

Deepening of EMU: how to improve macroeconomic stabilisation using fiscal policy at the euro area level?

Remarks prepared for Policy Panel Fourth ECB Biennial Conference on Fiscal Policy and EMU Governance December 2019

Silvia Ardagna

Goldman Sachs Investment Strategy Group

This material is for educational purposes only

This material represents the views of the Investment Strategy Group of the Investment Management Division of Goldman Sachs and is not a product of the Goldman Sachs Global Investment Research Department.



The Blackrock Proposal

1. Helicopter Money not in its purest form, nor in the form of QE, but...

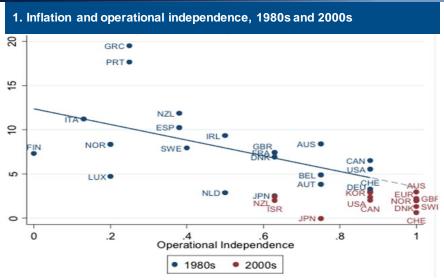


2. ..via Coordination of Monetary and Fiscal Policy

- A standing emergency fiscal facility (SEFF) to operate on top of automatic stabilisers and discretionary spending, with the explicit objective of bringing the price-level back to target.
- The central bank would activate the SEFF when interest rates cannot be lowered and a significant inflation miss is expected over the policy horizon.
- The central bank would determine the size of the SEFF based on its estimates of what is needed to get the mediumterm trend price level back to target and would determine ex ante the exit point.
- Monetary policy would operate similar to yield curve control, holding yields at zero while fiscal spending ramps up.

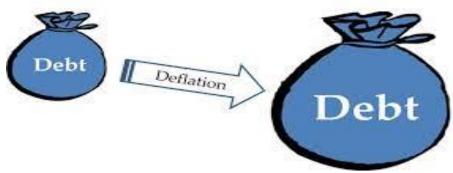
The Risks





2. Euro Area Inflation Expectations, 5-year average 100% 90% 80% 70% 60% 50% 40% 30% ■ High Inflation(>2.5%) 20% ■ Medium Inflation (1.5%-2.5%) □Low Inflation (<1%) 10% 2010 2011 2012 2013 2015 2017 2018 2019 2014 2016

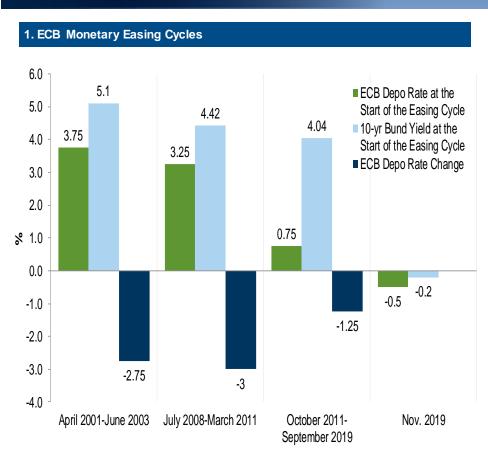
The effects of deflation on debts

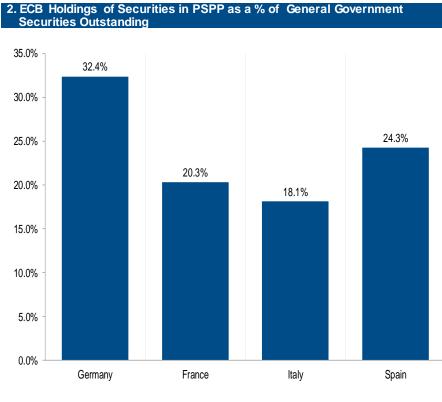






The Rationale: (1) Lack of Monetary Policy Space

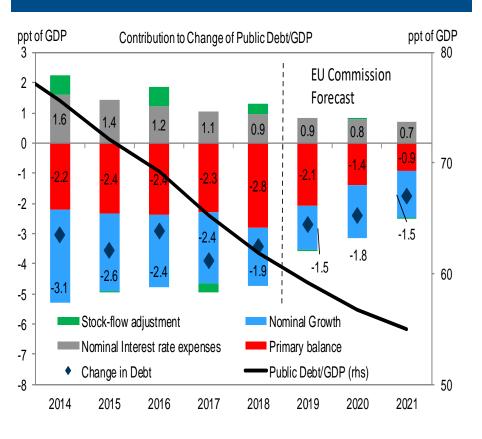




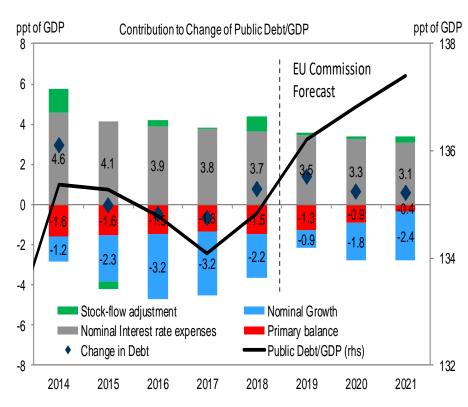
Goldman Sachs

The Rationale: (2) Limited Fiscal Space

1. Germany's government debt dynamics

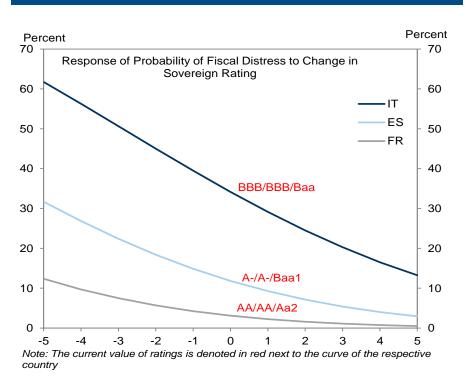


2. Italy's government debt dynamics

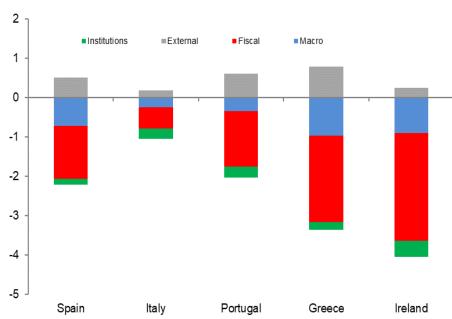




1. Fiscal Space for Countries with Different Sovereign Credit Ratings



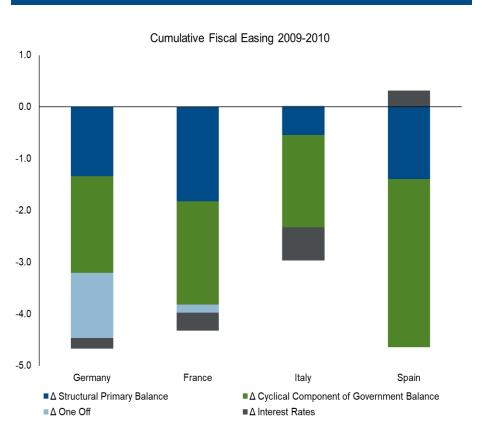
2. Fiscal Factors and Ratings Agencies' Downgrades in 2008-2012





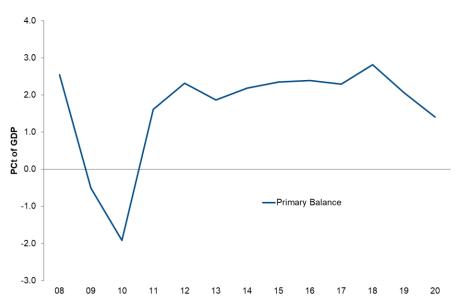
The Rationale: (2) Limited Fiscal Space

1. Fiscal Easing in 2009-2010



Key Questions:

• How Large Should Fiscal Easing in Germany Be to Make a Difference for the Entire Euro area? Is It Feasible? Would It Be Sufficient?



Deepening of EMU: how to improve macroeconomic stabilisation using fiscal policy at the euro area level?

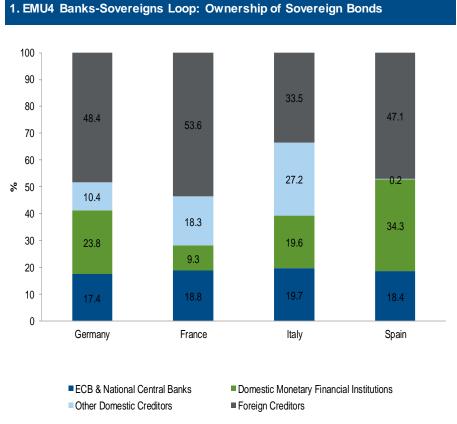




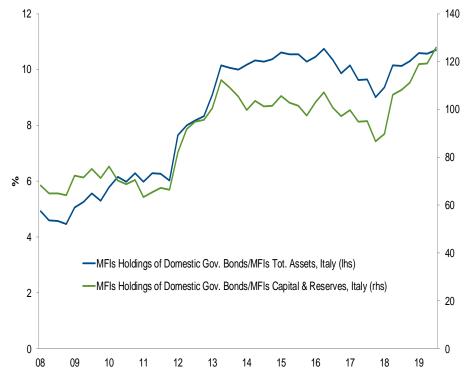
- A 'Package' = Central fiscal stabilization mechanism as a complement to national fiscal policies + strong monetary and fiscal coordination + a Euro safe asset
- A **central fiscal capacity** to activate when common shock hits the Euro area or to support the ECB in achieving its inflation mandate.
 - o <u>Instrument choice</u>: consider multiplier/impact on growth and inflation and time lags. Governance: an independent fiscal body mimic the appointment rules of the ECB?.
 - o <u>Complementary to (i)</u> national fiscal policy used to respond to an idiosyncratic country level shock, redistribute resources within country according to national preferences; (ii) Euro area budget for competitiveness and convergence, (iii) ESM loans/programme + OMT for speculative attack on a country.
 - Easier to sell politically?: no legacy, no mutualisation of previous liabilities, independence of Euro area fiscal body safeguard against national political influence, moral hazard
 - No further burden for national budgets in a slowdown: help preventing rating downgrades and fiscal crisis and perhaps also easy some governments' resistance to fiscal expansions
- Coordination between monetary and fiscal body to activate the fiscal facility.
- **Issuance of a safe asset** to fund the fiscal facility -e.g.: ESM bonds to be bought by ECB



A Safe Asset To Break the Bank-Sovereign Doom-Loop



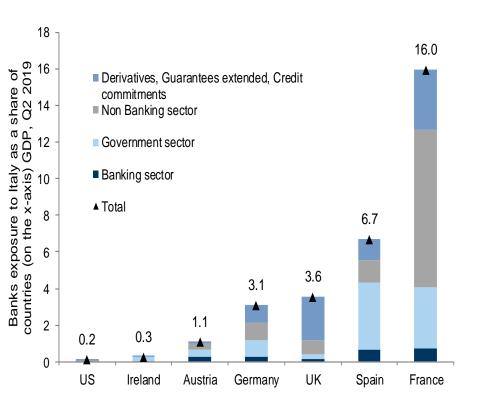
1. Italy's Banks-Sovereign Loop





A Safe Asset To Break the Bank-Sovereign Doom-Loop

1. Mind Spill-Over Effects From Impairing Sovereign Market Access



2. Key Issues for Markets

- Threshold Above Which Concentration Charges Are Applied
- Size of National Public Debt vs Size of Euro Area Safe Asset
- Seniority Structure of National vs Supranational Debt

3. The Carrot and The Stick

- A Maastricht Treaty for Conversion of Government Securities
- A Truly Federal Fiscal System



Consumer and Investment Management Division

Consumer and Investment Management Division



11

Thank you for reviewing this presentation. Please review the important information below.

Our Relationship with Clients. Depending on our relationship with you, we may act as an advisor, a broker-dealer, or both. Our role and obligations vary depending on the capacity in which we act. Where we act as an advisor, our primary role is to give you advice, help you manage your investments or, where applicable, help you hire another advisor to do so. Where we act as a broker, our primary role is to execute trades for you based on your instructions and any advice we give you is incidental to our brokerage services. How we are compensated by you (and sometimes by issuers or managers of investments who compensate us based on what you buy) and how your Private Wealth Management ("PWM") team is compensated may change over time and will vary depending on various factors including, but not limited to, whether you are classified as a professional or retail client, have an advisory or brokerage account, and on the investments made in your account. Please ask us questions to make sure you understand your rights and our obligations to you, the difference between advisory and brokerage accounts, and or how we are compensated based on the capacity in which we act. We are part of a full-service, integrated investment banking, investment management, and brokerage firm. Other firm businesses may implement investment strategies that are different from the strategies used or recommended for your portfolio.

Entities Providing Services. Investment advisory services may be provided by Goldman Sachs & Co. LLC ("GS&Co."), an affiliate, or an external manager under the w rap programsponsored by GS&Co. Brokerage services are provided by GS&Co., member Financial Industry Regulatory Authority ("FINRA") / Securities Investor Protection Corporation ("SIPC"). Brokerage services, banking services (including check-writing, debit cards, direct debit, direct deposit, electronic bill pay, overdraft protection and Bank to Bank Transfers via ACH), custody, margin loans and strategic we ealth advisory services are provided by GS&Co. Financial counseling services are provided by The Ayco Company, L.P. Over-The-Counter ("OTC") derivatives, foreign exchange forwards and related financing are offered by GS&Co. Trust services are provided by The Goldman Sachs Trust Company, N.A. or The Goldman Sachs Trust Company of Delaw are. All of these affiliated entities are subsidiaries of The Goldman Sachs Group, Inc. ("Firm" or "GS"). Deposit products, mortgages, and bank loans are offered by Goldman Sachs Bank USA, member Federal Deposit Insurance Corporation ("FDIC") and an Equal Housing Lender.

Investment Strategy Group ("ISG"). ISG is part of the Consumer Investment Management Division of GS and is focused on asset allocation strategy formation and market analysis. This material represents the view sof ISG in the Consumer Investment Management Division (CIMD) of Goldman Sachs. It is not financial research or a product of Goldman Sachs Global Investment Research (GIR). It was not prepared in compliance with applicable provisions of law designed to promote the independence of financial analysis and is not subject to a prohibition on trading following the distribution of financial research. If show n, ISG Model Portfolios are provided for illustrative purposes only. Your actual asset allocation may look significantly different based on your particular circumstances and risk tolerance. If a model performance calculation is provided, it assumes that (1) each asset class was owned in accordance with the recommended weight; (2) all tactical tilts were implemented at the time the recommendation was made; and (3) the portfolio was rebalanced every time a tactical tilt change was made and at the end of every quarter (unless a tactical tilt was made within a month of quarter-end). If model performance is shown, it is calculated using the daily returns (actual or interpolated) of indices that ISG believes are representative of the asset classes included in the model. Results shown reflect the total return but generally do not take into account any investment management fees, commissions or other transaction expenses, which would reduce returns. The results shown reflect the reinvestment of dividends and other earnings. All returns are pre-tax and are not adjusted for inflation. Additional information about the model portfolio performance calculation, including asset class benchmarks used for modeling performance and a history of tactical tilts, is available upon request.

Investment Risks and Information. Risks vary by the type of investment. Additional information regarding investments and risks may be available in applicable product materials. Before transacting or investing, you should review and understand the terms of a transaction/investment and the nature and extent of the associated risks, and you should be satisfied the investment is appropriate for you in light of your individual circumstances and financial condition.

- Alternative Investments. Alternative investments may involve a substantial degree of risk, including the risk of total loss of an investor's capital and the use of leverage, and may not be
 appropriate for all investors. Private equity, private real estate, hedge funds, and other alternative investments structured as private investment funds are subject to less regulation than other types
 of pooled vehicles and liquidity may be limited. You should review the Offering Memorandum, the Subscription Agreement, and any other applicable offering documents for risks, potential conflicts
 of interest, terms and conditions and other disclosures.
- Commodities Commodity investments may be less liquid and more volatile than other investments. The risk of loss in trading commodities can be substantial due, but not limited, to volatile political, market and economic conditions. An investor's returns may change radically at any time since commodities are subject to abrupt changes in price. Commodity prices are volatile because they respond to many unpredictable factors including weather, labor strikes, inflation, foreign exchange rates, etc. In a single account, because your position is leveraged, a small move against your position may result in a large loss. Losses may be larger than your initial deposit. No representation is made regarding the suitability of commodity investments.
- Currencies. Currency exchange rates can be extremely volatile, particularly during times of political or economic uncertainty. There is a risk of loss when an investor has exposure to foreign currency or holds foreign currency traded investments.
- Over-the-Counter ("OTC") Derivatives You should carefully review the Master Agreement, including any related schedules, credit support documents, addenda and exhibits. You may be requested to post margin or collateral at levels consistent with the internal policies of GS to support written OTC derivatives. Prior to entering into an OTC derivative transaction you should be aw are of the below general risks associated with OTC derivative transactions:
 - Liquidity Risk: There is no public market for OTC derivative transactions and, therefore, it may be difficult or impossible to liquidate an existing position on favorable terms.

Consumer and Investment Management Division



- Risk of Inability to Assign: OTC derivative transactions entered into with one or more affiliates of Goldman Sachs cannot be assigned or otherwise transferred without Goldman Sachs' prior written consent and, therefore, it may be impossible for you to transfer any OTC derivative transaction to a third party.
- Counterparty Credit Risk: Because Goldman Sachs may be obligated to make substantial payments to you as a condition of an OTC derivative tansaction, you must evaluate the credit risk of doing business with Goldman Sachs. Depending on the type of transaction, your counterparty may be Goldman Sachs & Co. LLC, aregistered U.S. broker-dealer, or other affiliate of The Goldman Sachs Group, Inc. As a broker dealer regulated by the Securities and Exchange Commission ("SEC"), Goldman Sachs & Co. LLC is subject to net capital, financial responsibility rules, and other regulatory requirements designed to protect customer assets. Other subsidiaries of The Goldman Sachs Group, Inc. may not be registered as a U.S. broker dealer and therefore are not be subject to similar SEC regulation.
- Pricing and Valuation: The price of each OTC derivative transaction is individually negotiated betw een Goldman Sachs and each counterparty and Goldman Sachs does not represent or w arrant that the prices for which it offers OTC derivative transactions are the best prices available. You may therefore havetrouble establishing w hether the price you have been offered for a particular OTC derivative transaction is fair. OTC derivatives may trade at a value that is different from the level inferred from interest rates, dividends and the underlyer. The difference may be due to factors including, but not limited to, expectations of future levels of interest rates and dividends, and the volaility of the underlyer prior to maturity. The market price of the OTC derivative transaction may be influenced by many unpredictable factors, including economic conditions, the creditw orthiness of Goldman Sachs, the value of any underlyers, and certain actions taken by Goldman Sachs.
- Early Termination Payments: The provisions of an OTC derivative transaction may allow for early termination and, in such cases, either you or Goldman Sachs may be required to make a potentially significant termination payment depending upon whether the OTC derivative transaction is in the money at the time of termination.
- Indexes: Goldman Sachs does not warrant, and takes no responsibility for, the structure, method of computation or publication of any currency exchange rates, interest rates, indexes of such rates, or credit, equity or other indexes, unless Goldman Sachs specifically advises you otherwise.
- Emerging Markets and Growth Markets. Emerging markets and grow th markets investments involve certain considerations, including political and economic conditions, the potential difficulty of repatriating funds or enforcing contractual or other legal rights, and the small size of the securities markets in such countries coupled with a low volume of trading, resulting in potential lack of liquidity and price volatility.
- Equity Investments. Equity investments are subject to market risk. The value of the securities may go up or down in respect to the prospects of individual companies, particular industry sectors and/or general economic conditions. The securities of small and mid-capitalization companies involve greater risks than those associated with larger, more established companies and may be subject to more abrupt or erratic price movements.
- Fixed Income. Fixed income securities investments are subject to the risks associated with debt securities generally, including credit/default, liquidity and interest rate risk. Any guarantee on an investment grade bond of a given country applies only if held to maturity.
- Master Limited Partnerships ("MLPs"). MLPs may be generally less liquid than other publicly traded securities and as such can be more volatile and involve higher risk. MLPs may also involve substantially different tax treatment than other equity-type investments, and such tax treatment could be disadvantageous to certain types of retirement accounts or charitable entities.
- Money Market Funds. Money market fund investments are not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Although money market funds seek to preserve the value of your investment at \$1.00 per share, it is possible to lose money.
- Non-US Securities. Non-US securities investments involve the risk of loss as a result of more or less non-US government regulation, less public information, less liquidity, and greater volatility in the countries of domicile of the issuers of the securities and/or the jurisdiction in which these securities are traded. In addition, investors in securities such as ADRs/GDRs, whose values are influenced by foreign currencies, effectively assume currency risk.
- Options. Options involve risk and are not suitable for all investors. The purchase of options can result in the loss of an entire investment and the risk of uncovered options is potentially unlimited. You must read and understand the current Options Disclosure Document before entering into any options transactions. The booklet entitled Characteristics and Risk of Standardized Options can be obtained from your PWM team or at http://www.theocc.com/about/publications/character-risks.jsp.. A secondary market may not be available for all options. Transaction costs may be significant in option strategies that require multiple purchases and sales of options, such as spreads. Supporting documentation for any comparisons, recommendations, statistics, technical data, or other information will be supplied upon request.
- Real Estate. Real estate investments involve additional risks not typically associated with other asset classes, such as sensitivities to temporary or permanent reductions in property values for the geographic region(s) represented. Real estate investments (both through public and private markets) are also subject to changes in broader macroeconomic conditions, such as interest rates.

Consumer and Investment Management Division



- Structured Investments. Structured investments are complex, involve risk and are not suitable for all investors. Investors in structured investments assume the credit risk of the issuer or guarantor. If the issuer or guarantor defaults, you may lose your entire investment, even if you hold the product to maturity. Structured investments often perform differently from the asset(s) they reference. Credit ratings may pertain to the credit rating of the issuer and are not indicative of the market risk associated with the structured investment or the reference asset. Each structured investment is different, and for each investment you should consider 1) the possibility that at expiration you may be forced to own the reference asset at a depressed price; 2) limits on the ability to share in upside appreciation; 3) the potential for increased losses if the reference asset declines; and 4) potential inability to sell given the lack of a public trading market.
- Tactical Tilts. Tactical tilts may involve a high degree of risk. No assurance can be made that profits will be achieved or that substantial losses will not be incurred. For various reasons, GS&Co. and its affiliates may implement a tactical tilt, invest in an affiliated fund that may invest in tactical tilts, or unw ind a position for its client advisory accounts or on its own behalf before your advisor does on behalf of your account, or may implement a tactical tilt that is different from the tactical tilt implemented by advisors on client accounts, which could have an adverse effect on your account and may result in poorer performance by your account than by Goldman Sachs or other client accounts.
- U.S. Registered Mutual Funds / Exchange Traded Funds ("ETFs") or Exchange Traded Notes ("ETNs"). You should consider a fund's investment objectives, risks, charges and expenses, and read the summary prospectus and/or the Prospectus (w hich may be obtained from your PWM Team) carefully before investing, as they contain this and other relevant information. You may obtain documents for ETFs or ETNs for free by 1) visiting EDGAR on the SEC we besite at http://www.sec.gov/; 2) contacting your PWM team; or 3) calling toll-free at 1-866-471-2526. Unlike traditional mutual funds, ETFs can trade at a discount or premium to the net asset value and are not directly redeemable by the fund. Leveraged or inverse ETFs, ETNs, or commodities futures-linked ETFs may experience greater price movements than traditional ETFs and may not be appropriate for all investors. Most leveraged and inverse ETFs or ETNs seek to deliver multiples of the performance (or the inverse of the performance) of the underlying index or benchmark on a daily basis. Their performance over a longer period of time can vary significantly from the stated daily performance objectives or the underlying benchmark or index due to the effects of compounding. Performance differences may be magnified in a volatile market. ETFs are redeemable only in Creation Unit size aggregations and may not be individually redeemed; are redeemable only through Authorized Participants; and are redeemable on an "in-kind" basis. The public trading price of a redeemable lot of the ETFs may be different from its net asset value. These ETFs can trade at a discount or premium to the net asset value. There is alw ays a fundamental risk of declining stock prices, which can cause losses to your investment. Commodities futures-linked ETFs may performdifferently than the spot price for the commodity itself including due to the entering into and liquidating of futures or swap contracts on a continuous basis to maintain exposure (i.e., "rolling") and disparit

Security-Specific References. Any reference to a specific company or security is not intended to form the basis for an investment decision and is included solely to provide examples or provide additional context. This information should not be construed as research or investment advice and should not be relied upon in whole or in part in making an investment decision. GS, or persons involved in the preparation or issuance of these materials, may from time to time have long or short positions in, buy or sell (on a principal basis or otherwise), and act as market makers in the securities or options, or serve as a director of any companies mentioned herein. In addition, GS may have served as manager or co-manager of a public offering of securities by any such company within the past 12 months. Further information on any securities mentioned in this material may be obtained upon request.

Assets Held at a Third Party Custodian. Any information (including valuation) regarding holdings and activity in accounts held by third party custodians is for your convenience and has been supplied by third parties or by you. GS assumes no responsibility for the accuracy of such information. Information may vary from that reflected by your custodian and is as of the date of the materials provided to us. As an accommodation to you, we may also reflect certain investments unrelated to services provided by GS, for which GS does not performany due diligence, verify the accuracy of information, or provide advice. Unless otherwise agreed in writing, we have not assessed whether those investments fit within your investment objective and the asset classification shown may not be accurate.

Off-Platform Investments. To the extent you ask us for guidance in connection with investment opportunities not offered by GS, such as investments in private funds, private debt or equity, real estate or other opportunities you source away from us, any such guidance, views, or other information we may provide is on an accommodation basis only and we will not be acting as your advisor. We assume no obligation to determine whether the opportunity is suitable for you in connection with such investment decisions and will not assume any liability for such investment decisions. Please review our FormADV for information on conflicts of interest we may have in connection with any such requests.

ISG/GIR Forecasts. Economic and market forecasts presented ("forecasts") reflect either ISG's or GIR's views and are subject to change without notice. Forecasts do not take into account specific investment objectives, restrictions, tax and financial situation or other needs of any specific client. Forecasts are subject to high levels of uncertainty that may affect actual performance and should be view ed as merely representative of a broad range of possible outcomes. Forecasts and any return expectations are as of the date of this material, and should not be taken as an indication or projection of returns of any given investment or strategy. Forecasts are estimated, based on capital market assumptions, and are subject to significant revision and may change materially as economic and market conditions change. Any case studies and examples are for illustrative purposes only. If applicable, a copy of the GIR Report used for GIR forecasts is available upon request. Forecasts do not reflect advisory fees, transaction costs, and other expenses a client would have paid, which would reduce return.

Client Specific Markets. Investments held in your name with a subcustodian in the local market where traded in order to comply with local law will be indicated on your statements.

Consumer and Investment Management Division



Performance / Estim ated Income / Estim ated Cash Flow. Past performance is not a guide of future results and may include investments no longer ow ned in current or closed accounts. Current performance may be low er or higher than the performance data quoted. To request the most current or historical performance data, or asset classification schema information, please contact your PWM team at the number provided on your monthly statement or toll-free in the U.S. at 1-800-323-5678. Performance reports, where shown, generally present the relevant time weighted performance, which is a combination of daily returns compounded over a specified time period with the removal of the deposit and withdrawal impacts, and may show internal rate of return calculations where requested. Aggregate performance may not equal the sum of returns at an investment level. Performance for advisory accounts is currently calculated net of any management fees and might include investments for which actual market prices are not currently available, and does not include private equity positions. Performance for alternative investments is calculated using the value of the last available partnership capital statement or NAV. If included, estimated income figures and estimated private equity future cash flow s are estimates of future activity, and actual results may vary substantially. GS&Co. has adjusted performance calculations for certain asset classes or strategies and may do so in the future. Performance of net cash (i.e., cash less margin debit) is generally included in the total performance calculation but not displayed separately. Option performance is included in the performance of the asset class of the underlier. Margin loans are generally excluded from advisory performance but included in brokerage performance calculations. Mutual fund and ETF investment returns and the principal value of your investment will fluctuate. As a result, your shares when redeemed may be worth more or less than their original cost. The performance data fo

Indices / Benchmarks. Any references to indices, benchmarks, or other measure of relative market performance over a specified period of time are provided for your information only and is not indicative of future results. In addition to the benchmark assigned to a specific investment strategy, other benchmarks ("Comparative Benchmarks") may be displayed, including ones displayed at your request. Managers may not review the performance of your account against the performance of Comparative Benchmarks. There is no guarantee that performance will equal or exceed any benchmark displayed. Where a benchmark for a strategy has changed, the historical benchmark(s) are available upon request. Inception to date ("ITD") returns and benchmark / reference portfolio returns may reflect different periods. ITD returns for accounts or asset classes only reflect performance during periods in which your account(s) held assets and / or were invested in the asset class. The benchmark or reference portfolio returns shown reflect the benchmark / portfolio performance from the date of inception of your account or your initial investment in the asset class. If displayed, estimated income figures are estimates of future activity obtained from third party sources.

Indices are unmanaged. The figures for the index reflect the reinvestment of all income or dividends, as applicable, but do not reflect the deduction of any fees or expenses which would reduce returns. Investors cannot invest directly in indices. Where appropriate, relevant index trademarks or index information has been licensed or sub-licensed for use. Inclusion of index information is not

intended to imply that the relevant index or its affiliated entities sponsor, endorse, sell, or promote the referenced securities, or that they make any representation or warranty regarding either the advisability of investing in securities (generally or specifically) or regarding the ability of the index to track market performance. Contact your PWM team for more information.

The following table provides an example of the effect of management and incentive fees on returns. The magnitude of the difference between gross-offee and net-of-fee returns will depend on a variety of factors, and the example has been simplified.

Period	Gross Return	Net Return	Differential
1 year	6.17%	4.61%	1.56%
2 years	12.72%	9.43%	3.29%
10 years	81.94%	56.89%	25.05%

Pricing and Valuations. Prices do not necessarily reflect realizable values and are based on information considered to be reliable but are not guaranteed for accuracy, currency, or as realizable values. Certain positions may be provided by third parties or may appear without a price if GS is unable to obtain a price and/or the security is not actively traded for a certain amount of time. Pricing sources and methods are available upon request and are subject to change. The stated price/value is as of the date indicated. It is not an offer to buy or sell and is not represent at that any transaction can be effected at this price. In the event of any discrepancy between the information contained herein and the information contained in your monthly account statements at Goldman Sachs or another institution, the latter shall govern. Please immediately notify your Private Wealth Advisor of any discrepancies.

Fees and Charges. We have two pricing models for advisory relationships: a comprehensive fee model and a product based model. You should consider factors, including, but not limited to, your financial needs and circumstances, investment objectives, services provided under the model, your preferences, and the size of your account. Certain account fees and expenses may be more or less expensive depending on the model chosen. Actual fees may differ from estimated fees due to differences in strategies and amounts invested in particular strategies or overall. Charges applied to your accounts and transactions may include execution charges (including commissions, commission equivalents, mark-ups, mark-downs and dealer spreads), investment advisory fees, and custody fees. When we act as broker, we are generally compensated by an execution charge on a trade by trade basis. When we act as advisor, we generally earn a fee based on assets under management and may also be earning execution charges. More information about fees and charges is included in our account agreements, fee schedules and trade confirmations. If estimated fees are shown herein, we have included a description of our fee calculation methodology.

Consumer and Investment Management Division



Tax Information. GS does not provide legal, tax or accounting advice, unless explicitly agreed in writing between you and GS, and does not offer the sale of insurance products. You should obtain your own independent tax advice based on your particular circumstances. The information included in this presentation, including, if shown, in the Tax Summary section, does not constitute tax advice, has not been audited, should not be used for tax reporting, and is not a substitute for the applicable tax documents, including your Form 1099, Schedule K-1 for private investments, which we will provide to you annually, or your monthly GS account statement(s). The cost basis included in this presentation may differ fromyour cost basis for tax purposes. Information regarding your alternative investments and transactions for retirement accounts are not included in the Tax Summary section. Any statement contained in this presentation concerning U.S. tax matters is not intended or written to be used and cannot be used for the purpose of avoiding penalties imposed on the relevant taxpayer. Realized and unrealized gains and loss values do not include securities for which cost basis is unavailable. Losses reflected may be disallowed or deferred by the application of capital loss limitations, wash sale rules or other special tax rules.

Asset Classification. We display holdings and provide market value and performance by asset class. A description of our asset classification schema is available upon request. When you have separately managed accounts, the value of all assets invested in the strategy is displayed in the asset class of the strategy. In those instances, the market value and performance displayed for each asset class may also include cash that is not separately reflected under Cash, Deposits and Money Market Funds.

Other Services. Any provided financial planning services, including cash flow analyses based on information you provide, are a hypothetical illustration of mathematical principles and are not a prediction or projection of performance of an investment or investment strategy. Such services may not address every aspect of a client's financial life; topics that were not discussed with you may still be relevant to your financial situation. In providing financial services, GS will rely on information provided by, or on behalf of, clients and is not responsible for the accuracy or completeness of any such information, nor for any consequences related to the use of any inaccurate or incomplete information. Where materials and/or analyses are provided to you, they are based on the assumptions stated therein, which are likely to vary substantially from the examples shown if they do not prove to be true. These examples are for illustrative purposes only and do not guarantee that any client will or is likely to achieve the results shown. Assumed growth rates are subject to high levels of uncertainty and do not represent actual trading and may not reflect material economic and market factors that may have an impact on actual performance. GS has no obligation to provide updates to these rates.

Not a Municipal Advisor. Except in circumstances where GS expressly agrees otherwise, GS is not acting as a municipal advisor and the opinions or views contained in this presentation are not intended to be, and do not constitute, advice, including within the meaning of Section 15B of the Securities Exchange Act of 1934.

Additional Information for Ayco Clients. References in this presentation to "PWM team" shall include your Ayco team. Ayco may provide tax advice, accounting advice, bill pay, and bookkeeping services to certain clients. Ayco does not provide brokerage services. As part of its financial counseling services, Ayco may provide you with certain reports where similar information contained herein is presented differently or in more or less detail. You should view each report independently and raise any questions with your Ayco team.

No Distribution; No Offer or Solicitation. This material may not, without GS' prior written consent, be (i) copied, photocopied or duplicated in any form, by any means, or (ii) distributed to any person that is not an employee, officer, director, or authorized agent of the recipient. This material is not an offer or solicitation with respect to the purchase or sale of any security in any jurisdiction in which such offer or solicitation is not authorized or to any person to whomit would be unlawful to make such offer or solicitation.

The view's and opinions expressed herein may vary significantly from those expressed by individual portfolio management teams within CIMD, or other groups at Goldman Sachs. Investors are urged to consult with their financial advisers before buying or selling any securities. The information contained herein should not be relied upon in making an investment decision or be construed as investment advice. CIMD has no obligation to provide any updates or changes.

© 2019 Goldman Sachs. All rights reserved.