Global Margin Rules for Uncleared Derivatives

December 2016

Goldman Sachs Prime Brokerage

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Global Margin Rules for Uncleared Derivatives

01-Mar-2017, In-scope Clients Trading Uncleared Derivatives are Required to Exchange Daily Bilateral Variation Margin With Zero Threshold

Global Margin Rules

What are the Margin Rules?

- Margin rules for uncleared derivatives ("Margin Rules") will be enacted by regulators globally to implement initial margin ("IM") and variation margin ("VM") requirements for all derivatives not cleared through a central counterparty.
- The US regulators (bank agencies and CFTC) and Japan regulators have adopted final rules. EU final draft rules are anticipated to come into force in line with the global VM 01-Mar-2017 compliance date. SEC and other G20 regulators draft rules are expected but timing is uncertain.

How are you impacted?

- **Variation Margin**: In-scope entities will be subject to variation margin requirements which include mandatory two-way posting of variation margin, zero thresholds and a minimum transfer amount on all new trades executed from the relevant implementation date.
- **Initial Margin**: If both in-scope entities exceed certain thresholds for that particular year, they must exchange two-way initial margin from the relevant implementation date.
- Initial margin will be subject to segregation requirements at a third party or other effective protection permitted under individual regulator rules.
- Many in-scope entities may not be required to exchange initial margin as they are expected to fall below the threshold requirement.

What happens to my existing portfolio?

- Under the US, EU and Japan rulesets only trades executed as of 01-Mar-2017 will be subject to VM.

When will these requirements come into effect?

- **Variation Margin**: All financial users go live for VM on 01-Mar-2017. The largest financial users (>3trn of gross notional) went live for both IM and VM 01-Sep-2016.
- **Initial Margin**: Financial users are phased in from 01-Sep-2017 – 01-Sep-2020 as described under the Phase-In table on the next slide.

What are the cross-border implications?

- Final draft rules in the EU are broadly consistent with finalized US and Japan rules, however there are differences, see next slide. As of Oct-2016 it is currently unclear how the rules will interact across jurisdictional boundaries and counterparty types.
- In-scope entities may find themselves subject to multiple rules or under different rules to their margin-receiving / posting counterpart.

Will collateral be subject to prescribed haircuts?

- Prescribed minimum haircuts apply for both IM (Where applicable) and VM. (Except for Japan) Internal haircut models may be used as well, if approved.
- Some rules impose an additional +8% haircut on eligible collateral where the underlying derivative and the collateral are in different currencies.

What collateral will be eligible?

- The Margin Rules are broadly permissive of any asset approved by national regulators for both initial margin (Where applicable) and variation margin, see next slide.

Where can I get more detail?

- For operational questions contact GS_Margin_Support@ln.email.gs.com
- For further understanding of how this will impact you contact gs-markettransition@gs.com or your Sales representative.

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Global Margin Rules for Uncleared Derivatives

01-Mar-2017, In-scope Clients Trading Uncleared Derivatives are Required to Exchange Daily Bilateral Variation Margin With Zero Threshold (Cont’d)

Next Steps for 01-Mar-2017 Compliance

What are the next steps for implementation?

(1) Complete Self Disclosure Letter (“SDL”):

Mid October clients were sent a secure link with request to complete a Self-Disclosure Letter. The SDL provides jurisdictional/entity information required for generating your CSA

(2) Execute Regulatory Compliant VM Credit Support Annex (“CSA”):

New regulatory compliant VM CSAs are required for trades done after 01-Mar-2017. Late-November all clients will receive terms and instructions to execute either the ISDA 2016 Variation Margin Protocol with New CSA or a bilateral new CSA. Additionally, some clients may be eligible to bilaterally amend their existing CSA. Note: Amending a CSA brings legacy trades into scope which may change the NPV of a portfolio

(3) Establish Collateral Accounts:

Lastly, to enable collateral movements, clients need to provide collateral instructions by email or through the OMCEO Alert tool

GS Legal Entities and Applicable Regulators

Following table is to be used when completing the Self Disclosure Letter

<table>
<thead>
<tr>
<th>Goldman Sachs Legal Entity</th>
<th>Regulators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goldman Sachs Bank USA (GSBank)</td>
<td>Prudential</td>
</tr>
<tr>
<td>Goldman Sachs Financial Markets, L.P. (GSFM)</td>
<td>CFTC</td>
</tr>
<tr>
<td>Goldman Sachs International (GSI)</td>
<td>CFTC / EU</td>
</tr>
<tr>
<td>Goldman Sachs Japan Co., Ltd. (GS Japan)</td>
<td>CFTC / Japan</td>
</tr>
<tr>
<td>Goldman Sachs Financial Markets Pty. Ltd. (GS Australia)</td>
<td>CFTC</td>
</tr>
<tr>
<td>Goldman Sachs Mexico, Casa de Bolsa, S.A. de C.V. (MCBO)</td>
<td>CFTC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Goldman Sachs Legal Entity</th>
<th>Regulators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goldman Sachs Mitsui Marine Derivative Products LP (MMDP)</td>
<td>CFTC</td>
</tr>
<tr>
<td>Goldman Sachs Paris Inc., et Cie (GS Paris)</td>
<td>Prudential / EU</td>
</tr>
<tr>
<td>Goldman, Sachs &amp; Co. (GSCo)</td>
<td>CFTC</td>
</tr>
<tr>
<td>J. Aron &amp; Company (Singapore) Pte. (JASG)</td>
<td>CFTC</td>
</tr>
<tr>
<td>J. Aron &amp; Company (JANY)</td>
<td>CFTC</td>
</tr>
</tbody>
</table>

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- For operational questions contact GS_MR_Support@ln.email.gs.com
- For further understanding of how this will impact you contact gs-markettransition@gs.com or your Sales representative

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PB Integrated OTC Derivatives
PB Integrated OTC Derivatives

What is changing for Prime Brokerage on 01-Mar-2017?

- Today, under uncleared OTC derivatives transactions margined in Prime Services, variation margin (VM) is posted by clients one-way to GS
- Starting on 01-Mar-2017, GS must start posting VM to its clients and the VM posted by the clients must meet the new regulatory requirements
- This requires changes to our operational flows and new documentation
- No changes are required for Initial margin (IM) for now. As today, it will be calculated using our Prime Services margin methodology

Affected Derivatives Transactions

- Uncleared OTC derivatives transactions margined using the Prime Brokerage margin methodology (including cross-margining arrangements)
- FX transactions booked to a prime brokerage account
A variation margin account will be created for PB Integrated OTC Derivatives.

If the client owes net VM to GS, GS will arrange a transfer of cash from the client’s prime brokerage account to the variation margin account. This transfer will either reduce the client’s prime brokerage credit balance or create/increase its debit balance, as applicable.

Similarly, if GS owes net VM to the client, GS will arrange for a transfer of cash from the variation margin account to the client’s prime brokerage account. This transfer will either increase the client’s prime brokerage credit balance or decrease its debit balance, as applicable.

The currency of the cash transfer will be in the base currency of the Prime Brokerage account.

If the prime brokerage account does not have enough margin excess to allow the transfer, GS will issue a margin call to the client. This margin call would also include any margin deficiency on the prime brokerage positions.

If client does not have a prime brokerage custody relationship with GS, daily transfers of cash to and from the variation margin account may need to be instructed.

Net VM in Favor of GS

PB Account $ VM Account

Net VM in Favor of Client

PB Account $ VM Account

This material is for illustrative and discussion purposes only.
PB Integrated OTC Derivatives
Documentation

- **New Document for VM: Short-Form PB VM CSA**
  
The **PB VM CSA** will govern the exchange of VM for all PB Integrated OTC Derivatives
  
  - The PB VM CSA only applies to the PB Integrated OTC Derivatives. It is in addition to the VM documentation that is put in place to cover the client’s franchise derivatives transactions
  
  - The PB VM CSA will replicate the VM CSA put in place for franchise derivatives transactions, with some key differences to reflect PB operational flows (for example, VM will be cash only and the minimum transfer amount will be zero)
  
  - The PB VM CSA will cover new and legacy PB Integrated OTC Derivatives

- **Replacement of PB FX Trading Supplement**
  
  - The PB FX Trading Supplement to the prime brokerage agreement does not meet the new regulatory requirements
  
  - FX transactions booked to a client’s prime brokerage account must be governed by an ISDA Master Agreement. If one is not in place yet with the relevant GS entity, it is created using the ISDA protocol process

- **No Changes for IM**
  
  The IM for your PB Integrated OTC Derivatives will be collateralised pursuant to the terms of your existing prime brokerage agreements

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PB Integrated OTC Derivatives

Differences in Documentation

Pre-March 1 Documentation

<table>
<thead>
<tr>
<th>ISDA</th>
<th>PB Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSA</td>
<td>FX Trading</td>
</tr>
<tr>
<td></td>
<td>Supplement</td>
</tr>
<tr>
<td>Governed margin for ISDA transactions other than PB Integrated OTC Derivatives</td>
<td>Governed FX booked in PB Account</td>
</tr>
</tbody>
</table>

Integration Document

May be an MNET or part of ISDA Schedule/CSA. Provides that PB Agreement governs the margin terms associated with PB Integrated OTC Derivatives

Post-March 1 Documentation

<table>
<thead>
<tr>
<th>ISDA</th>
<th>PB Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reg Compliant CSA</td>
</tr>
<tr>
<td></td>
<td>FX Trading</td>
</tr>
<tr>
<td></td>
<td>Supplement</td>
</tr>
<tr>
<td>Governed margin for ISDA transactions other than PB Integrated OTC Derivatives</td>
<td>Governed margin for ISDA transactions other than PB Integrated OTC Derivatives</td>
</tr>
</tbody>
</table>

Integration Document

May be an MNET or part of ISDA Schedule/CSA. Provides that PB Agreement governs the margin terms other than the VM terms associated with PB Integrated OTC Derivatives

Legacy CSA

Only remains if client does not amend existing CSA

PB VM CSA

Created using short sideletter. Governs VM for PB Integrated OTC Derivatives

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Margin Rules: FX Contract Changes

**Background**

- Margin Rules, as part of DFA (Dodd Frank Act) and EMIR (European Margin Infrastructure Regulation), requires firms to value the VM of all OTC derivative contracts using correct MTM of the contract
- OTC derivatives include FX forwards
- **Today**: FX forwards are aggregated with cash balances in PB and valued using spot rates, rather than versus forward rates
- **Future State**: FX forwards will be correctly valued versus forward rates for an accurate PnL contribution towards equity
- **Please note**: Enhanced forward valuation is now consistent with industry standard

**Example**

<table>
<thead>
<tr>
<th></th>
<th>INR</th>
<th>USD</th>
<th>Ex Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial</td>
<td>$1,097,207,132.00</td>
<td>$(16,081,007.36)</td>
<td>Forward rate on T: 0.0146563</td>
</tr>
<tr>
<td>Spot</td>
<td>1,097,207,132.00</td>
<td>(16,339,641.53)</td>
<td>Spot rate on T+61: 0.0148920</td>
</tr>
<tr>
<td>Forward</td>
<td>1,097,207,132.00</td>
<td>(16,144,407.81)</td>
<td>Forward rate on T+61: 0.0147141</td>
</tr>
<tr>
<td>Current NPV</td>
<td>1,097,207,132.00</td>
<td>(63,400.45)</td>
<td></td>
</tr>
</tbody>
</table>

Client Buys INR vs. USD Forward – 16 Month SD

**Impact**

- Client’s equity will increase or decrease depending on the difference between the spot and forward curve for respective currency legs
- Stress calculation will use the FX forward adjusted notionals to compute the NetFX requirement
- Reporting of the FX forwards will change, as the forwards will no longer be reflected as cash balances but will be reflected as Derivatives MTM from a margin standpoint
- Open FX trades will NOT be reflected as cash balances until the trades settle. While the trade is open, the trade will be reflected as an open OTC derivative with an NPV
- Go live of FX methodology change expected January 29, 2017 ahead of the go-live of Margin Rules for OTC derivatives on 01-Mar-2017

**Ex Rate difference spot vs. Forward taken 61 days after trade: 1.2% difference / PNL Impact $195K**
Margin, Collateral, and Valuations Operations
Margin Rules: CFD Contract Changes

Background

- Margin Rules, as part of DFA (Dodd Frank Act) and EMIR (European Margin Infrastructure Regulation), requires firms to value the VM of all OTC derivative contracts using correct MTM of the contract
- **Today:** Cash flows from CFD contracts on terminations and resets are excluded from the NPV of the CFD and instead are captured as a cash balance in the CFD account
- **Future State:** These pending settlements should be captured as exposure under the MTM of the contract until the cash flows settle
- **Please note:** Change in valuation is consistent with Franchise methodology to capture all pending settlements in the NPV of the CFD

Example

<table>
<thead>
<tr>
<th>COB Date</th>
<th>Actual Date</th>
<th>Scenario</th>
<th>Trade NPV</th>
<th>Cash in Margin</th>
<th>Comment</th>
<th>New for Non Custody Accounts</th>
<th>Trade NPV</th>
<th>Cash in Margin</th>
<th>Comment</th>
<th>New for Custody Accounts</th>
<th>Trade NPV</th>
<th>Cash in Margin</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-Oct</td>
<td>19-Oct</td>
<td>CFD Resets</td>
<td>0</td>
<td>10</td>
<td>Upon reset, NPV drop to 0 and pending settlement reflected as TD balances</td>
<td></td>
<td>10</td>
<td>0</td>
<td>-</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>19-Oct</td>
<td>20-Oct</td>
<td>SD - 1</td>
<td>0</td>
<td>10</td>
<td>-</td>
<td></td>
<td>10</td>
<td>0</td>
<td>-</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>20-Oct</td>
<td>21-Oct</td>
<td>SD</td>
<td>0</td>
<td>10</td>
<td>-</td>
<td></td>
<td>10</td>
<td>0</td>
<td>-</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>21-Oct</td>
<td>22-Oct</td>
<td>SD + 1</td>
<td>0</td>
<td>10</td>
<td>-</td>
<td>0</td>
<td>10</td>
<td>0</td>
<td>-</td>
<td>10</td>
<td>0</td>
<td>10</td>
<td>-</td>
</tr>
</tbody>
</table>

Impact

- Reporting of the CFD cash flows will change, as the cash from resets and terminations will no longer be reflected as cash balances but will be reflected as Derivatives MTM from a margin standpoint until the cash settles
- Settled cash balance from CFD resets or terminations will only be captured in PB margin if they are booked to PB Custody accounts
- Go live of CFD methodology change expected January 29, 2017 ahead of the go-live of Margin Rules for OTC derivatives on March 1, 2017

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Appendix: Global Margin Rules for Uncleared Derivatives
# Global Margin Rules for Uncleared Derivatives

## Rule Summary by US / EU / Japan Jurisdictions

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Entity Scope</strong></td>
<td><strong>Product Scope</strong></td>
<td></td>
</tr>
<tr>
<td>Variation Margin (&quot;VM&quot;): Covered Swap Entities and Financial End Users (each as defined in the final rules). Initial Margin (&quot;IM&quot;): Same as VM except financial counterparties with less than $8bn gross notional amount of derivatives (see IM Phase-in Timelines below) on a consolidated group basis are not in scope. Exempt: Other counterparties (i.e., sovereigns, commercial end users).</td>
<td>VM: Financial counterparties (FCs) and non financial counterparties above the clearing threshold (NFC+s) (each as defined in EMIR). IM: Same as VM, except in-scope entities with less than EUR 8bn gross notional amount of derivatives (see IM Phase-in Timelines below) on a consolidated group basis are not in scope. Exempt: NFCs, EU, US and Japanese sovereigns and central banks, multilateral development banks and the BIS, covered bond issuers under certain conditions. Non-EEA entities that would be classified as FC or NFC+ if they were established in the EU and are counterparties to an EU FC or NFC+ are in scope for margin rules.</td>
<td>VM: (1) Both parties are Type 1 Financial Instruments and Business Operators or Registered Financial Institutions that are banks, insurance companies, or certain Japan governmental financial institutions with JPY300bn OTC derivative notional, or, (2) one of the parties falls into one of the entity types listed under (1) above and the other party is an offshore entity conducting derivatives business with JPY300bn OTC derivatives notional. Exempt: (i) Transactions with trust accounts having less than JPY300bn OTC derivative notional, and (ii) transactions where equivalence has been designated by the J-FSA. IM: Within the VM entity scope, those with OTC derivative trades above the IM Gross Notional Threshold on a consolidated group basis.</td>
</tr>
<tr>
<td><strong>VM &amp; IM Gross Notional Thresholds (Group Basis) and Phase-In</strong></td>
<td><strong>Types</strong></td>
<td><strong>Types</strong></td>
</tr>
<tr>
<td>01-Sep-2016: VM applies if &gt; USD 3.00tn</td>
<td>01-Sep-2016: VM applies if &gt; EUR 3.00tn</td>
<td>01-Sep-2016: VM applies if &gt; JPY 420tn</td>
</tr>
<tr>
<td>01-Mar-2017: VM applies to all other entities</td>
<td>Date TBD: VM applies if &gt; EUR 3.00tn</td>
<td>01-Mar-2017: VM applies to all other entities</td>
</tr>
<tr>
<td>01-Sep-2016: IM applies if &gt; USD 3.00tn for Mar–May-2016</td>
<td>Date TBD: VM applies to all other entities</td>
<td>01-Sep-2016: IM applies if &gt; JPY420tn for Mar–May 2016</td>
</tr>
<tr>
<td>01-Sep-2020: IM applies if &gt; USD 8.00bn for Mar–May-2020</td>
<td>01-Sep-2019: IM applies if &gt; EUR 0.75tn for Mar–May-2019</td>
<td>01-Sep-2019: IM applies if &gt; JPY105tn for Mar–May 2019</td>
</tr>
<tr>
<td>Final and permanent IM annual threshold: USD 8.00bn</td>
<td>Final and permanent IM annual threshold: EUR 8.00bn</td>
<td>01-Sep-2020: IM applies if &gt; JPY1.1tn for Mar–May 2020</td>
</tr>
</tbody>
</table>

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**Global Margin Rules for Uncleared Derivatives**

Rule Summary by US / EU / Japan Jurisdictions (Cont’d)

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<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inter-affiliate Trading</strong></td>
<td>Inter-affiliate trades are subject to VM requirements. Prudentially-regulated entities must collect IM from affiliates; CFTC Swap Dealers largely exempt from posting or collecting of IM between affiliates.</td>
<td>Inter-affiliate trades are subject to IM and VM requirements but may be subject to regulator exemptions. Inter-affiliate trades have IM threshold of EUR 10 million. No requirement to exchange IM on Inter-affiliate trades (Date TBD)</td>
<td>Interaffiliate trades are exempt.</td>
</tr>
<tr>
<td><strong>Eligible Collateral</strong></td>
<td>VM: USD cash, currency of underlying swap or major currency for covered swap entities; same as IM for financial end users. IM: Eligible collateral includes cash, gold, certain govt bonds, certain corporate bonds and certain equities.</td>
<td>VM &amp; IM: Cash, gold, certain govt debt securities, certain corporate securities, certain equities and convertible bonds. Concentration limits may apply to IM collateral including custodian concentration limit for cash.</td>
<td>VM &amp; IM: Cash, certain govt debt securities, certain corporate securities, equities and convertible bonds included in major stock indices, investment trusts investing only in the foregoing categories of assets and publishing daily NAV.</td>
</tr>
<tr>
<td><strong>Haircuts</strong></td>
<td>VM &amp; IM: No haircuts for USD cash, currency of underlying swap or major currency. Standard or internal haircuts for other eligible collateral as well as 8% where the settlement currency and the collateral are in different currencies.</td>
<td>VM &amp; IM: Standard or internal model haircuts. No haircut for cash VM. Additional 8% haircut where currency of non-cash collateral for VM, or currency of cash and non-cash collateral for IM, differs from agreed currencies contemplated in collateral documentation.</td>
<td>VM &amp; IM: Standard haircuts. No haircut for cash VM. Additional 8% haircut where currency of non-cash collateral for VM, or currency of cash and non-cash collateral for IM, differs from agreed currencies for the derivative transaction.</td>
</tr>
<tr>
<td><strong>Thresholds</strong></td>
<td>VM: Zero threshold. IM: Max of $50mm between all entities in a consolidated group facing all entities in the counterparty consolidated group.</td>
<td>VM: Zero threshold. IM: Max of EUR50mm between all entities in a consolidated group facing all entities in the counterparty consolidated group.</td>
<td>VM: Zero threshold. IM: Max of JPY7bn between all entities in a consolidated group facing all entities in the counterparty consolidated group.</td>
</tr>
<tr>
<td><strong>MTA Limit</strong></td>
<td>US$500k</td>
<td>EUR500k</td>
<td>JPY70mm</td>
</tr>
<tr>
<td><strong>IM Models</strong></td>
<td>99% confidence interval over 10-day horizon calibrated to a time period of between 1 and 5 years. No cross-margining with other products.</td>
<td>99% confidence interval over 10-day horizon and calibrated to a period of at least 3 years. No cross-margining with other products.</td>
<td>99% confidence interval over 10-day horizon calibrated to a time period of between 1 and 5 years. No cross-margining with other products.</td>
</tr>
</tbody>
</table>
Order Handling Practices for Listed and Over-the-Counter Derivatives: While the firm is holding your derivative (e.g. options, convertible bonds, warrants or preferred shares) order, the firm or its clients may engage in trading activity in the same or related products, including transactions in the underlying securities. While such trading activity is unrelated to your order, it may coincidentally impact the price of the derivative that you are buying or selling.
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