralizing the risk management of foreign exchange spot-forward and e-

[22] *We also have intercompany derivative transactions between Group Inc. and material operating entities.*

commerce activities in GSI, we achieved a better alignment of risk-management with client-facing activities and, consequently, fewer intercompany transactions.

- We established new central clearing arrangements between material operating entities. For example, swap activity between GSI and GS Bank is now cleared at the London Clearing House, and that between GS&Co. and GS Bank is cleared at the Chicago Mercantile Exchange. The result is that a substantial percentage of our intercompany derivative transactions are now centrally cleared and no longer present a substantial “interconnectedness risk” in resolution.
- We greatly increased the rates of compression of derivative contracts through mutually agreed, arm’s-length transaction tear-ups, coupon blending and risk free netting.

As a result of the combined effect of the projects outlined above, the volume of intercompany derivative notionals has declined steadily in recent years (a 14% decline between 2015 and 2016 alone), and those that remain are conducted at arms-length with the posting of collateral daily, which greatly reduces the risk they present to the orderly execution of our resolution plan.

<u>Separability</u>

Although our preferred resolution strategy does not require the sale of business lines and our financial projections do not assume any such sales, we have nevertheless identified five discrete operations that could potentially be sold in either a recovery or resolution scenario (“Objects of Sale.”) The criteria that we established for a more rational, less complex organization, together with the steps taken to conform our legal entity structure to them, have greatly facilitated our ability to carry out such sales and have made a broader range of alternatives available to us in both recovery and resolution. These businesses were selected because their sale could potentially generate more value than could be achieved by winding them down, and because they are able to operate independently.

Two businesses would be sold as going concerns (Goldman Sachs Asset Management and Private Wealth Management), and three as portfolios of assets (Global Special Situations Group, Merchant Bank Division and Commodities). With the help of the relevant business units and specialized “deal teams”, we have prepared separation playbooks detailing the practical actions that would need to be taken to execute such options, with extensive detail on the business and separation considerations. We have also taken steps to facilitate due diligence procedures, such as by making relevant information easily available in “virtual” data rooms containing due diligence material that we expect a potential buyer to require.

We considered individual components of the lending and deposit businesses in GS Bank as potential Objects of Sale; however, we concluded that, compared with an orderly wind-down of the entity, the financial benefits of doing so are not significant. Nevertheless, the goal of having a viable standalone business is consistent with our strategy of growing our bank deposits and lending franchises, and we will revisit this question as we continue to build out our deposit and lending businesses.

G. Derivatives and Trading Activities

Wind-down of Derivatives Portfolios

The ability to wind down our derivative inventory in an orderly manner is a critical component of our efforts to ensure that Goldman Sachs can be resolved without significant risk to the financial system.

Characteristics of our Derivatives Portfolio: Although most of our material operating entities enter into derivative transactions, just three of them (GSI, GS Bank and GS&Co.) account for 94% of the notional value. Measured by notional value, of our open derivative contracts:

- almost half are centrally cleared: their systemic risk is reduced by the risk controls and financial resources that central clearing counterparts generally have at their disposal;
- well over a third are with banks and broker-dealers: such firms generally have experience in the novation of derivatives portfolios;
- slightly over a sixth are with corporate and other clients.

We expect the majority of our derivative counterparts would act rationally by reducing their exposure to entities that have lost investment grade status.

Alternative Wind-down Analyses: We have performed three separate analyses of the wind-down of our derivative inventory under three different scenarios:

- Our preferred resolution strategy
- The “active wind-down” scenario set out in the 2017 Guidance
- The “passive wind-down” scenario, also set out in the 2017 Guidance

Governance: Throughout the wind-down process, our Board, the boards of participating material operating entities and senior management will continue to guide trading decisions, and our business-as-usual risk management functions will continue to provide independent reporting and challenge.

Resources Used to Perform Analyses: We have deployed substantial resources across the firm, from both the revenue-producing and control divisions, to ensure that our analyses are sufficiently granular and reflect all the important characteristics of our derivative inventory. We developed our analyses using historical data, market information and expert management judgement.

We use the same technology platform to model the wind-down of our derivative inventory as to generate the firm’s liquidity (RLEN) and capital (RCEN) metrics. Consequently, any action that is modeled in the derivative wind-down strategy is simultaneously reflected in the RLEN and RCEN estimates. Furthermore, our business-as-usual IT systems have the functionality required to produce data at a sufficiently granular level of detail to facilitate timely decision making.

In the event that our derivative inventory needs to be wound down in practice, we believe that we have the resources and the technical know-how to do so: we have used business-as-usual systems to perform our analyses, and these would continue to function in a resolution scenario. We expect that our employee retention plan would ensure that the technical know-how would remain in the firm, and that our governance framework would continue to support and guide the trading decisions.

General Assumptions: For the purpose of our analyses, we have assumed that material operating entities work in a cooperative manner to wind down their derivative inventory: we believe that this is a reasonable assumption because, as we have demonstrated in a quantitative analysis, it results in the most economically beneficial outcome for all of them. Our analyses are based on the segmentation of our derivative inventory that is used for both business-as-usual risk-management and "Volcker Rule" reporting, because these segments represent groupings of transactions with broadly homogenous risk and asset types.

Preferred Resolution Strategy

The preferred resolution strategy for our derivative inventory is an orderly and active wind-down of all positions over an 18-month period. This strategy is highly consistent with the actions of market participants who have exited derivative businesses in the past. It is also generally consistent with the active wind-down scenario, except that two material operating entities (JANY and GSLPtnrs) enter proceedings at the same time as Group Inc., whereas they remain outside of proceedings in the active wind-down scenario.

We have identified three primary methods for winding down our derivative inventory:

- Risk-manage shorter dated derivatives (<18 months remaining until contractual maturity) until they reach contractual maturity;
- Enter into cleared hedging trades to offset the firm's open cleared transactions, and subsequently "compress"[23] both transactions; and
- Sell longer dated derivatives (>18 months remaining until contractual maturity) in portfolios of homogenous risk and asset type, via portfolio novation.

Assumptions: Our analysis assumes that all the constraints specified by the Agencies for the active wind-down scenario apply also to our preferred strategy. As we have confirmed with the rating agencies that our strategy of winding down our material operating entities would cause them to rate such entities below investment grade, this requires us to only use cleared and listed instruments for hedging. We are also required to reflect the impact and cost associated with the basis risk that this constraint would place on the firm.

[23] *By "compress", we refer to the process by which two or more counterparts agree to terminate offsetting or near-offsetting transactions at market-neutral prices.*

Time Horizon: The decision to exit all derivative positions within an 18-month period is driven by our quantified assessment that, beyond this time horizon, the operating costs of maintaining the infrastructure for managing derivatives start to outweigh the lower exit costs of holding residual inventory until maturity. We recognize that the characteristics of some positions (e.g., their liquidity, structure or counterparty) could make the 18-month target a challenging one, and we have therefore focused significant attention on identifying any such positions and developing an exit plan for them. Based on a detailed qualitative and quantitative review, we have concluded that we could exit all our derivative positions, provided we are prepared to incur the incremental cost of doing so. We have quantified these costs, and have performed a sensitivity analysis which demonstrates that the firm has sufficient capital and liquidity to execute our preferred resolution strategy, even if additional time is required to exit the last positions.

Inter-Affiliate Transactions: During the 18-month wind-down period, inter-affiliate derivative trades will continue to be supported and our practice of centralizing market risk management will continue as before. As portfolios of third party derivatives are sold, the corresponding inter-affiliate transactions are terminated at arm's-length, mid-market prices. Consequently, all participating material operating entities are able to exit their inter-affiliate derivative transactions at the same time the corresponding portfolios are sold.

Systemic Impact: Based on the analysis we have performed, we have concluded that our derivative inventory can be wound down without significant systemic impact: over 50% of our derivatives have a contractual maturity of less than 18 months and a further 19% lend themselves to the "compression" process (whereby offsetting and near-offsetting OTC derivative transactions are matched and bi-laterally terminated at mutually agreed prices). This leaves approximately 30% of our positions that must be actively wound down in the market. Our analysis demonstrates that other market participants have the capacity and capabilities to take on this remaining inventory, and our customers have sufficient alternative providers who could take on their business. We have also+ concluded, based on an analysis that we performed, that allowing JANY and GSLPtnrs to enter proceedings has no long-term systemic impact.

Active Wind-down

As already noted, our preferred resolution strategy is broadly consistent with the active wind-down set out in the 2017 Guidance. The primary difference is that, under the active wind-down scenario, two material operating entities (JANY and GSLPtnrs) are recapitalized and remain outside of proceedings for the duration of the wind-down.

Passive Wind-down

Under the passive wind-down scenario, we estimate the costs required to support a passive run-off of our derivative inventory until contractual maturity of all transactions, or until resource depletion. Our analysis shows that, using the regulator-determined scoring methodology, our firm drops below the threshold to be considered a Globally Systemically Important Bank just two years after commencement of the parent company's bankruptcy proceedings. We have also completed an analysis at the 20-year point and have determined that, based on the risk profile of the remaining inventory, we would not present a systemic risk to the financial markets at that time.

Conclusions Drawn

Having completed our detailed consideration of the firm's derivatives inventory, we conclude that:

- under all three scenarios that we have explored, we have sufficient capital and liquidity to wind down our derivatives inventory in a manner that is non-systemic to the financial system;
- we have the operational and technical know-how to do so in practice;
- our business-as-usual IT resources are adequate to support decision-making during the wind-down period; and
- our governance framework is sufficiently strong to support and guide trading decisions so that risk can be appropriately managed during the wind-down of our derivatives portfolios.

In addition, we have put in place governance procedures designed to ensure that new derivatives trading activities do not impair the ability to resolve our firm.

Capabilities - Prime Brokerage

We have taken numerous steps to help ensure that the clients of our prime brokerage business are ready and able to transfer their business to alternative service providers in a manner that does not disrupt their business or exacerbate the liquidity position of our firm. The following are among the steps we have taken:

- we have actively encouraged clients to maintain multiple prime brokerage relationships and the vast majority of them now do so;
- we have built automated tools to enable streamlined transfers of assets across legal entities and custody platforms; and
- we have developed plans to help ensure that all prime brokerage clients' cash can be transferred to third parties during the wind-down phase.

5. Actions to Address Shortcomings in our 2015 Plan

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A. Introduction

We have fully remediated all of the shortcomings in our 2015 Resolution Plan that were identified by the Agencies in their April 2016 letter to Goldman Sachs. In order to ensure that these shortcomings were properly addressed, their remediation fell under the oversight of a senior committee within the firm: the Firmwide Regulatory Findings Remediation Governance Committee.

We have summarized (in italics, below) each of the shortcomings that the Agencies identified, together with a high-level description of the actions we took to address them.

B. Liquidity - RLEN

The Agencies found that our 2015 Resolution Plan did not have an appropriately supported liquidity methodology to estimate the amount of liquidity needed by all material entities[24] during resolution. They noted that our 2015 Resolution Plan provided estimates of stressed outflows during the runway period and into the postfailure period for key material entities, but did not detail the specific level of liquidity needed by each material entity to operate following Group Inc.'s bankruptcy filing. They also noted that the daily projections of ending HQLA for key material entities were not sufficiently supported, and the estimates did not include a breakout of inter-affiliate arrangements that could impact material entity liquidity forecasts.

We have developed a comprehensive financial model to estimate the liquidity needed to stabilize our participating material entities in resolution; we have validated it in accordance with our model review policy; and we have built it into our business-as-usual practices such that it forms the

[24] *"Material entities" refers to the material entities identified in the 2015 Plan.*

foundation of our enhanced, liquidity-based "triggers and alerts" framework. For a description of the work we have done in this area, please see the "Liquidity" section on page 30.

C. Derivatives and Trading Activities

The Agencies found that our 2015 Resolution Plan lacked specificity regarding the wind-down of our derivatives portfolio, did not address material financial interconnections among entities, and did not provide sufficient detail on the target reduction levels for OTC derivatives and their systemic risk profile.

We have prepared a highly detailed analysis which demonstrates in detail how our derivatives portfolio can be segmented, packaged and wound down. For a description of the work we have done in this area, please see the "Derivatives and Trading Activities" section on page 41.

D. Playbooks and Triggers

The Agencies found that we had failed to demonstrate that certain actions needed to execute the firm's resolution strategy would be taken when required, because:

- *the triggers for escalation of information to senior management and our Board and for the consideration of resolution-related actions were not linked directly to specific actions;*
- *the triggers may not have been appropriately calibrated to ensure timely execution of resolution-related actions; and*
- *the Board's playbook lacked objective and timely triggers.*

We have fundamentally re-assessed our framework of "triggers and alerts" in light of the Agencies' guidance and the RLEN and RCEN requirements. Our 2017 Resolution Plan now includes an updated Directors' Resolution Playbook that incorporates clearly identified triggers, linked to specific actions, for:

- the taking of recovery actions;
- the recapitalization of certain subsidiaries;
- the funding of certain subsidiaries; and
- the timely execution of a bankruptcy filing and related pre-filing actions.[25]

We have also put in place a Funding IHC, and have executed a contractually binding CLSA, both of which are designed to ensure that sufficient and timely financial resources would be provided to

[25] *Key pre-filing actions include the preparation of the emergency motion required to be decided shortly after Group Inc.'s bankruptcy filing, consistent with the ISDA Protocol.*

participating material operating entities. For a more complete description of the Funding IHC and CLSA, please see pages 27 and 28, respectively.

E. Pre-Bankruptcy Parent Company Support

The Agencies identified a shortcoming in our 2015 Resolution Plan regarding the limited analysis of the range of potential legal challenges that could adversely affect Group Inc.'s approach to providing capital and liquidity to subsidiaries prior to bankruptcy, so that they could remain open and continue operating for a sufficient period to allow their orderly wind-down or other disposition outside of resolution proceedings.

As described above, in order to guard against potential challenges to the planned financial support, we have established a Funding IHC and have executed a contractually binding Capital and Liquidity Support agreement. In addition, our 2017 Resolution Plan includes a detailed legal analysis of the potential challenges under state and bankruptcy law, as well as mitigants to the planned provision of additional capital and liquidity to material entities, and an updated Directors' Resolution Playbook which reflects these developments.

For a more complete description of the work we work we have done in this area, please see the "Legal Obstacles Associated with Financial Support and Emergency Motions" section on page 36.

F. Runway

The Agencies found that the length of the runway assumed in our 2015 Resolution Plan was operationally unrealistic because the proposed recapitalization would require significant global coordination across the firm's governance bodies, and was assumed to be supported by regulators in all relevant jurisdictions.

We have assumed a longer runway in our 2017 Resolution Plan, based on a fundamental re-assessment of the time needed to complete the tasks required during this period, including the preparation and execution of bankruptcy filings and coordination with various governance bodies within the firm and with regulators in the United States and other jurisdictions. In addition, we have advanced our preparation for the bankruptcy filings we would submit under our preferred resolution strategy, and our 2017 Resolution Plan includes a "Bankruptcy Playbook" that contains anticipated first-day and emergency motions. Together with the re-calibration of our framework of triggers and alerts discussed above, this is intended to ensure that sufficient time is allowed for the operational execution of our resolution strategy. Furthermore, we have developed comprehensive communications playbooks which address coordination with regulators in all relevant jurisdictions.

G. Bankruptcy Legal Issues

The Agencies noted that we did not provide sufficient basis for the assumption in our 2015 Resolution Plan that a bankruptcy court would "issue an order meeting the 'DIP Stay Condition,'" as defined in the ISDA 2014 Resolution Stay Protocol, subsequently superseded by the ISDA 2015 Universal Resolution Stay Protocol (the "ISDA Protocol").

In our 2017 Resolution Plan, we have set out the legal support for the elevation in priority of Group Inc.'s credit enhancement obligations, which is the primary mechanism by which we would seek to stay the termination of derivatives transactions at our participating operating entities; we have also included a draft emergency motion and proposed form of order detailing the issues a bankruptcy court would likely consider. In addition, we have provided an alternative request for the transfer of assets and certain credit enhancements to a trust-owned, newly-formed entity, which would meet the "Transfer Stay Condition" in the ISDA Protocol.

6. Resolution Plan Governance

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A. Introduction

Our resolution planning process is a complex one, involving hundreds of members of staff across numerous different disciplines and geographic locations. For such a process to be successful, a robust governance structure is essential: this helps ensure that our Board and senior management are in a position to exert oversight, challenge assumptions and give direction; it also helps ensure that the various strands of work are appropriately connected and organized so that the final plan does not contain gaps or inconsistencies.

B. Oversight Bodies

The following Committees and groups have overseen our resolution planning process:

- Board of Directors: As the body responsible for establishing the firm's strategic direction and overseeing the performance of its business and management, our Board oversees the development of the Resolution Plan, challenges its assumptions and ensures that adequate resources are provided for the many projects needed to be undertaken. Our Board reviews and approves the Resolution Plan before it is submitted to the Agencies. It also reviews and approves any material changes to the Resolution Plan that may occur during the year before submission to the Agencies.

- Senior Management: Senior executives of GS Group, including the Chief Financial Officer and other members of the Executive Office, coordinate the development and maintenance of our Resolution Plan. These senior executives are also responsible for presenting the Resolution Plan to our Board for its review and approval.

- Regulatory Findings Remediation Governance Committee: This committee is charged with ensuring that all regulatory findings are resolved to the satisfaction of senior management, Internal Audit, our Board and, ultimately, the Agencies. It oversaw the remediation of the shortcomings in our 2015 Resolution Plan that were identified by the Agencies.

- Firmwide Finance Committee: The Firmwide Finance Committee has oversight responsibility for liquidity risk, the size and composition of the firm's balance sheet and capital base, and credit ratings. This Committee reviews and approves the Resolution Plan before it is submitted to our Board.

- Firmwide Asset Liability Committee (ALCO): This Committee provides a forum for discussion of matters related to firmwide and business unit specific liquidity, funding and asset-liability management. This Committee reviews and approves the Resolution Plan before it is submitted to our Board.

- Resolution Steering Group: The Resolution Steering Group meets weekly and is co-chaired by the firm's Global Head of Compliance (who was, until recently, the firm's Principal Accounting Officer) and Treasurer (who was previously the firm's Head of Operations). Members of the Resolution Steering Group include the Steering Group Operating Officer (described below) and representatives of a wide range of departments. The Resolution Steering Group develops and maintains the Resolution Plan, ensures that it contains information required by the relevant rules, provides direction and strategy, helps to resolve issues, makes policy decisions, approves scope changes and sets deliverables. The Resolution Steering Group also acts as a liaison with senior executives and the Agencies.

  Through the Steering Group Operating Officer, the Resolution Steering Group coordinates the activities of various working groups (see below), which all report to it on a regular basis

- Recovery and Resolution Working Groups: A separate Recovery and Resolution Working Group has been assigned to each of the "capabilities" outlined in the 2017 Guidance. For example, the Legal Entity Structure and Booking Model Working Group oversees all the firm's efforts on these topics. These working groups are responsible for the design, testing and implementation of the projects required to bring our existing capabilities into line with the 2017 Guidance. The working groups report to the Resolution Steering Group and give it regular updates on the progress that has been made.

- Steering Group Operating Officer: This is the senior management official primarily responsible for overseeing the development, maintenance, implementation and filing of the Resolution Plan in compliance with the Agencies' resolution planning regulations and guidance. He is responsible for the day-to-day maintenance of the workstream activities that develop specific components of the Resolution Plan. The Steering Group Operating Officer and the supporting team are the content experts who manage the overall Resolution Plan activities, meet with the various global regulatory bodies, and respond to comments on various regulatory proposals. In addition, the Steering Group Operating Officer meets and engages with outside legal counsel and consultants as necessary.

C. Ongoing Change Management

We recognize that the introduction of a new business activity or a significant change to an existing activity creates the potential to add complexity and make recovery or resolution more difficult. To address this, we have updated our new activity process so that, as part of each approval, the impact on our resolution strategy is considered and addressed. We have also updated the charters of relevant firm committees to provide that they should specifically consider resolution matters as part of their routine oversight and decision-making processes. In addition, we have implemented a new process governing the creation of new entities and the liquidation of unnecessary ones.

D. Testing and Challenge Process

We employ a classic "three lines of defense" governance framework across all aspects of our Resolution Plan. Our first line of defense is comprised of the business units that are responsible for specific aspects of our plan and associated capabilities; the second line is our Resolution Steering Group (or, in the case of financial models, our independent Model Review Group); and the third line is our Internal Audit function.

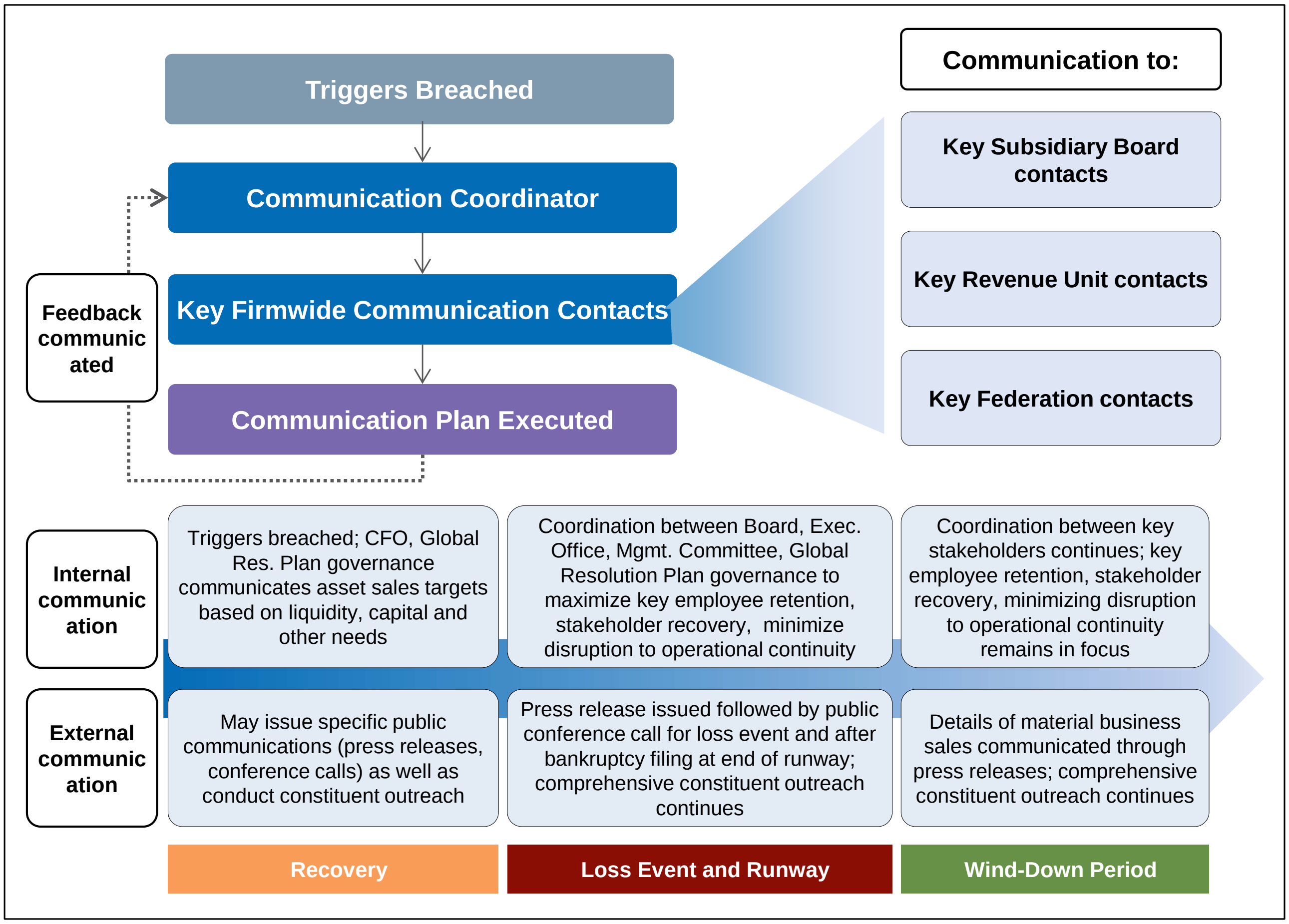
In addition, depending on the nature of the topic, we have submitted several aspects of our Resolution Plan to different forms of either testing or challenge. For example, we have:

- Carried out, under the oversight of external counsel, a "test run" of our ability to produce in a timely fashion the information needed to support a bankruptcy filing;
- Carried out a test of our ability to produce in a timely manner the information required to execute our employee retention plan;
- Met with all of our major FMUs and agent banks, as well as with the major rating agencies, to discuss our Resolution Plan and validate that the assumptions pertinent to their areas are realistic;
- Held meetings with internal governance bodies, including the Firmwide Finance Committee and ALCO, to discuss and review the Resolution Plan; and
- Held meetings for our Board and, as appropriate, for the boards of material entities, who have challenged and provided direction to our Resolution Plan.

E. Communication Strategy

Timely communication, both internally and externally, is vital for a successful resolution plan. Though there are many factors at play during a resolution scenario, we have a comprehensive and carefully crafted communication strategy in place as part of our Resolution Plan.

Please refer to the diagram below for a summary of our communication flow:



7. Conclusion

Resolution planning has been the subject of intense management focus over the last five years and, as a result of the work we have done, we believe that our preferred resolution strategy could be successfully executed. We have:

- Built the capability of measuring our financial resources to support resolution strategy execution needs and taken steps to ensure such resources will be available in resolution through pre-positioning, the creation of the Funding IHC and the signing of the CLSA;
- Established a "triggers and alerts" governance mechanism for the escalation of information and decision-making, including the recapitalization and funding of participating material entities and filing of bankruptcy motions;
- Changed our organizational structure to make the firm more resolvable and put in place a governance framework to maintain it;
- Provided a detailed analysis to demonstrate how our firm, and in particular our derivative books, could be wound down in the event of a resolution; and
- Developed operational continuity capabilities.

While we are confident in our preferred resolution strategy, we believe that our firm could be resolved under a wide range of scenarios because we have developed the capabilities, performed sensitivity analyses and created the optionality required to make this possible.

We consider that our preferred resolution strategy is aligned with the interests of the regulatory agencies in the countries where our operations are concentrated because it is not generally in their interests to put large entities into bankruptcy proceedings if they maintain sufficient capital and liquidity to meet all their obligations.

We are therefore confident that our resolution strategy could be executed successfully and our firm could be wound down in an orderly manner without jeopardizing global financial markets, requiring taxpayer support, or causing losses to the FDIC's Deposit Insurance Fund.

Supporting Information

The following pages contain background information about Goldman Sachs as support and context for our resolution strategy.

SI 1. Description of Core Business Lines

Introduction

Goldman Sachs is a leading global investment banking, securities and investment management firm that provides a wide range of financial services to a substantial and diversified client base that includes corporations, financial institutions, governments and individuals.

Details about our businesses are included in our Annual Report on Form 10-K for the year ended December 31, 2016 (our “2016 Form 10-K”). All references to 2016, 2015 and 2014 refer to our years ended, or the dates, as the context requires, December 31, 2016, December 31, 2015 and December 31, 2014, respectively.

Group Inc. is a bank holding company and a financial holding company regulated by the Federal Reserve Board. Our U.S. depository institution subsidiary, GS Bank USA, is a New York State-chartered bank.

Goldman Sachs has a number of important businesses within our four business segments: Investment Banking, Institutional Client Services, Investing & Lending and Investment Management. These businesses are the core of the Goldman Sachs franchise and allow us to serve clients and execute our strategy on a global basis. Recovery planning requires a definition of “core” and “non-core” businesses based on the ability of a firm to separate business lines for sale or closure, to raise or preserve liquidity, increase capital ratios and reduce balance sheet size.

Resolution planning, in contrast, requires a further definition of “core” because certain businesses (i.e., those business lines and associated support operations, services and functions that, upon failure, would result in a material loss of revenue, profit or franchise value) may need to be singled out for specific actions as part of a resolution exercise. We define these business lines, which are primarily included in our Investment Banking and Institutional Client Services segments, as core business lines. Other businesses in our Investing & Lending and Investment Management segments are important for GS Group, but have not been defined as core business lines for purposes of the Resolution Plan.

The remainder of this Section describes only the firm’s core business lines.

Investment Banking

Investment Banking serves public and private sector clients around the world. We provide financial advisory services and help companies raise capital to strengthen and grow their businesses. We seek to develop and maintain long-term relationships with a diverse global group of institutional clients, including governments, states and municipalities. Our goal is to deliver to our institutional clients the entire resources of the firm in a seamless fashion, with investment banking serving as the main initial point of contact with Goldman Sachs.

Financial Advisory. Financial Advisory includes strategic advisory assignments with respect to mergers and acquisitions, divestitures, corporate defense activities, restructurings, spin-offs and risk management. In particular, we help clients execute large, complex transactions for which we provide multiple services, including cross-border structuring expertise. Financial Advisory also includes revenues from derivative transactions directly related to these client advisory assignments. We also assist our clients in managing their asset and liability exposures and their capital.

Underwriting. The other core activity of Investment Banking is helping companies raise capital to fund their businesses. As a financial intermediary, our job is to match the capital of our investing clients, who aim to grow the savings of millions of people, with the needs of our public and private sector clients, who need financing to generate growth, create jobs and deliver products and services. Our underwriting activities include public offerings and private placements, including local and cross-border transactions and acquisition financing, of a wide range of securities and other financial instruments, including loans. Underwriting also includes revenues from derivative transactions entered into with public and private sector clients in connection with our underwriting activities.

- **Equity Underwriting.** We underwrite common and preferred stock and convertible and exchangeable securities. We regularly receive mandates for large, complex transactions and have held a leading position in worldwide public common stock offerings and worldwide initial public offerings for many years.

- **Debt Underwriting.** We underwrite and originate various types of debt instruments, including investment-grade and high-yield debt, bank loans and bridge loans, including in connection with acquisition financing, and emerging- and growth-market debt, which may be issued by, among others, corporate, sovereign, municipal and agency issuers. In addition, we underwrite and originate structured securities, which include mortgage-related securities and other asset-backed securities.

Institutional Client Services

Institutional Client Services serves our clients who come to us to buy and sell financial products, raise funding and manage risk. We do this by acting as a market maker and offering market expertise on a global basis. Institutional Client Services makes markets and facilitates client transactions in fixed income, equity, currency and commodity products. In addition, we make markets in and clear client transactions on major stock, options and futures exchanges worldwide.

Market makers provide liquidity and play a critical role in price discovery, which contributes to the overall efficiency of the capital markets. Our willingness to make markets, commit capital and take risk in a broad range of products is crucial to our client relationships.

Institutional Client Services activities are organized by asset class and include both “cash” and “derivative” instruments. “Cash” refers to trading the underlying instrument (such as a stock, bond or barrel of oil). “Derivative” refers to instruments that derive their value from underlying asset prices, indices, reference rates and other inputs, or a combination of these factors (such as an option, which is the right or obligation to buy or sell a certain bond or stock index on a specified date in the future at a certain price, or an interest rate swap, which is the agreement to convert a fixed rate of interest into a floating rate or vice versa).

Our Institutional Client Services segment is comprised of the following:

Fixed Income, Currency and Commodities Client Execution. Includes client execution activities related to making markets in both cash and derivative instruments for interest rate products, credit products, mortgages, currencies and commodities.

- **Interest Rate Products.** Government bonds (including inflation-linked securities) across maturities, other government-backed securities, repurchase agreements, and interest rate swaps, options and other derivatives.
- **Credit Products.** Investment-grade corporate securities, high-yield securities, credit derivatives, exchange-traded funds, bank and bridge loans, municipal securities, emerging market and distressed debt, and trade claims.
- **Mortgages.** Commercial mortgage-related securities, loans and derivatives, residential mortgage-related securities, loans and derivatives (including U.S. government agency-issued collateralized mortgage obligations and other securities and loans), and other asset-backed securities, loans and derivatives.
- **Currencies.** Currency options, spot/forwards and other derivatives on G-10 currencies and emerging-market products.
- **Commodities.** Commodity derivatives and, to a lesser extent, physical commodities, involving crude oil and petroleum products, natural gas, base, precious and other metals, electricity, coal, agricultural and other commodity products.

Equities. Includes client execution activities related to making markets in equity products and commissions and fees from executing and clearing institutional client transactions on major stock, options and futures exchanges worldwide, as well as OTC transactions. Equities also includes our securities services business, which provides financing, securities lending and other prime brokerage services to institutional clients, including hedge funds, mutual funds, pension funds and foundations, and generates revenues primarily in the form of interest rate spreads or fees.

As a market maker, we facilitate transactions in both liquid and less liquid markets, primarily for institutional clients, such as corporations, financial institutions, investment funds and governments, to assist clients in meeting their investment objectives and in managing their risks. In this role, we seek to earn the difference between the price at which a market participant is willing to sell an instrument to us and the price at which another market participant is willing to buy it from us, and vice versa (i.e., bid/offer spread). In addition, we maintain inventory, typically for a short period of time, in response to, or in anticipation of, client demand. We also hold inventory to actively manage our risk exposures that arise from these market-making activities.

Our results are influenced by a combination of interconnected drivers, including (i) client activity levels and transactional bid/offer spreads, and (ii) changes in the fair value of our inventory and interest income and interest expense related to the holding, hedging and funding of our inventory.

The amount and composition of our net revenues vary over time as these drivers are impacted by multiple interrelated factors affecting economic and market conditions, including volatility and liquidity in the market, changes in interest rates, currency exchange rates, credit spreads, equity prices and commodity prices, investor confidence, and other macroeconomic concerns and uncertainties.

SI 2. Material Entities and their Operational and Financial Interconnectedness

We have designated those subsidiaries of the firm that are significant to the activities of a critical operation or core business line as “material entities.” We distinguish between material operating entities (those that are engaged in an operating business) and material service entities (those that provide services to other material entities).

The following is a list of our material entities:

Material Entities		Principal Activities	Country or State of Incorporation
Covered Company	The Goldman Sachs Group, Inc.	Parent Holding Company	Delaware
Material Operating Entities	Goldman Sachs & Co. LLC	Broker-Dealer	New York
	Goldman Sachs International	Broker-Dealer	England
	Goldman Sachs Bank USA	Insured Depository Institution	New York
	J. Aron & Company LLC	Commodity Market Maker	New York
	Goldman Sachs Japan Co., Ltd	Broker-Dealer	Japan
	Goldman Sachs International Bank	Bank	England
	Goldman Sachs Asset Management, L.P.	Investment Advisor	Delaware
	Goldman Sachs Asset Management International	Investment Advisor	England
	Goldman Sachs Lending Partners LLC	Lending Company	Delaware
Material Service Entities	Goldman Sachs Funding LLC	Funding IHC	Delaware
	Goldman Sachs Services Private Limited	Staffing Service Entity	India
	Goldman Sachs Services LLC	Staffing Service Entity	Delaware
	Goldman Sachs Property Management	Physical Asset Service Entity	England
	Goldman Sachs Property Management USA LLC	Physical Asset Service Entity	Delaware
	Goldman Sachs Services (Asia) Limited	Staffing/Physical Asset Service Entity	Hong Kong
	Goldman Sachs Services (Singapore) Pte. Ltd.	Staffing/Physical Asset Service Entity	Singapore
	Goldman Sachs (UK) Svc. Limited	Staffing Service Entity	England
	Goldman Sachs Japan Services Co., Ltd.	Staffing/Physical Asset Service Entity	Japan

Financial Information by Material Entity as of December 31, 2016

We consider that a subsidiary is significant to the activities of a critical operation or core business line if it accounts for more than 10% of a core business line's revenues, houses a significant portion of a critical operation, or holds more than a "de minimis" percentage[26] of our support staff or technology assets.

The following is a summary of key financial metrics for our material entities:

$ in billions	Total Assets	Total Liabilities excluding capital and unsecured intercompany debt	Capital and Unsecured Intercompany Debt [1]	Net Revenues [2]	Pre-Tax Earnings [2]
	$	$	$	$	$
The Goldman Sachs Group, Inc.	295.7	202.6	86.9	-0.2	-0.9
Goldman Sachs & Co. LLC	423.4	386.1	37.3	11.1	2.8
Goldman Sachs International	360.6	284.5	76.1	6.2	2.0
Goldman Sachs Bank USA	159.1	123.6	35.5	3.2	2.2
J. Aron & Company LLC	18.7	15.4	3.2	1.0	0.4
Goldman Sachs Japan Co., Ltd.	85.8	78.7	7.1	0.8	0.3
Goldman Sachs International Bank	42.2	36.3	5.9	0.2	0.2
Goldman Sachs Asset Management L.P.	0.8	0.2	0.6	1.7	0.3
Goldman Sachs Asset Management Int'l	0.5	0.1	0.4	0.6	0.2
GS Lending Partners LLC	7.3	1.8	5.5	0.4	0.3
Material service entities	1.6	0.5	1.1	0.0	0.0

Note 1: The amount quoted for The Goldman Sachs Group, Inc. does not include unsecured intercompany debt
Note 2: The amount quoted for The Goldman Sachs Group, Inc. does not include dividends or equity in the earnings of subsidiaries

Information in the table above has been prepared in accordance with U.S. Generally Accepted Accounting Principles on a stand-alone entity basis.

[26] *For these purposes, we consider more than 3% of support staff, 5% of technology assets, or 2% of both in the same entity to be greater than "de minimis"*

Interconnectedness among Material Entities

Both the nature of our businesses and our corporate legal entity structure give rise to financial and operational interconnectedness among subsidiaries within our group and between our parent company and subsidiaries. We have identified the following areas of interconnectedness:

Intercompany Transactions. Group Inc. and its subsidiaries enter into transactions with each other for risk management, client facilitation or other reasons. In these situations, the transactions are based on agreed terms in intercompany agreements, entered into on an arms' length basis and collateralized as appropriate on a next day basis. In order to facilitate transactions with clients in other countries, our material operating entities offer introducing arrangements for other affiliates; this practice would cease in resolution when we stop entering into new transactions with counterparties.

As at December 2016, the principal intercompany transactional or hedging relationships between our material operating entities are set out below:

Material Operating Entity Transactional or Hedging Relationships

	Group Inc.	GS&Co.	GSI	GS Bank USA	JANY	GSJCL	GSIB	GSAM	GSAMI	GSLPtnrs
Group Inc.		X	X	X	X					
GS&Co.	X		X	X	X	X	X		X	X
GSI	X	X		X	X	X	X		X	X
GS Bank USA	X	X	X		X	X	X			X
JANY	X	X	X	X		X	X			X
GSJCL		X	X	X	X					
GSIB		X	X	X	X					
GSAM										
GSAMI		X	X							
GSLPtnrs		X	X	X	X					

x = Transactional or Hedging relationship

We have devoted substantial resources to reducing this aspect of interconnectedness, primarily through trade compressions (whereby offsetting and near-offsetting OTC derivative transactions are matched and bi-laterally terminated at mutually agreed prices), clearing of intercompany transactions, collateralization of exposures and better alignment of client transactions and risk-management entities. Other steps we have taken are discussed in more detail below (see "Actions we have taken to mitigate the effect of interconnectedness and ensure a more rational, less complex legal entity structure").

Subsidiary Capital and Funding Policies. Equity capital is raised by Group Inc., which downstreams capital to its subsidiaries to meet their capital needs. The majority of the firm's unsecured funding is also raised by Group Inc., which lends it to the Funding IHC pursuant to a subordinated funding note ("Funding Note")[27]. The Funding IHC lends some of these funds to certain material entities to meet their funding and liquidity needs, and also lends some back to Group Inc. via the Revolver[27] to meet the funding and liquidity requirements of Group Inc. and other subsidiaries. The benefits of a centralized approach to subsidiary capitalization and funding include enhanced control and greater flexibility to meet our subsidiaries' changing requirements. Funding is also raised at the subsidiary level through a variety of products, including secured funding, unsecured borrowings and deposits. The table below reflects the material[28] unsecured funding relationships among Group Inc., the Funding IHC and material operating entities.

Funding Relationships between Material Operating Entities

Material Entity	Borrows from Parent or Funding IHC	Borrows from Material Entities	Lends to Material Entities
Group Inc.	✘	✓	✓
GS&Co.	✓	✘	✘
GSI	✓	✓	✘
GS Bank	✓	✘	✘
JANY	✘	✘	✓
GSJCL	✓	✘	✘
GSIB	✘	✓	✓
GSAM	✘	✘	✘
GSAMI	✘	✘	✘
GSLPtnrs	✓	✘	✓

To mitigate the risk of disruption to our inter-company funding, we have pre-positioned liquidity and intercompany debt at key material entities; we also hold substantial liquidity at our parent company and the Funding IHC, which gives us the flexibility to place additional liquidity at affiliates in the event that it is required.

Secured Funding. Many of the firm's material operating entities lend to and borrow from each other on a secured basis, generally as a mechanism for collateral realignment, cash reinvestment, or sourcing securities for an entity's GCLA. The majority of these transactions are collateralized by GCLA-eligible securities, which are highly liquid. A significant portion of the remainder relates to

[27] Both the Funding Note and the Revolver are part of the CLSA

[28] Balances of more than $500 million as of December 31, 2016 are considered material.

the covering of short positions, which allows the lending entity to manage risk, or is used for collateral and funding optimization.

Cross-default Provisions. Historically, documents that govern our OTC derivative transactions usually contained “cross-default” provisions; these give counterparties the right to terminate their transactions with one Goldman Sachs legal entity, even if it is solvent and performing its obligations under the transaction, because of certain credit-related events at certain other Goldman Sachs legal entities. However, we have mitigated the effect of cross-default provisions; all our affiliates that engage in external derivatives activity under ISDA Master Agreements signed the November 2015 ISDA Resolution Stay Protocol, which imposes a stay on certain cross-default and early termination rights in standard ISDA derivative, repo and securities lending contracts in the event of resolution. Consequently, our intercompany derivatives are afforded the protection of the ISDA Protocol.

Guarantees of Subsidiaries. Group Inc. has guaranteed the payment obligations of GS&Co. and GS Bank USA, in both cases subject to certain exceptions. Group Inc. also provides guarantees to clients in respect of certain transactions entered into by subsidiary companies. GS Group subsidiaries only provide guarantees to other subsidiary companies on a very limited basis. We do not have and do not permit upstream guarantees of the parent company by its subsidiaries. Group Inc. guarantees do not contain cross-default provisions, and do not on their own trigger early termination rights.

In order to mitigate this aspect of interconnectedness, we have obtained at least one stand-alone rating from a major credit rating agency for each of our five largest material operating entities. The resolution-related benefit of this is to reduce the number of transactional guarantees that Group Inc. is required to issue.

Access to Market Infrastructure. Certain GS Group subsidiaries provide other affiliates with access to various FMUs such as exchanges, clearing houses, custodians and agent banks. Such transactions are governed by intercompany agreements and charged at arms’ length pricing.

The table below shows our material operating entities’ relationships with the twenty-one FMUs, including agent banks, that are most important to them. Entities with direct membership in an FMU are marked with an “X”, while those accessing the FMU indirectly through another material entity are marked with the material entity providing access to the FMU. For example, GS&Co. provides access to GSI at the Chicago Mercantile Exchange Clearing, Inc. Note that none of the entities that provide other material operating entities access to FMUs are projected to go into proceedings.

Material Operating Entities' Access to Financial Market Utilities

	Group Inc.	GS&Co.	GSI	GS Bank USA	JANY	GSJCL	GSIB	GSAM	GSAMI	GSLPtnrs
Chicago Mercantile Exchange Clearing, Inc.		X	A	A	A	A	A			A
Citibank, N.A.	X	X	X	X	X	X	X	X	X	X
CLS Bank Limited		X	A	A	A	A	A			
The Depository Trust Company	A	X	A	X						
Eurex Clearing AG		B	X	B	B		X			
Euroclear	X	X	X	X	X	X	X			
European Central Counterparty N.V.		B	X							
Fixed Income Clearing Corporation		X	A	A						
HSBC	X	X	X	X	X	X	X	X	X	X
ICE Clear Credit LLC		X	X	B	B		B			B
ICE Clear Europe		X	X	B	B	B	B			B
ICE Clear U.S.		X	A	A	A		A			
Japan Securities Clearing Corporation		C	C	C		X				
Japan Securities Depository		C	C			X				
LCH Clearnet Ltd.		X	X	X	B		X			
LCH Clearnet S.A.		B	X	B	B		X			B
National Securities Clearing Corporation Ltd.		X	A	A						
Options Clearing Corporation		X	A	A	A	A				
Standard Chartered Bank	X	X	X	X	X	X	X			
SWIFT	X	X	X	X	X	X	X	X	X	
The Bank of New York Mellon	X	X	X	X	X	A	A			

X - Direct Access; A - Access via GS&Co.; B - Access via GSI; C - Access via GSJCL

We have prepared contingency plans as a backup in the event that one of the material operating entities providing FMU access to other affiliates were to go into bankruptcy; depending on the FMU, these plans include options for multiple entity access, alternative contingency arrangements, or the use of a third-party service provider.

Operational Services. GS Group subsidiaries regularly provide services to each other based on intercompany agreements for which arms' length fees are paid. Such services may relate to: employee services; technology or intellectual property; facilities and other fixed assets; and vendor services.

The table below illustrates the services provided and received by material entities:

Material Entity Shared Services Relationships

PROVIDES ↓ / RECEIVES →	All Entities	Group Inc	GSCO	GSI	GS Bank	JANY	GSJCL	GSIB	GSAM	GSAMI	GSLPntrs	GSFL	GSSPL	GSSLLC	GSPM	GPMU	GHKL	GPMS	GSUL	GSJS
Group Inc	IP, V		F		F	F								F		F				
GSCO	IP, V	P		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
GSI	IP, V	P	P		P	P	P	P	P	P	P	P	P	P	P, F		P	P	P, F	P
GS Bank	IP																			
JANY	IP																			
GSJCL	IP	P	P	P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P
GSIB	IP																			
GSAM	IP																			
GSAMI	IP																			
GSLPntrs	IP																			
GSFL																				
GSSPL		P	P	P		P	P	P	P	P	P	P		P	P	P	P	P	P	P
GSSLLC		P	P	P		P	P	P	P	P	P	P	P		P	P	P	P	P	P
GSPM		T	T	T	T	T	T	T	T	T	T	T	T	T		T	T	T	T	T
GPMU		T	T	T	T	T	T	T	T	T	T	T	T	T	T		T	T	T	T
GHKL		P, T	P, T	P, T	T	P, T	P, T	P, T	P, T	P, T	P, T	P, T	P, T	P, T	P, T	P, T		P, T	P, T	P, T
GPMS		P, T	P, T	P, T	T	P, T	P, T	P, T	P, T	P, T	P, T	P, T	P, T	P, T	P, T	P, T	P,T		P, T	P, T
GSUL		P	P	P		P	P	P	P	P	P	P	P	P	P	P	P	P		P
GSJS	V	P, T	P, T	P, T	T	P, T	P, T, F	P, T	P, T	P, T	P, T	P, T	P, T	P, T	P, T	P, T	P, T	P, T	P, T	

P = PERSONNEL, IP = INTELLECTUAL PROPERTY, T = TECHNOLOGY ASSETS, F = FACILITIES, V= VENDORS

We have reduced the risks relating to affiliates' dependency on other affiliates for the provision of shared services by documenting such services in legal agreements that provide for continuity of service, even if a contracting entity enters some form of insolvency proceeding.

Actions we have taken to mitigate the effect of interconnectedness and ensure a more rational, less complex legal entity structure:

We have established the following criteria to mitigate interconnectedness and ensure a more rational and less complex legal entity structure:

1. Separation of Core from Non-Core Businesses:
   - Core business activities and critical operations should be conducted in a small number of large, well-capitalized and well-funded entities (i.e. material operating entities)
   - Market risk of core business activities should be centrally managed within a limited number of material operating entities
   - Non-core business activities that are likely to be spun off in a resolution scenario should be conducted in separate legal entity groups that facilitate separability in resolution
   - Entities with common roles should be grouped into separate ownership chains under common holding companies (e.g., operating entity groups, service entity groups and investing entity groups)
   - The domicile of legal entities should be aligned with their principal place of business.

In resolution, the separation of core from non-core businesses allows the firm to concentrate its financial resources where they would have the greatest impact (i.e. on the core business lines and critical operations), and simplifies the spin-off of non-core businesses because they do not need to be "unraveled" from the rest of the business.

2. As Few Entities as Possible:
   - Our core businesses and critical operations should be conducted in the smallest number of operating entities that legal, regulatory, risk and resolvability considerations will allow;
   - Unless specific circumstances warrant, there should not be more than one of the following category of operating entity in any jurisdiction:
     i. a bank;
     ii. a broker-dealer;
     iii. an asset manager.
   - Our investing businesses should be conducted in as few legal entities as legal, regulatory, co-investing and other business efficiency considerations will allow;
   - Redundant and dormant entities should be wound down.

A smaller number of legal entities reduces the complexity of resolution and decreases the likelihood of conflicting resolution regimes or of part of a business activity going into insolvency proceedings and part remaining out of proceedings.

3. Short, Clean Entity Ownership Lines and Guarantee Flows:
   - Operating entities should not have cross-holdings in each other;
   - Material operating and material service entities should not be owned by another material operating or material service entity;
   - There should be as few intermediate holding companies as regulatory or other considerations permit;
   - Fractional or split ownership of material entities should be avoided.

Short, simple lines of ownership not only reduce the complexity of resolution, but also reduce the likelihood that the provision of financial support to material entities will be impeded at an intermediate step in the ownership chain.

4. Clean Funding Pathways:
   - External TLAC should only be issued by the parent company;
   - Internal TLAC should be provided in a manner that preserves flexibility and efficiency of deployment;
   - Mechanisms should be in place to make capital and liquidity available to surviving material entities in a resolution scenario:
     i. in sufficient quantity and in a sufficiently timely manner that these entities can be wound down in an orderly fashion;
     ii. in a manner that mitigates potential conflicts of interest arising as a result of the forgiveness or conversion of debt;

iii. in a manner that mitigates uncertainty related to potential creditor challenge.

The resolution benefit of these criteria is that they reduce the likelihood that creditor challenge will impede the process of providing financial support to material entities and afford additional flexibility to provide additional resources during the wind-down period.

5. Intercompany Arrangements that Mitigate Interconnectedness:
   - Intercompany guarantees should emanate only from the parent company and flow downstream to subsidiaries;
   - Derivative and secured funding contracts with external third parties should not contain cross-default provisions;
   - The number of intercompany derivative transactions should be reduced to the extent practicable:
     i. Where possible, clients should transact with the legal entity that manages the related market risk;
     ii. Where such alignment of clients with risk-management entities is not possible, intercompany transactions should be minimized using intercompany clearing or internal compression techniques, where available;
     iii. Intercompany transactions should be booked and risk managed in a manner consistent with external derivative transactions, they should be collateralized on a daily basis and, in the event of default by one affiliate party, they should close out at mid-market prices.
   - Intercompany receivables of whatever nature should be settled regularly.

Intercompany arrangements that mitigate interconnectedness reduce the likelihood that the failure of one legal entity will bring about the failure of its affiliates.

6. Alignment of Resources with the Entities they Serve:
   - Staff should normally be employed by the entity that benefits from their services or by an operationally and financially resilient service entity;
   - If staff are not employed by the entity for which they provide services (for example, because they are employed by a service entity, because they work for several legal entities, because they live in a different country, or because of local registration requirements), the service they provide should be documented in a service-level agreement that allows for the continued provision of services in a resolution scenario;
   - Technology and facility assets should normally be held on the balance sheet of a financially resilient service entity unless they benefit only one entity, in which case they should be held on its balance sheet;
   - The use of technology or facility assets by an entity that does not own them should be documented in an agreement that allows for the continued provision of services in a resolution scenario;
   - Legal entities should have properly documented ownership interests in, or access rights to, the intellectual property from which they benefit;

- Entities that have a critical dependency on another group entity for access to an FMU should have contingency arrangements in place for alternative access;
- Resolution critical third party vendor contracts should contain resolution resilient clauses and allow for assignability to group entities that have a critical dependency on the vendor.

These criteria are designed to ensure that our major operating entities are not forced into premature liquidation because of inadequate non-financial resources such as staff, technology, intellectual property, physical assets or access to critical FMUs.

7. Protection of the Insured Depository Institution (IDI):
   - Our parent company, whether acting directly or through our Funding IHC, should act as a source of strength for our IDI;
   - Our IDI should hold sufficient capital and liquidity to meet its regulatory and internal requirements in a business-as-usual context;
   - Our parent company should provide the IDI with additional capital or liquidity required to meet its RCEN and RLEN requirements;
   - The parent company should ensure that there is sufficient internal TLAC to meet the IDI's RCAP requirements;
   - The parent company should ensure that there is sufficient excess liquidity to meet the IDI's RLAP requirements;
   - The provisions of Regulation W should be met in all respects, as determined by the IDI itself;
   - The number of intercompany derivative transactions involving the IDI should be reduced to the extent practicable:
     i. Where possible, clients should transact directly with the IDI when it manages the related market risk, thereby minimizing the volume of intercompany derivative transactions;
     ii. Where such alignment of clients with the IDI is not possible, intercompany transactions should be minimized or reduced using intercompany clearing or internal compression techniques, where available;
     iii. Intercompany transactions should be booked and risk managed in a manner consistent with external derivative transactions.
   - Shared services of which the IDI is a beneficiary should be comprehensively documented in service level agreements.

These criteria are designed to help ensure that our insured depository institution would remain operational in the event that our parent company were to enter bankruptcy.

We acknowledge that there is inherent subjectivity in identifying whether or not an entity structure or transaction flow is complex, and recognize the need for senior and knowledgeable stakeholders to apply judgment in considering all factors that influence our corporate structure.

Resolution Strategy by Material Entity

The Goldman Sachs Group, Inc.

Description of Entity

As the parent company of the consolidated firm, Group Inc. is GS Group's "covered company[29]." It is a Delaware corporation, and it is a bank holding company and a financial holding company regulated by the Federal Reserve Board. Its common stock is traded on the New York Stock Exchange under the symbol GS.

The firm's equity capital is raised by Group Inc., which downstreams capital to the firm's subsidiaries to support their business activities and meet their regulatory requirements, where applicable. The majority of the firm's unsecured funding is also raised by Group Inc., which lends it to the Funding IHC pursuant to the Funding Note. The Funding IHC lends some of these funds back to Group Inc. via the revolving facility under the CLSA to meet the funding and liquidity requirements of Group Inc.

As a holding company, Group Inc. depends on dividends, distributions and other payments (e.g., payments on intercompany loans) from its subsidiaries to fund dividend payments and payments on its obligations, including debt obligations. Group Inc. has entered into derivative contracts (substantially all of which are with affiliates) to hedge interest rate, currency, and other market risks related to its third-party borrowings and its equity investments in foreign subsidiaries. Group Inc. no longer enters into third-party OTC derivative transactions. Group Inc. operates in the United States with its principal office in New York, at the firm's global headquarters, which is located at 200 West Street, New York, NY.

Summary of Group Inc.'s Resolution Strategy

We believe that the most effective resolution strategy is one that meets the combined goals of facilitating an orderly wind-down of our material operating entities while being minimally disruptive to financial markets. Our strategy is a variant on the SPOE strategy, under which the parent company of a failing institution is resolved in proceedings, while leaving other key entities of the institution to continue their activities outside of resolution proceedings. The CLSA requires the Funding IHC, both before and after a Group Inc. bankruptcy filing, to provide the participating material operating and service entities with the capital and liquidity they need to support their ongoing operations and facilitate their orderly wind-down outside of proceedings. We believe this strategy also ensures the continuity of critical operations at our subsidiaries, and would result in losses being incurred by our equity holders and creditors, not by taxpayers.

[29] *As defined under Section 165 of the Dodd-Frank Act.*

<u>Goldman Sachs & Co. LLC</u>

Regulatory Status	• Regulated broker-dealer • Futures commission merchant
Incorporation	• Limited liability company organized in New York
Primary Regulators	• Securities and Exchange Commission • Financial Industry Regulatory Authority, Inc. (FINRA) • Commodity Futures Trading Commission (CFTC)
Ownership	• Direct, wholly-owned subsidiary of Group Inc.
Office location	• New York, NY
Activities	• Investment banking • Securities trading and market making • Investment management • Client base includes corporations, financial institutions, governments and high-net-worth individuals.
Funding Sources	• Unsecured funding from Group Inc. or the Funding IHC • No material unsecured borrowing from other material entities • Borrows on a secured basis from affiliates (mainly GSI)
Other Matters	• Client assets are protected under the rules of the SEC and CFTC

Summary of GS&Co.'s Resolution Strategy

The CLSA requires the Funding IHC, both before and after a Group Inc. bankruptcy filing, to provide GS&Co. with sufficient capital to meet its applicable capital requirements plus an operating buffer, and sufficient liquidity to meet its intraday liquidity requirements and prevent a payment default. Accordingly, under our preferred resolution strategy, GS&Co. remains out of proceedings while it winds itself down in an orderly manner over time. After Group Inc. enters bankruptcy proceedings, GS&Co. ceases to solicit new business, but it retains the operational functionality needed to dispose of its assets and hedge its remaining risk positions. Because of the steps we have taken, it continues to have access to both shared services and FMUs throughout the resolution process. This strategy prevents significant disruptions to clients holding cash or securities in accounts at GS&Co., and gives it the flexibility to execute asset sales and derivative unwinds at a pace that avoids fire-sales or the use of emergency government facilities.

We expect that prime brokerage and other clients of GS&Co. would transfer their positions to alternate third-party providers. All securities inventory would be sold, and derivatives would be unwound either through early terminations, contractual maturities, portfolio sales, novations or bilateral terminations. After the market-making and client positions have been wound down, GS&Co.'s residual balance sheet would largely be cash, financed by a combination of debt and equity. Our strategy is designed with the goal of having sufficient liquidity and capital to pay GS&Co.'s third-party creditors in full, with any remaining amounts ultimately returned to the bankruptcy estate of the parent company.

Goldman Sachs International

Regulatory Status	• Regulated broker-dealer
Incorporation	• Unlimited company incorporated in England
Primary Regulators	• Prudential Regulation Authority • Financial Conduct Authority
Ownership	• Indirect, wholly-owned subsidiary of Group Inc.
Office location	• London, England
Activities	• Investment banking • Securities trading and market making • Investment management • Client base includes corporations, financial institutions, governments and high-net-worth individuals.
Funding Sources	• Unsecured funding primarily from Group Inc. or the Funding IHC • Limited amount of unsecured funding from other material entities • Some unsecured funding from third parties • Borrows on a secured basis from affiliates (mainly GS&Co. and other material entities)
Other Matters	• Client assets are protected under the rules of the FCA

Summary of GSI's Resolution Strategy

The CLSA requires the Funding IHC, both before and after a Group Inc. bankruptcy filing, to provide GSI with sufficient capital to meet its applicable capital requirements plus an operating buffer, and sufficient liquidity to meet its intraday liquidity requirements and prevent a payment default. Accordingly, under our preferred resolution strategy, GSI remains out of proceedings while it winds itself down in an orderly manner over time. After Group Inc. enters bankruptcy proceedings, GSI ceases to solicit new business, but it retains the operational functionality needed to dispose of its assets and hedge its remaining risk positions. Because of the steps we have taken, it continues to have access to both shared services and FMUs throughout the resolution process. This strategy prevents significant disruptions to clients holding cash or securities in accounts at GSI, and gives it the flexibility to execute asset sales and derivative unwinds at a pace that avoids fire-sales or the use of emergency government facilities.

We expect that prime brokerage and other clients of GSI would transfer their positions to alternate third-party providers. All securities inventory would be sold, and derivatives would be unwound either through early terminations, contractual maturities, portfolio sales, novations or bilateral terminations. After the market-making and client positions have been wound down, GSI's residual balance sheet would largely be cash, financed by a combination of debt and equity. Our strategy is designed with the goal of having sufficient liquidity and capital to pay GSI's third-party creditors in full, with any remaining amounts ultimately returned to the bankruptcy estate of the parent company.

Goldman Sachs Bank USA

Regulatory Status	• Insured Depository Institution • New York State-chartered bank • Member of Federal Reserve System
Incorporation	• GS Bank is chartered in New York
Primary Regulators	• Board of Governors of the Federal Reserve • Federal Deposit Insurance Corporation • New York State Department of Financial Services • Consumer Financial Protection Bureau
Ownership	• Direct, wholly-owned subsidiary of Group Inc.
Office location	• New York; branches in Salt Lake City and London
Activities	• Deposit taking • Private bank and corporate lending • Market-making in interest rate derivative products • Extending personal loans through an online platform
Funding Sources	• Takes deposits from Group Inc., the Funding IHC and third parties • Unsecured funding from Group Inc. or the Funding IHC • No material unsecured borrowing from other material entities • Borrows on a secured basis from affiliates (primarily GS&Co.)

Summary of GS Bank USA's Resolution Strategy

The CLSA requires the Funding IHC, both before and after a Group Inc. bankruptcy filing, to provide GS Bank with sufficient capital to meet its applicable capital requirements (including the requirements for "well capitalized" status under the prompt corrective action framework) plus an operating buffer, and sufficient liquidity to meet its intraday liquidity requirements and prevent a payment default. Accordingly, under our preferred resolution strategy, GS Bank remains out of proceedings while it winds itself down in an orderly manner over time. After Group Inc. enters bankruptcy proceedings, GS Bank ceases to solicit new business, but it retains the operational functionality needed to dispose of its assets and hedge its remaining risk positions. Because of the steps we have taken, it continues to have access to both shared services and FMUs throughout the resolution process. This strategy gives it the flexibility to execute asset sales and derivative unwinds at a pace that avoids fire-sales or the use of emergency government facilities.

Our projections indicate that, given the support provided by the Funding IHC pursuant to the CLSA, GS Bank will have sufficient liquidity to ensure that depositors have access to their insured deposits. Certain deposits are assumed to be repaid at contractual maturity dates. Loan inventory would be sold and all uninsured deposits are assumed to be withdrawn. Derivatives would be unwound either through early terminations, contractual maturities, portfolio sales, novations or bilateral terminations. Our strategy is designed with the goal of having sufficient capital and liquidity to pay our depositors and other third-party creditors in full, with any remaining amounts ultimately returned to the bankruptcy estate of the parent company. Accordingly, our strategy is designed with the goal of having no impact to the FDIC's Deposit Insurance Fund.

GS Bank is required to submit its own resolution plan to the FDIC by July 1, 2018.

J. Aron & Company LLC

Regulatory Status	• Swap dealer
Incorporation	• Limited liability company organized in New York
Primary Regulators	• CFTC • Federal Energy Regulatory Commission
Ownership	• Direct, wholly-owned subsidiary of Group Inc.
Office location	• New York, NY
Activities	• Currencies and physical commodities market-making
Funding Sources	• Unsecured funding from Group Inc. • No material borrowing relationships with other material entities

Summary of JANY's Resolution Strategy

We have considered a range of options for the orderly resolution of JANY and have assessed the implications of an orderly wind-down of this entity both in and out of proceedings. A key aspect to our strategy is continued access to both shared services and FMUs. We believe, based on our financial projections, that the steps we have taken will enable these services to continue throughout the resolution process.

Orderly Wind-down in Proceedings: Under our preferred resolution strategy, we assume that JANY enters Chapter 11 proceedings along with Group Inc. In this scenario, we assume that JANY's derivatives close out immediately following the commencement of proceedings, and that losses are incurred upon the unwind of these derivatives. At this time, JANY would also enter the orderly wind-down phase in which the entity would begin selling assets. If losses incurred on the unwinding of derivatives and disposition of assets are greater than the capital held in the entity, third-party creditors would be made whole, or they would have a claim against Group Inc. pursuant to parent company transactional guarantees. In our projections, the parent company would have sufficient funding to make payments on behalf of JANY as contractually provided for. To be conservative, our Resolution Plan assumes JANY enters proceedings. We project that counterparties and creditors of the entity would not incur any losses and we believe JANY's entering proceedings would not have a systemic impact. Alternative options could be pursued, including, as discussed below, wind-down outside of proceedings.

Orderly Wind-down Outside of Proceedings: In this scenario, JANY would be recapitalized, if necessary, and would receive liquidity from Group Inc. or the Funding IHC to cover assumed liquidity outflows. During the orderly wind-down period, JANY would de-risk and de-lever through asset sales, and derivatives held in the entity would be unwound either through early terminations, contractual maturities, portfolio sales, novations or bilateral terminations. After the positions are wound down, the entity's resulting balance sheet would largely be cash on the asset side and a mix of debt and equity on the liability side. This strategy is designed with the goal of having sufficient capital and liquidity to pay JANY's third-party creditors in full, with any remaining amounts ultimately returned to the bankruptcy estate of the parent company. In our Resolution Plan we have included this option as an alternate scenario, which we refer to as the active derivative unwind scenario.

Goldman Sachs Japan Co., Ltd.

Regulatory Status	• Regulated broker-dealer
Incorporation	• Kabushiki Kaisha (Joint Stock Company) incorporated in Japan
Primary Regulators	• Japan Financial Services Agency (JFSA)
Ownership	• Indirect, wholly-owned subsidiary of Group Inc.
Office location	• Tokyo, Japan
Activities	• Investment banking • Securities and currencies trading and market making
Funding Sources	• Unsecured funding primarily from Group Inc. or the Funding IHC • Secured borrowing from affiliates (primarily GSI and GS&Co.)
Other Matters	• Client assets are protected under the rules of the JFSA

Summary of GSJCL's Resolution Strategy

The CLSA requires the Funding IHC, both before and after a Group Inc. bankruptcy filing, to provide GSJCL with sufficient capital to meet its applicable capital requirements plus an operating buffer, and sufficient liquidity to meet its intraday liquidity requirements and prevent a payment default. Accordingly, under our preferred resolution strategy, GSJCL remains out of proceedings while it winds itself down in an orderly manner over time. This will result in a better systemic outcome because GSJCL will have flexibility to determine the optimal pace of asset sales and derivative unwinds, thereby avoiding fire-sales, disruptions for clients, and the use of emergency government facilities.

A key aspect to our strategy is continued access to both shared services and FMUs. We believe, based on our financial projections, that the steps we have taken will enable these services to continue throughout the resolution process.

GSJCL would sell all securities inventory, and derivatives would be unwound either through early terminations, contractual maturities, portfolio sales, novations or bilateral terminations. After the market-making and client positions are wound down, GSJCL's balance sheet would largely be cash, financed by a combination of debt and equity. Our strategy is designed with the goal of having sufficient liquidity and capital to pay GSJCL's third-party creditors in full, with any remaining amounts ultimately returned to the bankruptcy estate of the parent company.

Goldman Sachs International Bank

Regulatory Status	• U.K. registered bank
Incorporation	• Unlimited company incorporated in England
Primary Regulators	• Prudential Regulation Authority • Financial Conduct Authority
Ownership	• Indirect, wholly-owned subsidiary of Group Inc.
Office location	• London, England
Activities	• Primary dealer for European government bonds • Government bond market-making • Lending and deposit taking
Funding Sources	• Deposit taking from third parties • Unsecured funding primarily from Group Inc. or the Funding IHC • Secured borrowing from affiliates (primarily GSI)
Other Matters	• Client assets are protected under the rules of the FCA

Summary of GSIB's Resolution Strategy

The CLSA requires the Funding IHC, both before and after a Group Inc. bankruptcy filing, to provide GSIB with sufficient capital to meet its applicable capital requirements plus an operating buffer, and sufficient liquidity to meet its intraday liquidity requirements and prevent a payment default. Accordingly, under our preferred resolution strategy, GSIB remains out of proceedings while it winds itself down in an orderly manner over time. This will result in a better systemic outcome because GSIB will have flexibility to determine the optimal pace of asset sales and derivative unwinds, thereby avoiding fire-sales, disruptions for clients, and the use of emergency government facilities.

A key aspect to our strategy is continued access to both shared services and FMUs. We believe, based on our financial projections, that the steps we have taken will enable these services to continue throughout the resolution process.

GSIB would sell all loans and securities inventory, and the limited derivatives held in the entity could be unwound either through early terminations, contractual maturities, portfolio sales, novations or bilateral terminations. Deposits would be repaid. After the market-making positions are wound down and deposits repaid, GSIB's balance sheet would largely be cash, financed by a combination of debt and equity. Our strategy is designed with the goal of having sufficient liquidity and capital to pay GSIB's third-party creditors in full, with any remaining amounts ultimately returned to the bankruptcy estate of the parent company.

Goldman Sachs Asset Management, L.P.; Goldman Sachs Asset Management International

	GSAM	**GSAMI**
Regulatory Status	• Registered as investment advisor with SEC[30]	• Authorized and regulated by Financial Conduct Authority
Incorporation	• Limited partnership established in Delaware	• Unlimited company incorporated in England
Ownership	• Indirect, wholly-owned subsidiary of Group Inc.	• Indirect, wholly-owned subsidiary of Group Inc.
Office location	• New York, NY	• London, England
Activities	• Asset management and investment advisor	• Asset management and investment advisor
Funding Sources	• Unsecured funding from Group Inc. or the Funding IHC	• No material borrowing relationships with other material entities
Other Matters	• Assets under management of $576 billion	• Assets under management of $234 billion

Summary of GSAM's and GSAMI's Resolution Strategy

Our asset management business, including GSAM and GSAMI, would be prepared for sale as part of our resolution strategy. These entities, which provide asset management services and offer investment products, have limited connectivity with other affiliates and limited obstacles that would hinder a sale in whole or in part.

We would not expect these entities to require additional capital or liquidity from the parent company or the Funding IHC. However, the CLSA requires the Funding IHC, both before and after a Group Inc. bankruptcy filing, to provide GSAM with sufficient capital to maintain positive equity and prevent a payment default, and to provide GSAMI with sufficient capital to meet its applicable capital requirements plus an operating buffer or prevent a payment default.

An alternative resolution approach would be to transfer the management of GSAM and GSAMI funds to other fund managers and wind these entities down in an orderly manner.

[30] *GSAM is also registered as a Commodity Pool Operator and Commodity Trading Advisor with the CFTC; in addition, it is registered with various Canadian regulators including the Ontario Securities Commission as a Non-Canadian Adviser (Investment Counsel and Portfolio Manager)*

Goldman Sachs Lending Partners LLC ("GSLPtnrs")

Regulatory Status	• Not prudentially regulated
Incorporation	• Limited liability company organized in Delaware
Ownership	• Indirect, wholly-owned subsidiary of Group Inc.
Office location	• New York, NY
Activities	• Originates, syndicates and makes markets in bank loans and commercial and residential mortgage loans
Funding Sources	• Unsecured funding from Group Inc. • No material borrowing relationships with other material entities

Summary of GSLPtnrs' Resolution Strategy

We have considered a range of options for the orderly resolution of GSLPtnrs, including an orderly wind-down outside of proceedings. In this scenario, GSLPtnrs would receive liquidity from Group, Inc. to cover assumed liquidity outflows, and capital via the forgiveness of its substantial intercompany debt. To be conservative, our preferred resolution strategy assumes that GSLPtnrs enters Chapter 11 proceedings along with Group Inc. If this were to be the case, we believe that the systemic impact and the specific impact to our clients and counterparties would be limited because the entity holds only a small proportion of GS Group's total lending commitments, and most of its commitments are part of syndicated credit facilities.

A key aspect to our strategy is continued access to both shared services and FMUs. We believe, based on our financial projections, that the steps we have taken will enable these services to continue throughout the resolution process.

GSLPtnrs would sell all loan inventory, and the limited derivatives held in the entity would be unwound through close-outs. In a scenario where GSLPtnrs is unwound outside of proceedings, the limited derivatives held in the entity would be unwound either through early terminations, contractual maturities, portfolio sales, novations or bilateral terminations. After these positions are wound down, the entity's resulting balance sheet would largely be cash financed by a combination of debt and equity. In both scenarios, our strategy is designed with the goal of having sufficient liquidity and capital to pay GSLPtnrs' third-party creditors in full, with any remaining amounts ultimately returned to the bankruptcy estate of the parent company.

Goldman Sachs Funding LLC (“GSFL”)

Regulatory Status	• Not prudentially regulated
Incorporation	• Limited liability company incorporated in Delaware
Ownership	• Direct, wholly-owned subsidiary of Group Inc.
Office location	• New York, NY
Activities	• Primary funding vehicle for Group Inc., certain material operating entities and the material service entities
Funding Sources	• Pursuant to the CLSA, GSFL receives unsecured funding from Group Inc. via the Funding Note

Summary of GSFL’s Resolution Strategy

GSFL is the Funding IHC we formed to facilitate our preferred resolution strategy. We have transferred to GSFL two types of assets that could be used to support material entities leading up to and following a Group Inc. bankruptcy filing: (i) Group Inc. GCLA and (ii) unsecured receivables that could be forgiven to recapitalize material entities (also referred to as internal TLAC). Forming GSFL and pre-funding it with these assets has two main benefits to our preferred resolution strategy. First, it provides incremental protection against potential creditor challenge to the provision of support of material entities leading up to a Group Inc. bankruptcy filing. Second, because GSFL would not enter resolution proceedings, it would have the flexibility to provide capital and liquidity support to material entities as and when needed following a Group Inc. bankruptcy filing.

GSFL is a party to the CLSA, which governs the relationship between Group Inc. and GSFL, and GSFL’s obligation to provide capital and liquidity support to participating material entities during the runway leading up to and following Group Inc.’s bankruptcy filing. During business as usual and through a runway period, GSFL is required to provide liquidity to Group Inc. via the Revolver. During the runway, GSFL is also required to provide participating material entities with any capital required to meet their applicable regulatory requirements plus an operating buffer, and any liquidity required to maintain intraday liquidity requirements and prevent a payment failure. Upon the occurrence of a Resolution Trigger Event under the CLSA, (i) the Revolver automatically terminates, Group Inc. is obligated to use its available liquidity to repay outstanding amounts and, to the extent not repaid, outstanding amounts are automatically forgiven (ii) Group Inc. is required to make a final contribution of GCLA and intercompany receivables to GSFL, and (iii) the Funding Note is automatically forgiven. In addition, GSFL remains contractually obligated to provide the same level of support to participating material entities as during the runway.

Our runway and resolution triggers are designed to ensure that GSFL maintains sufficient capital and liquidity resources to support the orderly wind-down of our participating material entities in accordance with our preferred resolution strategy.

Other Material Service Entities

In addition to GSFL, the firm has designated the following eight entities as material service entities:

Goldman Sachs Services Private Ltd: GSSPL is a Private Limited Company domiciled in India and wholly owned indirectly by Group Inc. The entity operates from its office location in Bengaluru, India. GSSPL is a staffing service entity employing predominantly technology and operational support employees, and it also owns facilities assets. It provides operational support services to material operating entities under a master services agreement. The entity earns revenue by charging its operating costs to operating entities with a mark-up, as applicable.

Goldman Sachs Services L.L.C.: GSSLLC is a Limited Liability Company domiciled in Delaware and wholly owned indirectly by Group Inc. It operates primarily from its offices in New Jersey, New York and Utah. GSSLLC is a staffing service entity employing primarily technology and operational support employees and providing operational support services to material operating entities under a master services agreement. The entity earns revenue by charging its operating costs to operating entities with a mark-up, as applicable.

Goldman Sachs Property Management: GSPM is a Private Unlimited Company domiciled in England and wholly owned indirectly by Group Inc. It operates from its office location in London. GSPM is a property management company that provides operating entities with access to the technology assets and facilities assets (e.g. leasehold improvements, fixtures and furniture) that it owns. The entity earns revenue by charging its operating costs to operating entities with a mark-up, as applicable.

Goldman Sachs Property Management USA LLC: GPMU is a Limited Liability Company, domiciled in Delaware and wholly owned indirectly by Group Inc. It operates from its office location in New Jersey. GPMU is a property management company that provides operating entities with access to the technology assets (e.g. data servers, computer equipment, etc.) that it owns. The entity earns revenue by charging its operating costs to operating entities with a mark-up, as applicable.

Goldman Sachs Services (Asia) Limited: GHKL is a Private Limited Company domiciled in Hong Kong and wholly owned indirectly by Group Inc. It operates from its office location in Hong Kong. GHKL is a staffing service entity that employs primarily technology and operational support employees and provides operational support services to material operating entities under a master services agreement; it is also a property management company that provides operating entities with access to the technology and facilities assets that it owns. The entity earns revenue by charging its operating costs to operating entities with a mark-up, as applicable.

Goldman Sachs Services (Singapore) Pte. Ltd.: GPMS is a Private Limited Company domiciled in Singapore and wholly owned indirectly by Group Inc. It operates from its office location in Singapore. GPMS is a staffing service entity that employs primarily technology and operational support employees and provides operational support services to material operating entities under a master services agreement; it is also a property management company that provides operating entities with access to the technology assets that it owns. The entity earns revenue by charging its operating costs to operating entities with a mark-up, as applicable.

Goldman Sachs (UK) Svc. Limited: GSUL is a Private Limited Company domiciled in England and wholly owned indirectly by Group Inc. It operates from its office location in London. GSUL is a staffing service entity employing primarily technology and operational support employees and provides operational support services to material operating entities under a master services agreement. The entity earns revenue by charging its operating costs to operating entities with a mark-up, as applicable.

Goldman Sachs Japan Services Co., Ltd.: GSJS is a Kabushiki Kaisha Company domiciled in Japan and wholly owned indirectly by Group Inc. The entity operates from its office location in Tokyo. GSJS is a staffing service entity that employs primarily technology support employees, and provides operational support services to material operating entities under a master services agreement; it is also a property management company that provides operating entities with access to the technology assets that it owns. The entity earns revenue by charging its operating costs to operating entities with a mark-up, as applicable.

Summary of Resolution Strategy for the Firm's Material Service Entities

We would not expect any of these eight material service entities to require additional capital or liquidity from either the parent company or the Funding IHC: this is because we maintain six months' working capital at each of them, and because the SLAs require these entities to be paid in a timely manner for services they provide to material operating entities. Nevertheless, the CLSA requires the Funding IHC, both before and after a Group Inc. bankruptcy filing, to provide these material service entities with sufficient capital or liquidity to maintain positive equity and prevent a payment default. As the material operating entities gradually unwind their positions, the material service entities will reduce their corresponding level of support. Under our preferred resolution strategy, our material service entities remain in operation during the wind-down period: they have sufficient liquidity to pay their creditors in full. Once their services are no longer required, they are wound down and any cash that remains on their balance sheet is returned to the parent company's bankruptcy estate.

SI 3. Summary Financial Information: Assets, Liabilities, Capital and Funding

Set out on the following pages is financial information extracted from our 2016 Form 10-K.

Please see Part II, Items 7 and 8 of our 2016 Form 10-K for management's discussion and analysis of financial condition and results of operations and the notes to these consolidated financial statements, respectively.

- Set forth below are the consolidated statements of earnings from our 2016 Form 10-K[31]:

in millions, except per share amounts	Year Ended December 2016	2015	2014
Revenues			
Investment banking	**$ 6,273**	$ 7,027	$ 6,464
Investment management	**5,407**	5,868	5,748
Commissions and fees	**3,208**	3,320	3,316
Market making	**9,933**	9,523	8,365
Other principal transactions	**3,200**	5,018	6,588
Total non-interest revenues	**28,021**	30,756	30,481
Interest income	**9,691**	8,452	9,604
Interest expense	**7,104**	5,388	5,557
Net interest income	**2,587**	3,064	4,047
Net revenues, including net interest income	**30,608**	33,820	34,528
Operating expenses			
Compensation and benefits	**11,647**	12,678	12,691
Brokerage, clearing, exchange and distribution fees	**2,555**	2,576	2,501
Market development	**457**	557	549
Communications and technology	**809**	806	779
Depreciation and amortization	**998**	991	1,337
Occupancy	**788**	772	827
Professional fees	**882**	963	902
Other expenses	**2,168**	5,699	2,585
Total non-compensation expenses	**8,657**	12,364	9,480
Total operating expenses	**20,304**	25,042	22,171
Pre-tax earnings	**10,304**	8,778	12,357
Provision for taxes	**2,906**	2,695	3,880
Net earnings	**7,398**	6,083	8,477
Preferred stock dividends	**311**	515	400
Net earnings applicable to common shareholders	**$ 7,087**	$ 5,568	$ 8,077
Earnings per common share			
Basic	**$ 16.53**	$ 12.35	$ 17.55
Diluted	**16.29**	12.14	17.07
Average common shares			
Basic	**427.4**	448.9	458.9
Diluted	**435.1**	458.6	473.2

[31] *The notes accompanying our consolidated financial statements in our 2016 Form 10-K are an integral part of our consolidated financial statements.*

- Set forth below are the consolidated statements of financial condition from our 2016 Form 10-K[32]:

$ in millions, except per share amounts	As of December 2016	As of December 2015
Assets		
Cash and cash equivalents	**$121,711**	$ 93,439
Collateralized agreements:		
Securities purchased under agreements to resell and federal funds sold (includes $116,077 as of December 2016 and $132,853 as of December 2015, at fair value)	**116,925**	134,308
Securities borrowed (includes $82,398 as of December 2016 and $75,340 as of December 2015, at fair value)	**184,600**	177,638
Receivables:		
Brokers, dealers and clearing organizations	**18,044**	25,453
Customers and counterparties (includes $3,266 as of December 2016 and $4,992 as of December 2015, at fair value)	**47,780**	46,430
Loans receivable	**49,672**	45,407
Financial instruments owned, at fair value (includes $51,278 as of December 2016 and $54,426 as of December 2015, pledged as collateral)	**295,952**	313,502
Other assets	**25,481**	25,218
Total assets	**$860,165**	$861,395
Liabilities and shareholders' equity		
Deposits (includes $13,782 as of December 2016 and $14,680 as of December 2015, at fair value)	**$124,098**	$ 97,519
Collateralized financings:		
Securities sold under agreements to repurchase, at fair value	**71,816**	86,069
Securities loaned (includes $2,647 as of December 2016 and $466 as of December 2015, at fair value)	**7,524**	3,614
Other secured financings (includes $21,073 as of December 2016 and $23,207 as of December 2015, at fair value)	**21,523**	24,753
Payables:		
Brokers, dealers and clearing organizations	**4,386**	5,406
Customers and counterparties	**184,069**	204,956
Financial instruments sold, but not yet purchased, at fair value	**117,143**	115,248
Unsecured short-term borrowings, including the current portion of unsecured long-term borrowings (includes $14,792 as of December 2016 and $17,743 as of December 2015, at fair value)	**39,265**	42,787
Unsecured long-term borrowings (includes $29,410 as of December 2016 and $22,273 as of December 2015, at fair value)	**189,086**	175,422
Other liabilities and accrued expenses (includes $621 as of December 2016 and $1,253 as of December 2015, at fair value)	**14,362**	18,893
Total liabilities	**773,272**	774,667
Commitments, contingencies and guarantees		
Shareholders' equity		
Preferred stock, par value $0.01 per share; aggregate liquidation preference of $11,203 as of December 2016 and $11,200 as of December 2015	**11,203**	11,200
Common stock, par value $0.01 per share; 4,000,000,000 shares authorized, 873,608,100 shares issued as of December 2016 and 863,976,731 shares issued as of December 2015, and 392,632,230 shares outstanding as of December 2016 and 419,480,736 shares outstanding as of December 2015	**9**	9
Share-based awards	**3,914**	4,151
Nonvoting common stock, par value $0.01 per share; 200,000,000 shares authorized, no shares issued and outstanding	**—**	—
Additional paid-in capital	**52,638**	51,340
Retained earnings	**89,039**	83,386
Accumulated other comprehensive loss	**(1,216)**	(718)
Stock held in treasury, at cost, par value $0.01 per share; 480,975,872 shares as of December 2016 and 444,495,997 shares as of December 2015	**(68,694)**	(62,640)
Total shareholders' equity	**86,893**	86,728
Total liabilities and shareholders' equity	**$860,165**	$861,395

[32] *The notes accompanying our consolidated financial statements in our 2016 Form 10-K are an integral part of our consolidated financial statements.*

Equity Capital Management

We determine the appropriate level and composition of our equity capital by considering multiple factors including our current and future consolidated regulatory capital requirements, the results of our capital planning and stress testing process and other factors such as rating agency guidelines, subsidiary capital requirements, the business environment and conditions in the financial markets. We manage our capital requirements and the levels of our capital usage principally by setting limits on balance sheet assets and/or limits on risk, in each case at both the consolidated and business levels.

We principally manage the level and composition of our equity capital through issuances and repurchases of our common stock. We may also, from time to time, issue or repurchase our preferred stock, junior subordinated debt issued to trusts, and other subordinated debt or other forms of capital as business conditions warrant. Prior to any repurchases, we must receive confirmation that the Federal Reserve Board does not object to such capital actions.

As of December 2016, our total shareholders' equity was $86.89 billion (consisting of common shareholders' equity of $75.69 billion and preferred stock of $11.20 billion). As of December 2015, our total shareholders' equity was $86.73 billion (consisting of common shareholders' equity of $75.53 billion and preferred stock of $11.20 billion).

Consolidated Regulatory Capital

As a bank holding company, the firm is subject to consolidated regulatory capital requirements which are calculated in accordance with the revised risk-based capital and leverage regulations of the Federal Reserve Board, subject to certain transitional provisions ("Revised Capital Framework").

The risk-based capital requirements are expressed as capital ratios that compare measures of regulatory capital to RWAs. Failure to comply with these capital requirements could result in restrictions being imposed by the firm's regulators. The firm's capital levels are also subject to qualitative judgments by the regulators about components of capital, risk weightings and other factors. Furthermore, certain of the firm's subsidiaries are subject to separate regulations and capital requirements as described below.

Capital Framework

The regulations under the Revised Capital Framework are largely based on the Basel Committee on Banking Supervision's (Basel Committee) capital framework for strengthening international capital standards ("Basel III") and also implement certain provisions of the Dodd-Frank Act. Under the Revised Capital Framework, the firm is an "Advanced approach" banking organization.

The firm calculates its Common Equity Tier 1 (CET1), Tier 1 capital and Total capital ratios in accordance with (i) the Standardized approach and market risk rules set out in the Revised Capital Framework (together, the Standardized Capital Rules) and (ii) the Advanced approach and market risk rules set out in the Revised Capital Framework (together, the Basel III Advanced Rules). The lower of each ratio calculated in (i) and (ii) is the ratio against which the firm's compliance with its minimum ratio requirements is assessed. Each of the ratios calculated in accordance with the Basel III Advanced Rules was lower than that calculated in accordance with the Standardized Capital Rules and therefore the Basel III Advanced ratios were the ratios that applied to the firm as of December 2016 and December 2015. The capital ratios that apply to the firm can change in future reporting periods as a result of these regulatory requirements.

Regulatory Capital and Capital Ratios. The table below presents the minimum ratios required for the firm.

	As of December	
	2016	2015
CET1 ratio	**5.875%**	4.5%
Tier 1 capital ratio	**7.375%**	6.0%
Total capital ratio	**9.375%**	8.0%
Tier 1 leverage ratio	**4.000%**	4.0%

In the table above:

- The minimum ratios as of December 2016 reflect (i) the 25% phase-in of the capital conservation buffer (0.625%), (ii) the 25% phase-in of the Global Systemically Important Bank (G-SIB) buffer (0.75%), and (iii) the counter-cyclical capital buffer of zero percent, each described below.
- In order to meet the quantitative requirements for being "well-capitalized" under the Federal Reserve Board's regulations, the firm must meet a higher required minimum Total capital ratio of 10.0%.
- Tier 1 leverage ratio is defined as Tier 1 capital divided by quarterly average adjusted total assets (which includes adjustments for goodwill and identifiable intangible assets, and certain investments in nonconsolidated financial institutions).

Certain aspects of the Revised Capital Framework's requirements phase in over time (transitional provisions). These include capital buffers and certain deductions from regulatory capital (such as investments in nonconsolidated financial institutions). These deductions from regulatory capital are required to be phased in ratably per year from 2014 to 2018, with residual amounts not deducted during the transitional period subject to risk weighting. In addition, junior subordinated debt issued to trusts is being phased out of regulatory capital. The minimum CET1, Tier 1 and Total capital ratios that apply to the firm will increase as the capital buffers are phased in.

The capital conservation buffer, which consists entirely of capital that qualifies as CET1, began to phase in on January 1, 2016 and will continue to do so in increments of 0.625% per year until it reaches 2.5% of RWAs on January 1, 2019.

The G-SIB buffer, which is an extension of the capital conservation buffer, phases in ratably, beginning on January 1, 2016, becoming fully effective on January 1, 2019, and must consist entirely of capital that qualifies as CET1. The buffer must be calculated using two methodologies, the higher of which is reflected in the firm's minimum risk-based capital ratios. The first calculation is based upon the Basel Committee's methodology which, among other factors, relies upon measures of the size, activity and complexity of each G-SIB (Method One). The second calculation uses similar inputs, but it includes a measure of reliance on short-term wholesale funding (Method Two). The firm's G-SIB buffer as of December 2016 was 3.0%, using financial data primarily as of December 2014. The buffer will be updated annually based on financial data from the prior year end, and will be generally applicable for the following year.

The Revised Capital Framework also provides for a countercyclical capital buffer, which is an extension of the capital conservation buffer, of up to 2.5% (consisting entirely of CET1) intended to counteract systemic vulnerabilities. As of December 2016 the Federal Reserve Board has set the countercyclical capital buffer at zero percent.

Failure to meet the capital levels inclusive of the buffers could result in limitations on the firm's ability to distribute capital, including share repurchases and dividend payments, and to make certain discretionary compensation payments.

Definition of Risk-Weighted Assets. RWAs are calculated in accordance with both the Standardized Capital Rules and the Basel III Advanced Rules. The following is a comparison of RWA calculations under these rules:

- RWAs for credit risk in accordance with the Standardized Capital Rules are calculated in a different manner than under the Basel III Advanced Rules. The primary difference is that the Standardized Capital Rules do not contemplate the use of internal models to compute exposure for credit risk on derivatives and securities financing transactions, whereas the Basel III Advanced Rules permit the use of such models, subject to supervisory approval. In addition, credit RWAs calculated in accordance with the Standardized Capital Rules utilize prescribed risk-weights which depend largely on the type of counterparty, rather than on internal assessments of the creditworthiness of such counterparties;
- RWAs for market risk in accordance with the Standardized Capital Rules and the Basel III Advanced Rules are generally consistent; and
- RWAs for operational risk are not required by the Standardized Capital Rules, whereas the Basel III Advanced Rules do include such a requirement.

Credit Risk

Credit RWAs are calculated based upon measures of exposure, which are then risk weighted. The following is a description of the calculation of credit RWAs in accordance with the Standardized Capital Rules and the Basel III Advanced Rules:

- For credit RWAs calculated in accordance with the Standardized Capital Rules, the firm utilizes prescribed risk-weights which depend largely on the type of counterparty (e.g., whether the counterparty is a sovereign, bank, broker-dealer or other entity). The exposure measure for derivatives is based on a combination of positive net current exposure and a percentage of the notional amount of each derivative. The exposure measure for securities financing transactions is calculated to reflect adjustments for potential price volatility, the size of which depends on factors such as the type and maturity of the security, and whether it is denominated in the same currency as the other side of the financing transaction. The firm utilizes specific required formulaic approaches to measure exposure for securitizations and equities; and

- For credit RWAs calculated in accordance with the Basel III Advanced Rules, the firm has been given permission by its regulators to compute risk-weights for wholesale and retail credit exposures in accordance with the Advanced Internal Ratings-Based approach. This approach is based on internal assessments of the creditworthiness of counterparties, with key inputs being the probability of default, loss given default and the effective maturity. The firm utilizes internal models to measure exposure for derivatives, securities financing transactions and eligible margin loans. The Revised Capital Framework requires that a bank holding company obtain prior written agreement from its regulators before using internal models for such purposes. The firm utilizes specific required formulaic approaches to measure exposure for securitizations and equities.

Market Risk

Market RWAs are calculated based on measures of exposure which include Value-at-Risk ("VaR"), stressed VaR, incremental risk and comprehensive risk based on internal models, and a standardized measurement method for specific risk. The market risk regulatory capital rules require that a bank holding company obtain prior written agreement from its regulators before using any internal model to calculate its risk-based capital requirement. The following is further information regarding the measures of exposure for market RWAs calculated in accordance with the Standardized Capital Rules and Basel III Advanced Rules:

- VaR is the potential loss in value of inventory positions, as well as certain other financial assets and financial liabilities, due to adverse market movements over a defined time horizon with a specified confidence level. For both risk management purposes and regulatory capital calculations the firm uses a single VaR model which captures risks including those related to interest rates, equity prices, currency rates and commodity prices. However, VaR used for regulatory capital requirements ("regulatory VaR") differs from risk management VaR due to different time horizons and confidence levels (10-day and 99% for regulatory VaR vs. one-day and 95% for risk management VaR), as well as differences in the scope of positions on which VaR is calculated. In addition, the daily trading net revenues used to determine risk management VaR exceptions (i.e., comparing the daily trading net revenues to the VaR measure calculated as of the end of the prior business day) include intraday activity, whereas the Federal Reserve Board's regulatory capital rules require that intraday activity be excluded from daily trading net revenues when calculating regulatory VaR exceptions. Intraday activity includes bid/offer net revenues, which are more likely than not to be positive by their nature. As a result, there may be differences in the number of VaR exceptions and the amount of daily trading net revenues calculated for regulatory VaR compared to the amounts calculated for risk management VaR. The firm's positional losses observed on a single day exceeded its 99% one-day regulatory VaR on two occasions during 2016 and did not exceed its 99% one-day regulatory VaR during 2015. In 2016, there was no change in the VaR multiplier used to calculate Market RWAs;
- Stressed VaR is the potential loss in value of inventory positions, as well as certain other financial assets and financial liabilities, during a period of significant market stress;
- Incremental risk is the potential loss in value of non-securitized inventory positions due to the default or credit migration of issuers of financial instruments over a one-year time horizon;

- Comprehensive risk is the potential loss in value, due to price risk and defaults, within the firm's credit correlation positions; and
- Specific risk is the risk of loss on a position that could result from factors other than broad market movements, including event risk, default risk and idiosyncratic risk. The standardized measurement method is used to determine specific risk RWAs, by applying supervisory defined risk-weighting factors after applicable netting is performed.

Operational Risk

Operational RWAs are only required to be included under the Basel III Advanced Rules. The firm has been given permission by its regulators to calculate operational RWAs in accordance with the "Advanced Measurement Approach," and therefore utilizes an internal risk-based model to quantify Operational RWAs.

Capital Ratios and RWAs. Each of the ratios calculated in accordance with the Basel III Advanced Rules was lower than that calculated in accordance with the Standardized Rules as of December 2016 and December 2015, and therefore such lower ratios applied to the firm as of these dates.

The table below presents the ratios calculated in accordance with both the Standardized and Basel III Advanced Rules.

	As of December	
$ in millions	**2016**	2015
Common shareholders' equity	**$ 75,690**	$ 75,528
Deductions for goodwill and identifiable intangible assets, net of deferred tax liabilities	**(2,874)**	(2,814)
Deductions for investments in nonconsolidated financial institutions	**(424)**	(864)
Other adjustments	**(346)**	(487)
Common Equity Tier 1	**72,046**	71,363
Preferred stock	**11,203**	11,200
Junior subordinated debt issued to trusts	**—**	330
Deduction for investments in covered funds	**(445)**	(413)
Other adjustments	**(364)**	(969)
Tier 1 capital	**$ 82,440**	$ 81,511
Standardized Tier 2 and Total capital		
Tier 1 capital	**$ 82,440**	$ 81,511
Qualifying subordinated debt	**14,566**	15,132
Junior subordinated debt issued to trusts	**792**	990
Allowance for losses on loans and lending commitments	**722**	602
Other adjustments	**(6)**	(19)
Standardized Tier 2 capital	**16,074**	16,705
Standardized Total capital	**$ 98,514**	$ 98,216
Basel III Advanced Tier 2 and Total capital		
Tier 1 capital	**$ 82,440**	$ 81,511
Standardized Tier 2 capital	**16,074**	16,705
Allowance for losses on loans and lending commitments	**(722)**	(602)
Basel III Advanced Tier 2 capital	**15,352**	16,103
Basel III Advanced Total capital	**$ 97,792**	$ 97,614
RWAs		
Standardized	**$496,676**	$524,107
Basel III Advanced	**549,650**	577,651
CET1 ratio		
Standardized	**14.5%**	13.6%
Basel III Advanced	**13.1%**	12.4%
Tier 1 capital ratio		
Standardized	**16.6%**	15.6%
Basel III Advanced	**15.0%**	14.1%
Total capital ratio		
Standardized	**19.8%**	18.7%
Basel III Advanced	**17.8%**	16.9%
Tier 1 leverage ratio	**9.4%**	9.3%

In the table above:

- The deductions for goodwill and identifiable intangible assets, net of deferred tax liabilities, include goodwill of $3.67 billion and $3.66 billion as of December 2016 and December 2015, respectively, and identifiable intangible assets of $257 million (60% of $429 million) and $196 million (40% of $491 million) as of December 2016 and December 2015, respectively, net of associated deferred tax liabilities of $1.05 billion and $1.04 billion as of December 2016 and December 2015, respectively. Goodwill is fully deducted from CET1, while the deduction for identifiable intangible assets is required to be phased into CET1 ratably over five years from 2014 to 2018. The balance that is not deducted during the transitional period is risk weighted.
- The deductions for investments in nonconsolidated financial institutions represent the amount by which the firm's investments in the capital of nonconsolidated financial institutions exceed certain prescribed thresholds. The deduction for such investments is required to be phased into CET1 ratably over five years from 2014 to 2018. As of December 2016 and December 2015, CET1 reflects 60% and 40% of the deduction, respectively. The balance that is not deducted during the transitional period is risk weighted.
- The deduction for investments in covered funds represents the firm’s aggregate investments in applicable covered funds, as permitted by the Volcker Rule, that were purchased after December 2013. Substantially all of these investments in covered funds were purchased in connection with the firm’s market-making activities. This deduction was not subject to a transition period.
- Other adjustments within CET1 and Tier 1 capital primarily include accumulated other comprehensive loss, credit valuation adjustments on derivative liabilities, the overfunded portion of the firm’s defined benefit pension plan obligation net of associated deferred tax liabilities, disallowed deferred tax assets and other required credit risk-based deductions. The deductions for such items are generally required to be phased into CET1 ratably over five years from 2014 to 2018. As of December 2016 and December 2015, CET1 reflects 60% and 40% of such deductions, respectively. The balance that is not deducted from CET1 during the transitional period is generally deducted from Tier 1 capital within other adjustments.
- As of December 2016, junior subordinated debt issued to trusts is fully phased out of Tier 1 capital, with 60% included in Tier 2 capital and 40% fully phased out of regulatory capital. As of December 2015, junior subordinated debt issued to trusts is reflected in both Tier 1 capital (25%) and Tier 2 capital (75%). Junior subordinated debt issued to trusts is reduced by the amount of trust preferred securities purchased by the firm and will be fully phased out of Tier 2 capital by 2022 at a rate of 10% per year.
- Qualifying subordinated debt is subordinated debt issued by Group Inc. with an original maturity of five years or greater. The outstanding amount of subordinated debt qualifying for Tier 2 capital is reduced upon reaching a remaining maturity of five years.

Liquidity Risk Management and Funding Sources

Liquidity Risk Management

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 of the 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.

Treasury has the primary responsibility for assessing, monitoring and managing our liquidity and funding strategy. Treasury is independent of the revenue-producing units and reports to our chief financial officer.

Liquidity Risk Management is an independent risk management function responsible for control and oversight of our liquidity risk management framework, including stress testing and limit governance. Liquidity Risk Management is independent of the revenue-producing units and Treasury, and reports to our chief risk officer.

Liquidity Risk Management Principles

We manage liquidity risk according to three principles (i) hold sufficient excess liquidity in the form of GCLA to cover outflows during a stressed period, (ii) maintain appropriate Asset-Liability Management and (iii) maintain a viable Contingency Funding Plan.

Global Core Liquid Assets. GCLA is liquidity that we maintain to meet a broad range of potential cash outflows and collateral needs in a stressed environment. Our most important liquidity policy is to pre-fund our estimated potential cash and collateral needs during a liquidity crisis and hold this liquidity in the form of unencumbered, highly liquid securities and cash. We believe that the securities held in our GCLA would be readily convertible to cash in a matter of days, through liquidation, by entering into repurchase agreements or from maturities of resale agreements, and that this cash would allow us to meet immediate obligations without needing to sell other assets or depend on additional funding from credit-sensitive markets.

Our GCLA reflects the following principles:

- The first days or weeks of a liquidity crisis are the most critical to a company’s survival;
- Focus must be maintained on all potential cash and collateral outflows, not just disruptions to financing flows. Our businesses are diverse, and our liquidity needs are determined by many factors, including market movements, collateral requirements and client commitments, all of which can change dramatically in a difficult funding environment;
- During a liquidity crisis, credit-sensitive funding, including unsecured debt and some types of secured financing agreements, may be unavailable, and the terms (e.g., interest rates, collateral provisions and tenor) or availability of other types of secured financing may change; and
- As a result of our policy to pre-fund liquidity that we estimate may be needed in a crisis, we hold more unencumbered securities and have larger debt balances than our businesses would otherwise require. We believe that our liquidity is stronger with greater balances of

highly liquid unencumbered securities, even though it increases our total assets and our funding costs.

We maintain our GCLA across Group Inc. and its major broker-dealer and bank subsidiaries as well as the Funding IHC, asset types, and clearing agents to provide us with sufficient operating liquidity to ensure timely settlement in all major markets, even in a difficult funding environment. In addition to the GCLA, we maintain cash and securities balances in several of our other entities, primarily for use in specific currencies, entities, or jurisdictions where we do not have immediate access to parent company liquidity.

We believe that our GCLA provides us with a resilient source of funds that would be available in advance of potential cash and collateral outflows and gives us significant flexibility in managing through a difficult funding environment.

Asset-Liability Management. Our liquidity risk management policies are designed to ensure we have a sufficient amount of financing, even when funding markets experience persistent stress. We manage the maturities and diversity of our funding across markets, products and counterparties, and seek to maintain a diversified funding profile with an appropriate tenor, taking into consideration the characteristics and liquidity profile of our assets.

Our approach to asset-liability management includes:

- Conservatively managing the overall characteristics of our funding book, with a focus on maintaining long-term, diversified sources of funding in excess of our current requirements;

- Actively managing and monitoring our asset base, with particular focus on the liquidity, holding period and our ability to fund assets on a secured basis. We assess our funding requirements and our ability to liquidate assets in a stressed environment while appropriately managing risk. This enables us to determine the most appropriate funding products and tenors; and

- Raising secured and unsecured financing that has a long tenor relative to the liquidity profile of our assets. This reduces the risk that our liabilities will come due in advance of our ability to generate liquidity from the sale of our assets. Because we maintain a highly liquid balance sheet, the holding period of certain of our assets may be materially shorter than their contractual maturity dates.

Our goal is to ensure that we maintain sufficient liquidity to fund our assets and meet our contractual and contingent obligations in normal times as well as during periods of market stress. Through our dynamic balance sheet management process, we use actual and projected asset balances to determine secured and unsecured funding requirements. Funding plans are reviewed and approved by the Firmwide Finance Committee on a quarterly basis. In addition, senior managers in our independent control and support functions regularly analyze, and the Firmwide Finance Committee reviews, our consolidated total capital position (unsecured long-term borrowings plus total shareholders' equity) so that we maintain a level of long-term funding that is sufficient to meet our long-term financing requirements. In a liquidity crisis, we would first use our GCLA in order to avoid reliance on asset sales (other than our GCLA). However, we recognize that orderly asset sales may be prudent or necessary in a severe or persistent liquidity crisis.

Contingency Funding Plan. We maintain a contingency funding plan to provide a framework for analyzing and responding to a liquidity crisis situation or periods of market stress.
Our contingency funding plan outlines a list of potential risk factors, key reports and metrics that are reviewed on an ongoing basis to assist in assessing the severity of, and managing through, a liquidity crisis and/or market dislocation. The contingency funding plan also describes in detail our potential responses if our assessments indicate that we have entered a liquidity crisis, which include pre-funding for what we estimate will be our potential cash and collateral needs as well as utilizing secondary sources of liquidity. Mitigants and action items to address specific risks which may arise are also described and assigned to individuals responsible for execution.

The contingency funding plan identifies key groups of individuals to foster effective coordination, control and distribution of information, all of which are critical in the management of a crisis or period of market stress. The contingency funding plan also details the responsibilities of these groups and individuals, which include making and disseminating key decisions, coordinating all contingency activities throughout the duration of the crisis or period of market stress, implementing liquidity maintenance activities and managing internal and external communication.

Liquidity Stress Tests
In order to determine the appropriate size of our GCLA, we use an internal liquidity model, referred to as the Modeled Liquidity Outflow, which captures and quantifies our liquidity risks. We also consider other factors including, but not limited to, an assessment of our potential intraday liquidity needs through an additional internal liquidity model, referred to as the Intraday Liquidity Model, the results of our long-term stress testing models, applicable regulatory requirements and a qualitative assessment of our condition as well as that of the financial markets. The results of the Modeled Liquidity Outflow, the Intraday Liquidity Model and the long-term stress testing models are reported to senior management on a regular basis.

Modeled Liquidity Outflow. Our Modeled Liquidity Outflow is based on conducting multiple scenarios that include combinations of market-wide and firm-specific stress. These scenarios are characterized by the following qualitative elements:

- Severely challenged market environments, including low consumer and corporate confidence, financial and political instability, adverse changes in market values, including potential declines in equity markets and widening of credit spreads; and
- A firm-specific crisis potentially triggered by material losses, reputational damage, litigation, executive departure, and/or a ratings downgrade.

The following are the critical modeling parameters of the Modeled Liquidity Outflow:

- Liquidity needs over a 30-day scenario;
- A two-notch downgrade of our long-term senior unsecured credit ratings;

- A combination of contractual outflows, such as upcoming maturities of unsecured debt, and contingent outflows (e.g., actions though not contractually required, we may deem necessary in a crisis). We assume that most contingent outflows will occur within the initial days and weeks of a crisis;
- No issuance of equity or unsecured debt;
- No support from additional government funding facilities. Although we have access to various central bank funding programs, we do not assume reliance on additional sources of funding in a liquidity crisis; and
- No asset liquidation, other than the GCLA.

The potential contractual and contingent cash and collateral outflows covered in our Modeled Liquidity Outflow include:

Unsecured Funding

- Contractual: All upcoming maturities of unsecured long-term debt, commercial paper, and other unsecured funding products. We assume that we will be unable to issue new unsecured debt or rollover any maturing debt.
- Contingent: Repurchases of our outstanding long-term debt, commercial paper and hybrid financial instruments in the ordinary course of business as a market maker.

Deposits

- Contractual: All upcoming maturities of term deposits. We assume that we will be unable to raise new term deposits or rollover any maturing term deposits.
- Contingent: Partial withdrawals of deposits that have no contractual maturity. The withdrawal assumptions reflect, among other factors, the type of deposit, whether the deposit is insured or uninsured, and our relationship with the depositor.

Secured Funding

- Contractual: A portion of upcoming contractual maturities of secured funding due to either the inability to refinance or the ability to refinance only at wider haircuts (i.e., on terms which require us to post additional collateral). Our assumptions reflect, among other factors, the quality of the underlying collateral, counterparty roll probabilities (our assessment of the counterparty's likelihood of continuing to provide funding on a secured basis at the maturity of the trade) and counterparty concentration.
- Contingent: Adverse changes in the value of financial assets pledged as collateral for financing transactions, which would necessitate additional collateral postings under those transactions.

OTC Derivatives

- Contingent: Collateral postings to counterparties due to adverse changes in the value of our OTC derivatives, excluding those that are cleared and settled through central counterparties (OTC-cleared).
- Contingent: Other outflows of cash or collateral related to OTC derivatives, excluding OTC-cleared, including the impact of trade terminations, collateral substitutions, collateral disputes, loss of rehypothecation rights, collateral calls or termination payments required by

a two-notch downgrade in our credit ratings, and collateral that has not been called by counterparties, but is available to them.

Exchange-Traded and OTC-cleared Derivatives

- Contingent: Variation margin postings required due to adverse changes in the value of our outstanding exchange-traded and OTC-cleared derivatives.
- Contingent: An increase in initial margin and guaranty fund requirements by derivative clearing houses.

Customer Cash and Securities

- Contingent: Liquidity outflows associated with our prime brokerage business, including withdrawals of customer credit balances, and a reduction in customer short positions, which may serve as a funding source for long positions.

Securities

- Contingent: Liquidity outflows associated with a reduction or composition change in firm short positions, which may serve as a funding source for long positions.

Unfunded Commitments

- Contingent: Draws on our unfunded commitments. Draw assumptions reflect, among other things, the type of commitment and counterparty.

Other

- Other upcoming large cash outflows, such as tax payments.

Intraday Liquidity Model. Our Intraday Liquidity Model measures our intraday liquidity needs using a scenario analysis characterized by the same qualitative elements as our Modeled Liquidity Outflow. The model assesses the risk of increased intraday liquidity requirements during a scenario where access to sources of intraday liquidity may become constrained.

The following are key modeling elements of the Intraday Liquidity Model:

- Liquidity needs over a one-day settlement period;
- Delays in receipt of counterparty cash payments;
- A reduction in the availability of intraday credit lines at our third-party clearing agents; and
- Higher settlement volumes due to an increase in activity.

As noted above, we have estimated the stand-alone liquidity position of each material entity over a stressed period of 30 days in accordance with the RLAP guidance, which includes taking into account the daily contractual mismatches between inflows and outflows, the effect of inter-affiliate frictions, and the daily stressed liquidity flows and trapped liquidity as a result of potential actions taken by clients, counterparties, key FMUs and regulatory authorities. The stand-alone net liquidity position of each material entity is measured using our internal liquidity stress test assumptions, and treats inter-affiliate exposures in the same manner as third-party exposures. It does not assume that a net liquidity surplus at one material entity could be moved to meet net liquidity deficits at other material entities or to augment our parent company's resources.

GCLA and Unencumbered Metrics

GCLA. Based on the results of our internal liquidity risk models, described above, as well as our consideration of other factors including, but not limited to, an assessment of our potential intraday liquidity needs and a qualitative assessment of our condition as well as that of the financial markets, we believe our liquidity position as of both December 2016 and December 2015 was appropriate. As of December 2016 and December 2015, the fair value of the securities and certain overnight cash deposits included in our GCLA totaled $226.07 billion and $199.12 billion, respectively. The fair value of our GCLA averaged $211.10 billion and $187.75 billion for the years ended December 2016 and December 2015, respectively. We strictly limit our GCLA to a narrowly defined list of securities and cash because they are highly liquid, even in a difficult funding environment.

We maintain our GCLA to enable us to meet current and potential liquidity requirements of our parent company, Group Inc., and its subsidiaries. Our Modeled Liquidity Outflow and Intraday Liquidity Model incorporate a consolidated requirement for Group Inc. as well as a standalone requirement for each of our major broker-dealer and bank subsidiaries. Funding IHC is required to provide liquidity to Group Inc. up until a resolution scenario. In addition, Funding IHC will provide funding to certain material entities during business as usual, and is contractually required to provide capital and liquidity to Group Inc.'s major broker-dealer and bank subsidiaries, as well as the other subsidiaries that are parties to the CLSA, during the period leading up to and following a resolution scenario. Liquidity held directly in each of these major subsidiaries is intended for use only by that subsidiary to meet its liquidity requirements and is assumed not to be available to Group Inc. or Funding IHC unless (i) legally provided for and (ii) there are no additional regulatory, tax or other restrictions. In addition, the Modeled Liquidity Outflow and Intraday Liquidity Model also incorporate a broader assessment of standalone liquidity requirements for other subsidiaries and we hold a portion of our GCLA directly at Group Inc. and Funding IHC to support such requirements.

The table below presents the average GCLA of Group Inc. and our major broker-dealer and bank subsidiaries.

	Average for the Year Ended December	
$ in millions	**2016**	2015
Group Inc.	**$ 43,638**	$ 41,284
Major broker-dealer subsidiaries	**86,519**	89,510
Major bank subsidiaries	**80,946**	56,954
Total	**$211,103**	$187,748

Note that a large portion of the GCLA previously held at Group Inc. is now held at the Funding IHC.

Other Unencumbered Assets. In addition to our GCLA, we have a significant amount of other unencumbered cash and financial instruments, including other government obligations, high-grade money market securities, corporate obligations, marginable equities, loans and cash deposits not included in our GCLA. Beginning in January 2016, to be consistent with changes in the manner in which management views unencumbered assets, we included certain loans within our unencumbered assets. The fair value of our unencumbered assets averaged $142.33 billion and $90.36 billion for the years ended December 2016 and December 2015, respectively. Had these loans been included as of December 2015, the fair value of our unencumbered assets would have increased by $44.45 billion. We do not consider these assets liquid enough to be eligible for our GCLA.

Liquidity Regulatory Framework

The final rules on minimum liquidity standards approved by the U.S. federal bank regulatory agencies call for a liquidity coverage ratio (LCR) designed to ensure that banking organizations maintain an adequate level of unencumbered high-quality liquid assets (HQLA) based on expected net cash outflows under an acute short-term liquidity stress scenario. Our GCLA is substantially the same in composition as the assets that qualify as HQLA under these rules.

The LCR became effective in the U.S. on January 1, 2015, with a phase-in period whereby firms had an 80% minimum in 2015, which increased by 10% per year until 2017. For the three months ended December 2016, our average LCR exceeded the fully phased-in minimum requirement.

In addition, in the second quarter of 2016, the U.S. federal bank regulatory agencies issued a proposed rule that calls for a net stable funding ratio (NSFR) for large U.S. banking organizations. The proposal would require banking organizations to ensure they have access to stable funding over a one-year time horizon. The proposed NSFR requirement has an effective date of January 1, 2018, including quarterly disclosure of the ratio, as well as a description of the banking organization's stable funding sources. Based on our interpretation of the current proposal, we estimate that as of December 2016, our NSFR was slightly lower than the proposed requirement; however, we expect that we will be compliant with the requirement by the effective date.

The following is information on our subsidiary liquidity regulatory requirements:

- **GS Bank USA.** GS Bank USA is subject to minimum liquidity standards under the LCR rule approved by the U.S. federal bank regulatory agencies that became effective on January 1, 2015, with the same phase-in through 2017 described above. The U.S. federal bank regulatory agencies' proposed rule on the NSFR described above would also apply to GS Bank USA.

- **GSI.** The LCR rule issued by the U.K. regulatory authorities became effective in the U.K. on October 1, 2015, with a phase-in period whereby certain financial institutions, including GSI, were required to have an 80% minimum ratio initially, increasing to 90% on January 1, 2017 and 100% on January 1, 2018.

- **Other Subsidiaries.** We monitor the local regulatory liquidity requirements of our subsidiaries to ensure compliance. For many of our subsidiaries, these requirements either have changed or are likely to change in the future due to the implementation of the Basel Committee's framework for liquidity risk measurement, standards and monitoring, as well as other regulatory developments.

The implementation of these rules, and any amendments adopted by the applicable regulatory authorities, could impact our liquidity and funding requirements and practices in the future.

Funding Sources

Our primary sources of funding are secured financings, unsecured long-term and short-term borrowings, and deposits. We seek to maintain broad and diversified funding sources globally across products, programs, markets, currencies and creditors to avoid funding concentrations.

We raise funding through a number of different products, including:

- Collateralized financings, such as repurchase agreements, securities loaned and other secured financings;
- Long-term unsecured debt (including structured notes) through syndicated U.S. registered offerings, U.S. registered and Rule 144A medium-term note programs, offshore medium-term note offerings and other debt offerings;
- Savings, demand and time deposits through internal and third-party broker-dealers, as well as from retail and institutional customers; and
- Short-term unsecured debt at the subsidiary level through U.S. and non-U.S. hybrid financial instruments and other methods.

Our funding is primarily raised in U.S. dollar, Euro, British pound and Japanese yen. We generally distribute our funding products through our own sales force and third-party distributors to a large, diverse creditor base in a variety of markets in the Americas, Europe and Asia. We believe that our relationships with our creditors are critical to our liquidity. Our creditors include banks, governments, securities lenders, pension funds, insurance companies, mutual funds and individuals. We have imposed various internal guidelines to monitor creditor concentration across our funding programs.

Secured Funding. We fund a significant amount of inventory on a secured basis, including repurchase agreements, securities loaned and other secured financings. As of December 2016 and December 2015, secured funding included in "Collateralized financings" in the consolidated statements of financial condition was $100.86 billion and $114.44 billion, respectively. We may also pledge our inventory as collateral for securities borrowed under a securities lending agreement or as collateral for derivative transactions. We also use our own inventory to cover transactions in which we or our clients have sold securities that have not yet been purchased. Secured funding is less sensitive to changes in our credit quality than unsecured funding, due to our posting of collateral to our lenders. Nonetheless, we continually analyze the refinancing risk of our secured funding activities, taking into account trade tenors, maturity profiles, counterparty concentrations, collateral eligibility and counterparty rollover probabilities. We seek to mitigate our refinancing risk by executing term trades with staggered maturities, diversifying counterparties, raising excess secured funding, and pre-funding residual risk through our GCLA.

We seek to raise secured funding with a term appropriate for the liquidity of the assets that are being financed, and we seek longer maturities for secured funding collateralized by asset classes that may be harder to fund on a secured basis, especially during times of market stress. Our secured funding, excluding funding collateralized by liquid government obligations, is primarily executed for tenors of one month or greater. Assets that may be harder to fund on a secured basis during times of market stress include certain financial instruments in the following categories:

mortgage and other asset-backed loans and securities, non-investment-grade corporate debt securities, equities and convertible debentures and emerging market securities. Assets that are classified as level 3 in the fair value hierarchy are generally funded on an unsecured basis.

The weighted average maturity of our secured funding included in "Collateralized financings" in the consolidated statements of financial condition, excluding funding that can only be collateralized by highly liquid securities eligible for inclusion in our GCLA, exceeded 120 days as of December 2016.

A majority of our secured funding for securities not eligible for inclusion in the GCLA is executed through term repurchase agreements and securities loaned contracts. We also raise financing through other types of collateralized financings, such as secured loans and notes. GS Bank USA has access to funding from the Federal Home Loan Bank (FHLB). As of December 2016, our outstanding borrowings against the FHLB were $2.43 billion.

GS Bank USA also has access to funding through the Federal Reserve Bank discount window. While we do not rely on this funding in our liquidity planning and stress testing, we maintain policies and procedures necessary to access this funding and test discount window borrowing procedures.

Unsecured Long-Term Borrowings. We issue unsecured long-term borrowings as a source of funding for inventory and other assets and to finance a portion of our GCLA. We issue in different tenors, currencies and products to maximize the diversification of our investor base.

The table below presents our quarterly unsecured long-term borrowings maturity profile as of December 2016:

$ in millions	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
2018	$9,127	$8,156	$4,858	$ 4,563	$ 26,704
2019	6,634	5,975	2,765	10,220	25,594
2020	4,480	7,495	5,475	959	18,409
2021	2,652	3,497	7,347	7,249	20,745
2022 - thereafter					97,634
Total					$189,086

The weighted average maturity of our unsecured long-term borrowings as of December 2016 was approximately eight years. To mitigate refinancing risk, we seek to limit the principal amount of debt maturing on any one day or during any week or year. We enter into interest rate swaps to convert a portion of our unsecured long-term borrowings into floating-rate obligations in order to manage our exposure to interest rates.

Deposits. Our deposits provide us with a diversified source of liquidity and reduce our reliance on wholesale funding. A growing source of our deposit base is comprised of retail deposits. Deposits are primarily used to finance lending activity, other inventory and a portion of our GCLA. We raise deposits primarily through GS Bank USA and GSIB. The table below presents the types and sources of our deposits.

$ in millions	Savings and Demand	Time	Total
As of December 2016			
Private bank and online retail	**$61,166**	**$ 4,437**	**$ 65,603**
Brokered certificates of deposit	**—**	**34,905**	**34,905**
Deposit sweep programs	**16,019**	**—**	**16,019**
Institutional	**12**	**7,559**	**7,571**
Total	**$77,197**	**$46,901**	**$124,098**
As of December 2015			
Private bank	$38,715	$ 2,354	$ 41,069
Brokered certificates of deposit	—	32,419	32,419
Deposit sweep programs	15,791	—	15,791
Institutional	1	8,239	8,240
Total	$54,507	$43,012	$ 97,519

Unsecured Short-Term Borrowings. A significant portion of our unsecured short-term borrowings was originally long-term debt that is scheduled to mature within one year of the reporting date. We use unsecured short-term borrowings, including hybrid financial instruments, to finance liquid assets and for other cash management purposes. In light of regulatory developments, Group Inc. no longer issues debt with an original maturity of less than one year, other than to its subsidiaries.

As of December 2016 and December 2015, our unsecured short-term borrowings, including the current portion of unsecured long-term borrowings, were $39.27 billion and $42.79 billion, respectively.

SI 4. Description of Derivatives and Hedging Activities

Derivatives are instruments that derive their value from underlying asset prices, indices, reference rates and other inputs, or a combination of these factors. Derivatives may be traded on an exchange or they may be privately negotiated contracts, which are usually referred to as OTC derivatives. Certain of the firm's OTC derivatives are cleared and settled through central clearing counterparties, while others are bilateral contracts between two counterparties.

Market-Making. As a market maker, the firm enters into derivative transactions to provide liquidity to clients and to facilitate the transfer and hedging of their risks. In this role, the firm typically acts as principal and is required to commit capital to provide execution, and maintains inventory in response to, or in anticipation of, client demand.

Risk Management. The firm also enters into derivatives to actively manage risk exposures that arise from its market-making and investing and lending activities in derivative and cash instruments. The firm's holdings and exposures are hedged, in many cases, on either a portfolio or risk-specific basis, as opposed to an instrument-by-instrument basis. The offsetting impact of this economic hedging is reflected in the same business segment as the related revenues. In addition, the firm may enter into derivatives designated as hedges under U.S. GAAP. These derivatives are used to manage interest rate exposure in certain fixed-rate unsecured long-term and short-term borrowings, and deposits, and to manage foreign currency exposure on the net investment in certain non-U.S. operations.

The firm enters into various types of derivatives, including:

- **Futures and Forwards.** Contracts that commit counterparties to purchase or sell financial instruments, commodities or currencies in the future.
- **Swaps.** Contracts that require counterparties to exchange cash flows such as currency or interest payment streams. The amounts exchanged are based on the specific terms of the contract with reference to specified rates, financial instruments, commodities, currencies or indices.
- **Options.** Contracts in which the option purchaser has the right, but not the obligation, to purchase from or sell to the option writer financial instruments, commodities or currencies within a defined time period for a specified price.

Derivatives are reported on a net-by-counterparty basis (i.e., the net payable or receivable for derivative assets and liabilities for a given counterparty) when a legal right of setoff exists under an enforceable netting agreement (counterparty netting). Derivatives are accounted for at fair value, net of cash collateral received or posted under enforceable credit support agreements (cash collateral netting).

SI 5. Memberships in Material Payment, Clearing and Settlement Systems

Set forth below is a list of our memberships and contractual relationships with the most material payment, clearing and settlement systems:

Market	Payment, Clearing and Settlement Systems	Description of Services
Global	▪ The Bank of New York Mellon	Agent bank providing tri-party services, corporate trust services, direct credit support, US government security clearing, custody services, and USD clearing to multiple GS entities globally
	▪ Citibank	Agent bank providing settlement and custody services across multiple global markets
	▪ CLS Bank Limited	Multi-currency cash settlement system that settles payment instructions related to trades in FX spot contracts, FX forwards, FX options, FX swaps, non-deliverable forwards, credit derivatives and 17 major currencies
	▪ HSBC	Agent bank providing settlement and custody services across multiple global markets
	▪ Standard Chartered Bank	Agent bank providing settlement and custody services across multiple global markets
	▪ SWIFT	Telecommunication platform for the exchange of standardized financial messages between financial institutions and corporations
Japan	▪ Japan Securities Clearing Corporation	Clearing service provider for Japanese equities, bonds and derivatives
	▪ Japan Securities Depository	Japan's central securities depository
Europe	▪ Eurex Clearing AG	Central counterparty for derivatives, equities, repo, energy and fixed income transactions
	▪ Euroclear	International central securities depository and provider of settlement services for cross-border transactions involving bonds, equities, derivatives and investment funds
	▪ European Central Counterparty N.V.	Central counterparty clearing equities from various European markets and from the U.S., as well as ETFs, currency ETCs and depositary receipts
	▪ ICE Clear Europe	Clearing house for OTC energy and emissions markets and European credit default swaps
	▪ LCH.Clearnet Group	Central counterparty providing clearing for commodities (exchange traded and OTC), equities, fixed income, energy and freight, and interest rate and credit default swaps
United States	▪ Chicago Mercantile Exchange, Inc.	Clearing and settlement services provider for futures, options, and OTC derivatives products
	▪ The Depository Trust Company	Central depository providing depository and book-entry services for eligible securities and other financial assets
	▪ Fixed Income Clearing Corporation	Clearing, settlement, risk management, central counterparty services provider for U.S. Government securities and mortgage-backed securities
	▪ ICE Clear Credit LLC	Clearing house for North American credit default swaps
	▪ ICE Clear U.S.	Clearing house for agriculture, foreign exchange and equity index futures markets
	▪ National Securities Clearing Corporation Ltd.	Clearing, settlement, risk management, central counterparty services provider for equities, corporate and municipal debt, American depositary receipts, ETFs, and unit investment trusts
	▪ Options Clearing Corporation	Central clearing and settlement services provider for options on common stocks and other equity issues, stock indices, foreign currencies, interest rate composites, single-stock futures, futures, options on futures, and securities lending transactions

SI 6. Description of Foreign Operations

Our most significant overseas material operating entities for the purposes of resolution planning are:

- Goldman Sachs International (U.K. Broker-Dealer)
- Goldman Sachs International Bank (U.K. Bank)
- Goldman Sachs Japan Co., Ltd (Japan Broker-Dealer)

In total, we have a physical presence in over 30 countries, but our business activities are highly concentrated in just three: the United States, the United Kingdom and Japan.

Due to the highly integrated nature of international financial markets, the firm manages its businesses based on the profitability of the enterprise as a whole. The methodology for allocating profitability to geographic regions is dependent on estimates and management judgment because a significant portion of the firm's activities require cross-border coordination in order to facilitate the needs of the firm's clients.

Geographic results for the firm (not just the core business lines identified in Supporting Information Section SI 1 above) are generally allocated as follows:

- Investment Banking: location of the client and investment banking team.
- Institutional Client Services: Fixed Income, Currency and Commodities Client Execution, and Equities (excluding Securities Services): location of the market-making desk; Securities Services: location of the primary market for the underlying security.
- Investing & Lending: Investing: location of the investment; Lending: location of the client.
- Investment Management: location of the sales team.

The table below presents the total net revenues, pre-tax earnings and net earnings of the firm by geographic region allocated based on the methodology referred to above, as well as the percentage of total net revenues, pre-tax earnings and net earnings (excluding Corporate) for each geographic region. In the table below, Asia includes Australia and New Zealand.

	Year Ended December					
$ in millions	**2016**		2015		2014	
Net revenues						
Americas	**$18,144**	**60%**	$19,202	56%	$20,062	58%
Europe, Middle East and Africa	**8,040**	**26%**	8,981	27%	9,057	26%
Asia	**4,424**	**14%**	5,637	17%	5,409	16%
Total net revenues	**$30,608**	**100%**	$33,820	100%	$34,528	100%
Pre-tax earnings						
Americas	**$ 6,352**	**61%**	$ 3,359	37%	$ 7,144	57%
Europe, Middle East and Africa	**2,883**	**28%**	3,364	38%	3,338	27%
Asia	**1,183**	**11%**	2,203	25%	2,012	16%
Subtotal	**10,418**	**100%**	8,926	100%	12,494	100%
Corporate	**(114)**		(148)		(137)	
Total pre-tax earnings	**$10,304**		$ 8,778		$12,357	
Net earnings						
Americas	**$ 4,337**	**58%**	$ 1,587	26%	$ 4,558	53%
Europe, Middle East and Africa	**2,270**	**30%**	2,914	47%	2,576	30%
Asia	**870**	**12%**	1,686	27%	1,434	17%
Subtotal	**7,477**	**100%**	6,187	100%	8,568	100%
Corporate	**(79)**		(104)		(91)	
Total net earnings	**$ 7,398**		$ 6,083		$ 8,477	

In the table above:

- Americas pre-tax earnings includes provisions of $3.37 billion recorded during 2015 for the settlement agreement with the RMBS Working Group.
- Corporate pre-tax earnings includes charitable contributions that have not been allocated to the firm's geographic regions.
- Substantially all of the amounts in Americas were attributable to the U.S.

SI 7. Material Supervisory Authorities

Regulation

As a participant in the banking, securities, investment management, and derivatives industries, we are subject to extensive regulation worldwide. Regulatory bodies around the world are generally charged with safeguarding the integrity of the securities and other financial markets and with protecting the interests of the customers of market participants, including depositors in banking entities and the customers of banks, broker-dealers, investment advisers, swap dealers and security-based swap dealers. The following section refers to the firm (i.e., not only the material entities or the core business lines).

Bank Holding Company Regulation

Group Inc. is a bank holding company under the U.S. Bank Holding Company Act of 1956 ("BHC Act") and a financial holding company under amendments to the BHC Act effected by the U.S. Gramm-Leach-Bliley Act of 1999.

As a bank holding company and a financial holding company under the BHC Act, Group Inc. is subject to supervision and examination by the Federal Reserve Board. Under the system of "functional regulation" established under the BHC Act, the Federal Reserve Board serves as the primary regulator of our consolidated organization. The primary regulators of our U.S. non-bank subsidiaries directly regulate the activities of those subsidiaries, with the Federal Reserve Board exercising a supervisory role. Such "functionally regulated" U.S. non-bank subsidiaries include broker-dealers registered with the SEC, such as our principal U.S. broker-dealer, GS&Co., entities registered with or regulated by the CFTC with respect to futures-related and swaps-related activities and investment advisers registered with the SEC with respect to their investment advisory activities.

Bank Subsidiaries

Our principal U.S. bank subsidiary, GS Bank USA, is supervised and regulated by the Federal Reserve Board, the FDIC, the New York State Department of Financial Services and the U.S. Consumer Financial Protection Bureau. A number of our activities are conducted partially or entirely through GS Bank USA and its subsidiaries, including: origination of bank loans; personal loans and mortgages; interest rate, credit, currency and other derivatives; leveraged finance; structured finance; deposit-taking; and agency lending.

The firm's principal non-U.S. bank subsidiary, GSIB, is a wholly-owned credit institution, regulated by the PRA and the FCA in the United Kingdom.

Broker-Dealer and Securities Regulation

Our broker-dealer subsidiaries are subject to regulations that cover all aspects of the securities business, including sales methods, trade practices, use and safekeeping of clients' funds and securities, capital structure, record-keeping, the financing of clients' purchases, and the conduct of directors, officers and employees. In the U.S., the SEC is the federal agency responsible for the administration of the federal securities laws. GS&Co. is registered as a broker-dealer, a municipal advisor and an investment adviser with the SEC and as a broker-dealer in all 50 states and the District of Columbia. U.S. self-regulatory organizations, such as FINRA and the New York Stock Exchange (the “NYSE”), adopt rules that apply to, and examine, broker-dealers such as GS&Co.

In addition, U.S. state securities and other U.S. regulators also have regulatory or oversight authority over GS&Co. Similarly, our businesses are also subject to regulation by various non-U.S. governmental and regulatory bodies and self-regulatory authorities in virtually all countries where we have offices.

Our exchange-based market-making activities are subject to extensive regulation by a number of securities exchanges. As a market maker on exchanges, we are required to maintain orderly markets in the securities to which we are assigned.

Swaps, Derivatives and Commodities Regulation

The commodity futures, commodity options and swaps industry in the U.S. is subject to regulation under the U.S. Commodity Exchange Act (CEA). The CFTC is the U.S. federal agency charged with the administration of the CEA. In addition, the SEC is the U.S. federal agency charged with the regulation of security-based swaps. GS&Co. is registered with the CFTC as a futures commission merchant, and several of our subsidiaries, including GS&Co., are registered with the CFTC and act as commodity pool operators, commodity trading advisors and/or swap dealers, and are subject to CFTC regulations. The rules and regulations of various self-regulatory organizations, such as the Chicago Board of Trade and the Chicago Mercantile Exchange, other futures exchanges and the National Futures Association, also govern the commodity futures, commodity options and swaps activities of these entities. In addition, Goldman Sachs Financial Markets, L.P. is registered with the SEC as an OTC derivatives dealer and conducts certain OTC derivatives activities.

We have registered certain subsidiaries as “swap dealers” under the CFTC rules, including GS&Co., GS Bank USA, GSI and JANY. Similar regulations have been proposed or adopted in jurisdictions outside the U.S., including the adoption of standardized execution and clearing, margining and reporting requirements for OTC derivatives.

The full impact of the various U.S. and non-U.S. regulatory developments in this area will not be known with certainty until all the rules are finalized and implemented and market practices and structures develop under the final rules.

JANY is authorized by the FERC to sell wholesale physical power at market-based rates. As a FERC-authorized power marketer, JANY is subject to regulation under the U.S. Federal Power Act and FERC regulations and to the oversight of FERC. As a result of our investing activities, Group Inc. is also an “exempt holding company” under the U.S. Public Utility Holding Company Act of 2005 and applicable FERC rules.

In addition, as a result of our power-related and commodities activities, we are subject to energy, environmental and other governmental laws and regulations.

Investment Management Regulation

Our investment management business is subject to significant regulation in numerous jurisdictions around the world relating to, among other things, the safeguarding of client assets, offerings of funds, marketing activities, transactions among affiliates and our management of client funds. Certain of our subsidiaries are registered with, and subject to oversight by, the SEC as investment advisers.

Certain of our European subsidiaries are subject to the Alternative Investment Fund Managers Directive and related regulations, which govern the approval, organizational, marketing and reporting requirements of E.U.-based alternative investment managers and the ability of alternative investment fund managers located outside the E.U. to access the E.U. market.

Non-U.S. Regulated Broker-Dealer Subsidiaries

In Europe, we provide broker-dealer services that are subject to oversight by national regulators. These services are regulated in accordance with national laws, many of which implement E.U. directives, and, increasingly, by directly applicable E.U. regulations. These national and E.U. laws require, among other things, compliance with certain capital adequacy standards, customer protection requirements and market conduct and trade reporting rules.

The firm's principal non-U.S. regulated broker-dealer subsidiaries include GSI and GSJCL. GSI, the firm's U.K. broker-dealer, is regulated by the PRA and the FCA. GSJCL, the firm's Japanese broker-dealer, is regulated by Japan's Financial Services Agency. These and certain other non-U.S. subsidiaries of the firm are also subject to capital adequacy requirements promulgated by authorities of the countries in which they operate.

SI 8. Principal Officers

Set forth below are the name, present title, principal occupation and certain biographical information for our executive officers, and our Chief Risk Officer. Our executive officers have been appointed by and serve at the pleasure of our Board.

- **Lloyd C. Blankfein.** Mr. Blankfein has been our Chairman and Chief Executive Officer since June 2006, and a director since April 2003.
- **R. Martin Chavez.** Mr. Chavez has been an Executive Vice President and Chief Financial Officer of Goldman Sachs since May 2017. He previously served as Chief Information Officer and global co-chief operating officer of the Equities Franchise.
- **Edith W. Cooper.** Ms. Cooper has been an Executive Vice President of Goldman Sachs since April 2011 and Global Head of Human Capital Management since March 2008.
- **Richard J. Gnodde.** Mr. Gnodde has been a Vice Chairman of Goldman Sachs since January 2017, Chief Executive Officer or co-Chief Executive Officer of Goldman Sachs International since 2006. He previously served as co-head of the Investment Banking Division from 2011 through May 2017.
- **Gregory K. Palm.** Mr. Palm has been an Executive Vice President of Goldman Sachs since May 1999, and General Counsel and head or co-head of the Legal Department since May 1992.
- **John F.W. Rogers.** Mr. Rogers has been an Executive Vice President of Goldman Sachs since April 2011 and Chief of Staff and Secretary to the Board of Directors of Goldman Sachs since December 2001.
- **Pablo J. Salame.** Mr. Salame has been a Vice Chairman of Goldman Sachs since January 2017 and global co-head of the Securities Division since 2008.
- **Harvey M. Schwartz.** Mr. Schwartz has been President and co-Chief Operating Officer of Goldman Sachs since January 2017. He served as Chief Financial Officer from January 2013 through April 2017 and global co-head of the Securities Division from February 2008 through January 2013.
- **Sarah E. Smith.** Ms. Smith has been an Executive Vice President and Global Head of Compliance of Goldman Sachs since March 2017. Ms. Smith had previously served as Controller and Chief Accounting Officer since 2002.

- **David M. Solomon.** Mr. Solomon has been President and co-Chief Operating Officer of Goldman Sachs since January 2017. He had previously served as co-head of the Investment Banking Division since July 2006.

- **Craig W. Broderick.** Mr. Broderick has been Chief Risk Officer of Goldman Sachs since 2008. From 1999 to 2008, Mr. Broderick was Chief Credit Officer.

SI 9. Description of Material Management Information Systems

Goldman Sachs has a long-standing history of investing in technology. Our management information systems are designed to support and enable the firm's core functions across all service and business units. As an integral component of our Resolution Plan, our systems serve to manage risk and provide complete, timely and accurate information.

Over recent years, we have invested in the broad adoption of platform strategies to support the firm's enterprise architecture. In most cases, a single technology platform supports a given function across all geographies and entities. For example, our broker-dealer subsidiary in Tokyo books its secured funding transactions (such as repos) into the same technology platform as our broker-dealer subsidiaries in London, New York or elsewhere. This results in a high degree of consistency in both functionality and reporting to enable key decision making at all levels.

As a firm, we place a strong focus on developing software applications internally, although we also make use of third-party vendor software. Our system architecture supports data, modeling, user interface and workflow capabilities, which our MIS systems leverage to provide a rich feature set for our businesses. To ensure the rigor and effectiveness of our systems, we have focused on promoting standardization and reusability.

Our data aggregation capabilities and risk reporting practices are overseen by a governance framework which is supported by documented policies, standards and procedures. We recognize that, in a resolution scenario, the effectiveness of our systems is driven by adhering to an appropriate governance framework which is supported by the relevant controls. For example, our business resiliency program is intended to ensure that all critical applications, including our data aggregation capabilities and risk reports, are available not only in normal times, but also during times of stress or crisis scenarios.

The Firmwide Technology Risk Committee reviews matters related to the design, development, deployment and use of technology: it oversees and monitors the effectiveness of cyber security matters, as well as technology risk management frameworks and methodologies. Our governance framework is supported by documented policies, standards and procedures. We have developed and implemented a framework of principles, policies and technology to protect client and firm assets from cyber-attacks and other misappropriation, corruption or loss; safeguards are applied to maintain the confidentiality and availability of information resources.

Our MIS have extensive ad hoc reporting capabilities, and have been used extensively to prepare financial and other information used in the preparation of our Resolution Plan. We have performed a detailed assessment of our ability to satisfy MIS reporting requirements in resolution, and we have determined that there are no material gaps or weaknesses in our ability to provide relevant data in a crisis scenario.

Recovery and Resolution Systems

As our resolution planning process progressed, we came to recognize the benefits of being able to identify, aggregate, visualize and easily navigate key interdependencies and relationships across the firm's legal entities and critical services. We therefore developed a new platform that leverages existing, authoritative sources of data, and links them in a flexible and adaptable way to provide a holistic understanding and visualization of the firm's legal entities, services, functions, systems, people, vendors and facilities. The tool is integrated with several of the firm's other platforms, including the global framework for the documentation and management of the inter-affiliate SLAs, the firm's "document lake" which stores resolution-critical legal agreements and associated metadata, and the firm's "data lake" which is a central data warehousing solution.

SI 10. Reconciliation of Non-GAAP Balance Sheet Allocation

The table below presents the reconciliation of the balance sheet allocation on page 15 to our U.S. GAAP balance sheet:

$ in millions	GCLA and Cash	Secured Client Financing	Institutional Client Services	Investing & Lending	Total
As of December 2016					
Cash and cash equivalents	**$ 107,066**	**$ 14,645**	**$ –**	**$ –**	**$ 121,711**
Securities purchased under agreements to resell and federal funds sold	**56,583**	**40,436**	**18,844**	**1,062**	**116,925**
Securities borrowed	**41,652**	**96,186**	**46,762**	**–**	**184,600**
Receivables from brokers, dealers and clearing organizations	**–**	**6,540**	**11,504**	**–**	**18,044**
Receivables from customers and counterparties	**–**	**26,286**	**18,088**	**3,406**	**47,780**
Loans receivable	**–**	**–**	**–**	**49,672**	**49,672**
Financial instruments owned, at fair value	**29,853**	**15,294**	**206,988**	**43,817**	**295,952**
Subtotal	**$ 235,154**	**$ 199,387**	**$ 302,186**	**$ 97,957**	**$ 834,684**
Other assets					**25,481**
Total assets					**$ 860,165**
As of December 2015					
Cash and cash equivalents	$ 75,105	$ 18,334	$ –	$ –	$ 93,439
Securities purchased under agreements to resell and federal funds sold	60,092	56,189	16,368	1,659	134,308
Securities borrowed	33,260	97,251	47,127	–	177,638
Receivables from brokers, dealers and clearing organizations	–	5,912	19,541	–	25,453
Receivables from customers and counterparties	–	24,077	20,435	1,918	46,430
Loans receivable	–	–	–	45,407	45,407
Financial instruments owned, at fair value	39,843	19,562	208,836	45,261	313,502
Subtotal	$ 208,300	$ 221,325	$ 312,307	$ 94,245	$ 836,177
Other assets					25,218
Total assets					$ 861,395

In the table above:

- Total assets for Institutional Client Services and Investing & Lending represent inventory and related assets.