



Cleared Derivatives – March-April 2020 and beyond

GMAC Meeting, December 17, 2020

DISCLAIMER

The analyses and views expressed herein are those of the authors and do not necessarily reflect the views of the Commission or CFTC Staff.

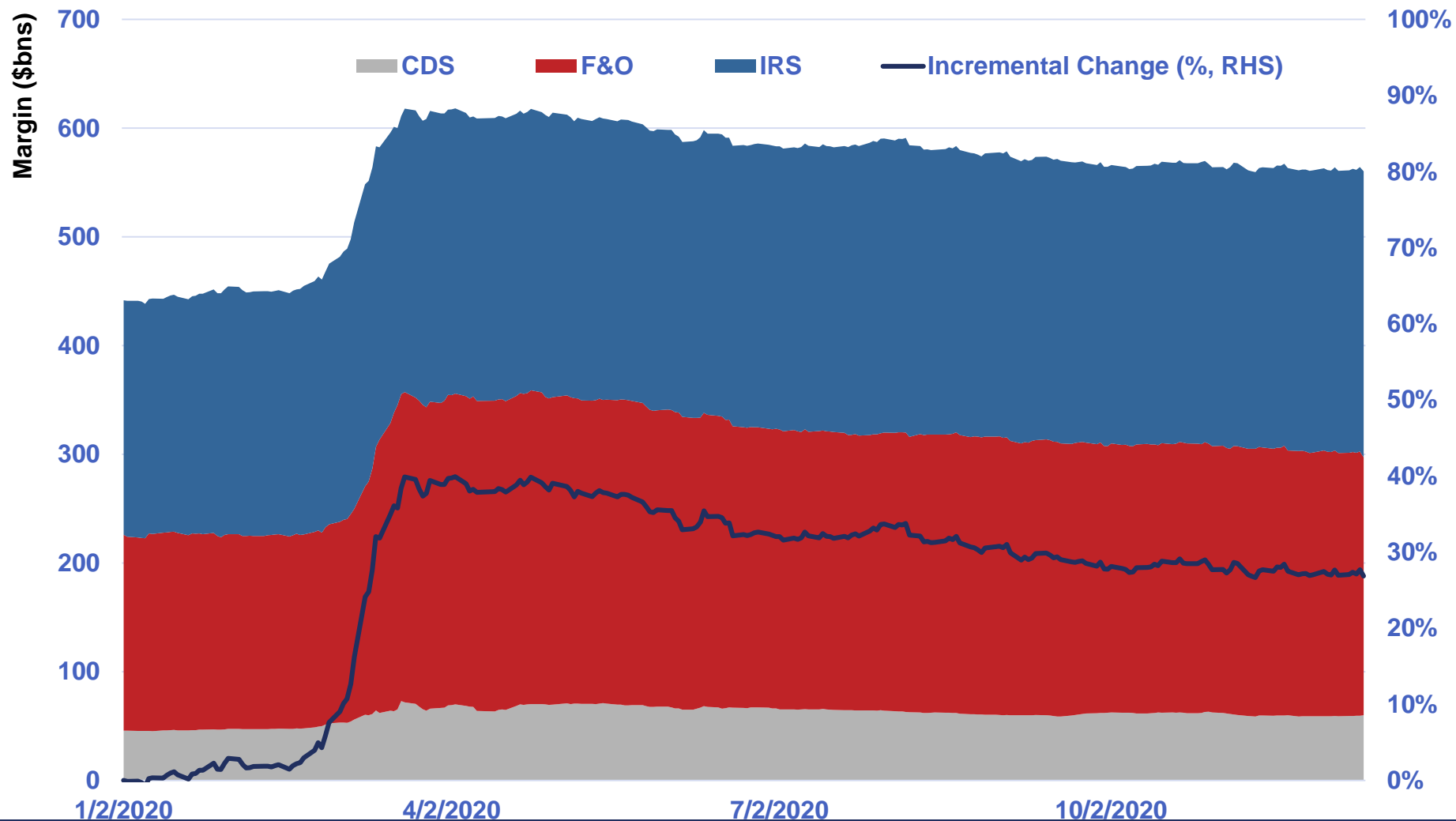
Key themes in 2020

- The pandemic was in the category of ‘extreme but implausible’ as defined pre-Feb, 2020
- Real-world stress tests infinitely more instructive than any supervisory stress tests
- Questions about margin calls and systemic risk
- ‘Lessons learned’ will continue through 2021

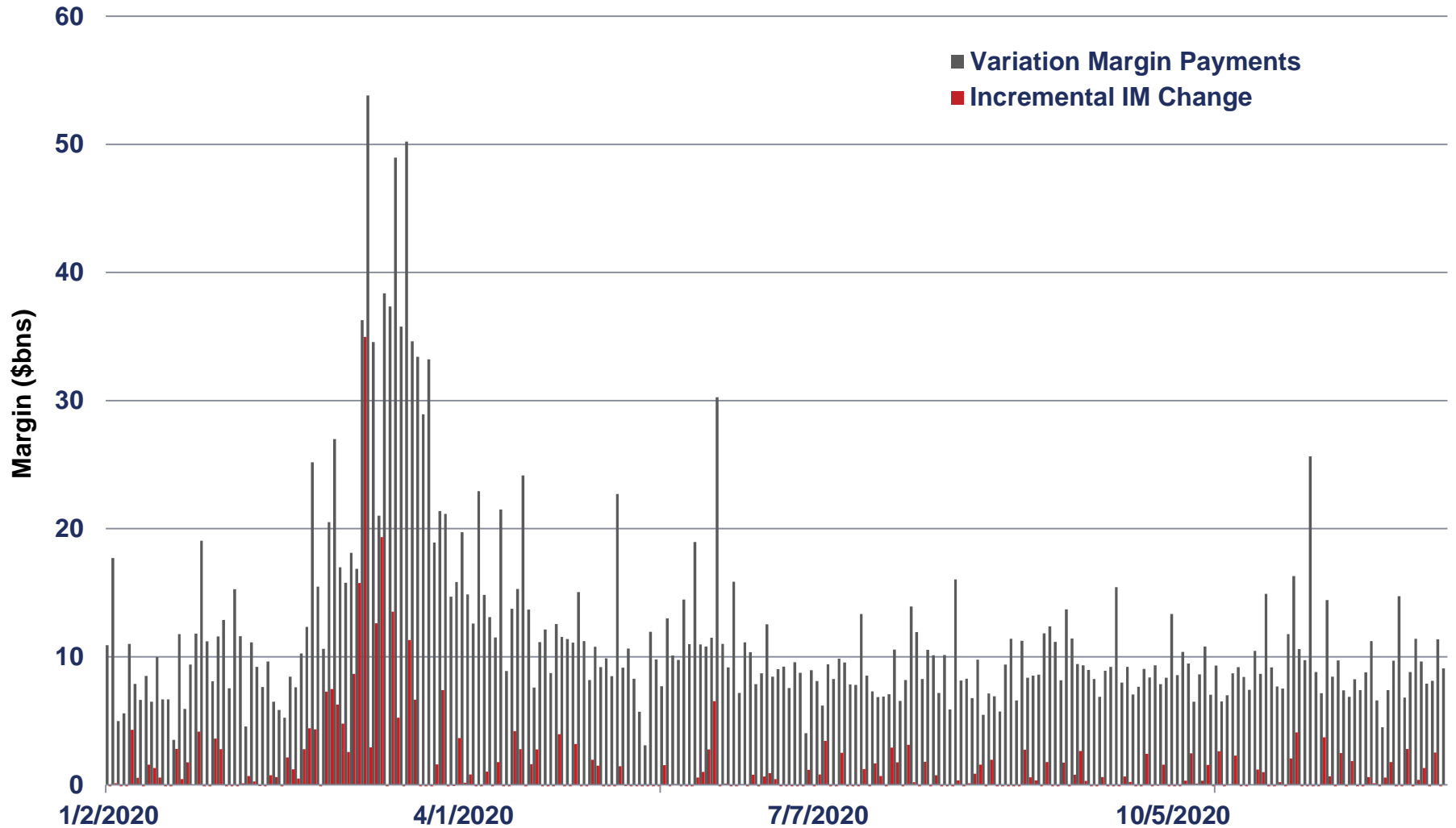
DCR's Risk Surveillance Branch

- Margin model
 - Quantitative oversight of DCOs' margin models
- Daily risk surveillance
 - Hands-on quantitative surveillance of risk exposures in futures and swaps
- CCP resilience
 - Supervisory stress testing
 - Systemic risk issues

Posted IMs at record highs



VM calls were bigger



COVID-shocks were deep in the tail

Percentile Ranks of Major Losses during 2020

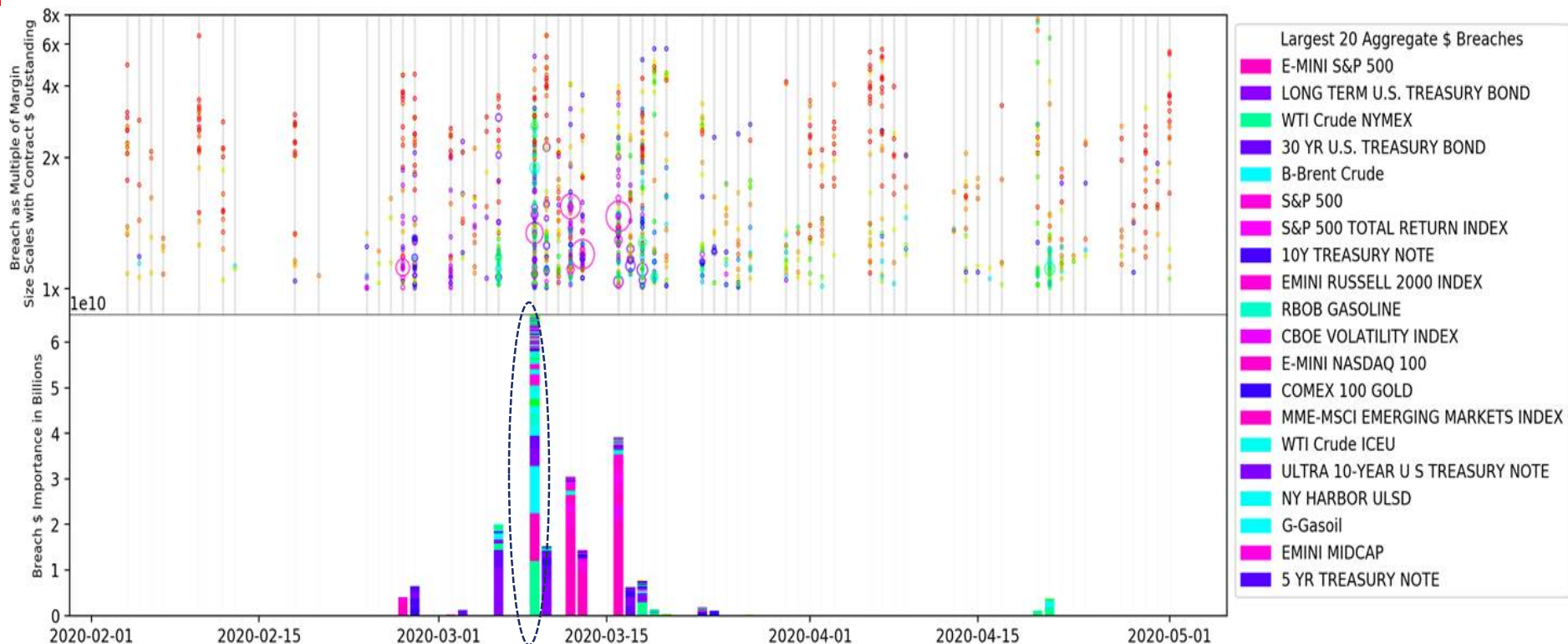
Date	Index	Percentile Rank	Percent Return
3/9/2020	10Y U.S. Gov Rate	100.000%	-29%
4/20/2020	Front Month WTI	100.000%	-306%
3/16/2020	S&P 500 Index	99.995%	-12%
3/20/2020	10Y U.S. Gov Rate	99.993%	-26%
3/12/2020	S&P 500 Index	99.989%	-10%
3/16/2020	10Y U.S. Gov Rate	99.987%	-25%
4/21/2020	Front Month WTI	99.990%	-127%
3/16/2020	Federal Funds Rate	99.988%	-77%
3/27/2020	10Y U.S. Gov Rate	99.980%	-20%
3/6/2020	10Y U.S. Gov Rate	99.974%	-16%
Plus 33 More	

Percentile Ranks of Major Gains during 2020

Date	Index	Percentile Rank	Percent Return
3/17/2020	10Y U.S. Gov Rate	100.000%	50%
4/30/2020	Front Month WTI	100.000%	25%
3/10/2020	10Y U.S. Gov Rate	99.993%	49%
4/2/2020	Front Month WTI	99.990%	25%
3/24/2020	S&P 500 Index	99.989%	9%
3/13/2020	10Y U.S. Gov Rate	99.987%	19%
3/13/2020	S&P 500 Index	99.984%	9%
9/4/2020	10Y U.S. Gov Rate	99.980%	13%
3/19/2020	Front Month WTI	99.980%	24%
5/18/2020	10Y U.S. Gov Rate	99.974%	13%
Plus 38 More	

- Scores of moves bigger than the 99.7% coverage that many CCPs target
- *Question:* Is IM meant to cover all price moves?
- *More interesting:* Did margin models react appropriately?

Product-level breaches are interesting, but ...



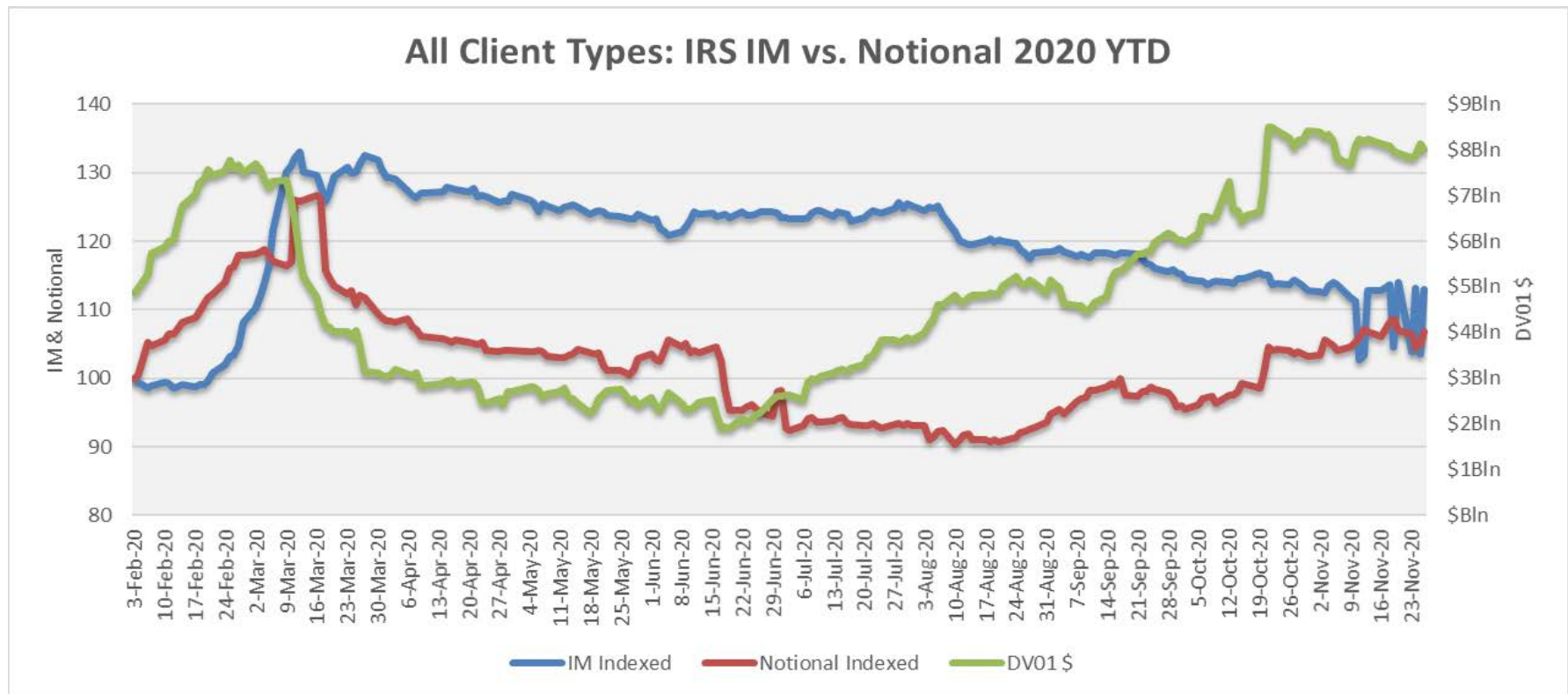
- Products do not default, firms default
- *Question:* Did account-level breaches threaten CCPs, their members?

* Breach Dollar Importance = Open Interest * (Dollar PnL - Initial Margin), Contract Dollar Outstanding = Open Interest * Initial Margin

Questions and ongoing analysis

- Were some margin models too reactive, not appropriately anti-procyclical?

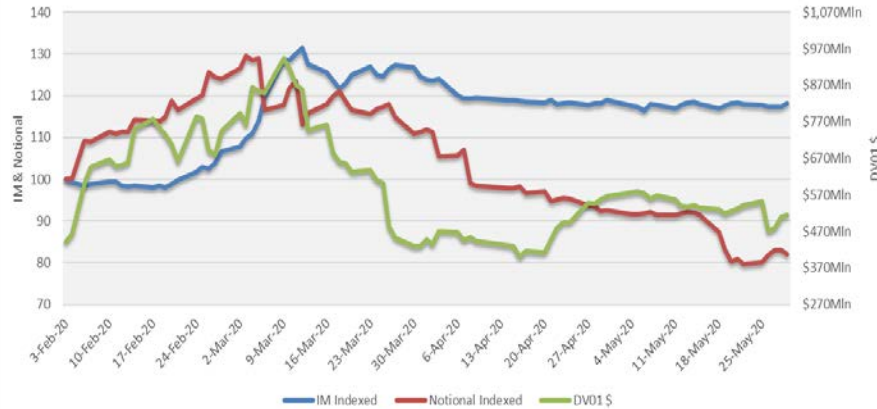
Aggregate flows might be indicative of procyclical behavior



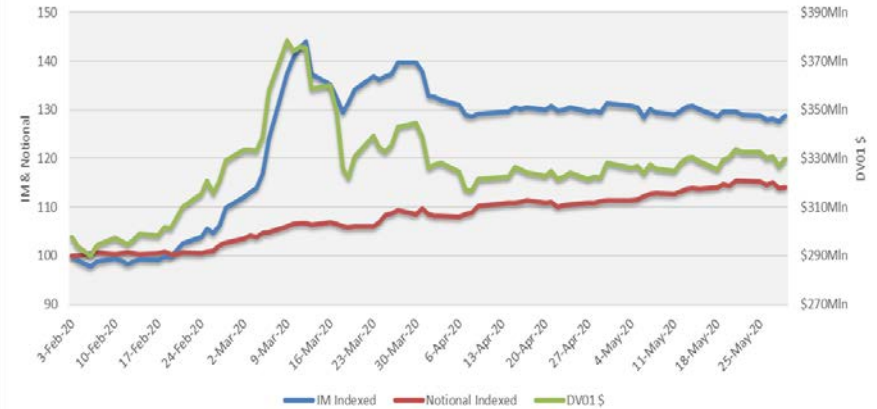
- “DV01” is the dollar value of a one basis point shift in interest rates
- “Notional Indexed” is based on Gross Notional Values (i.e. fixed and floating legs assumed to have positive notional values)

But there is heterogeneity among firms

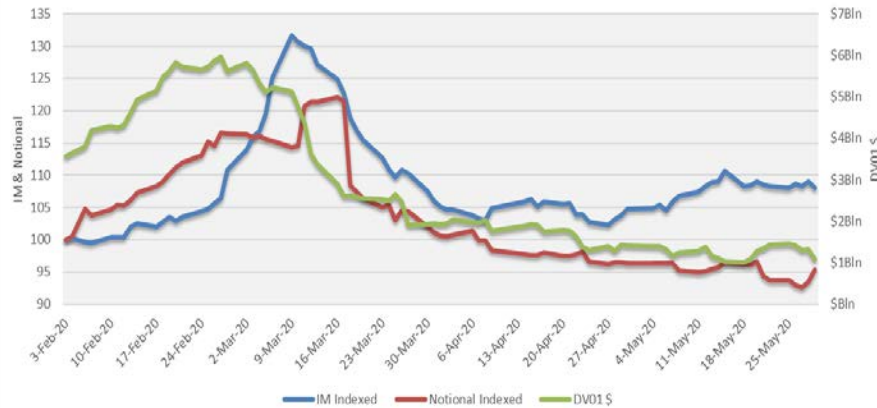
Asset Managers: IRS IM vs. Notional 2020 Feb-May



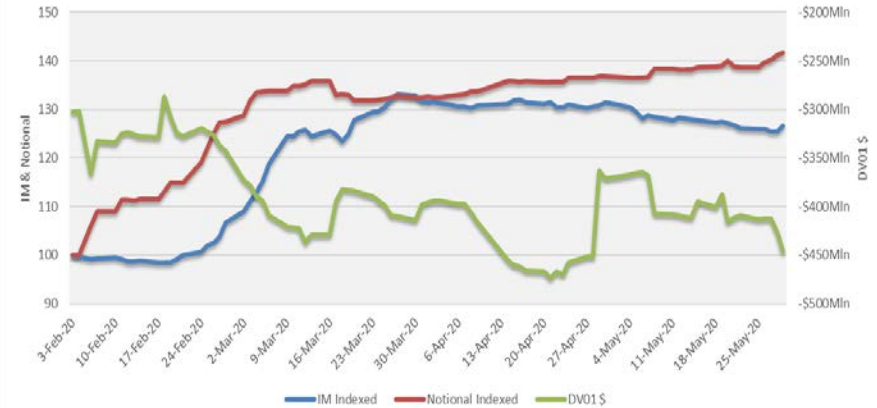
Insurance Companies: IRS IM vs. Notional 2020 Feb-May



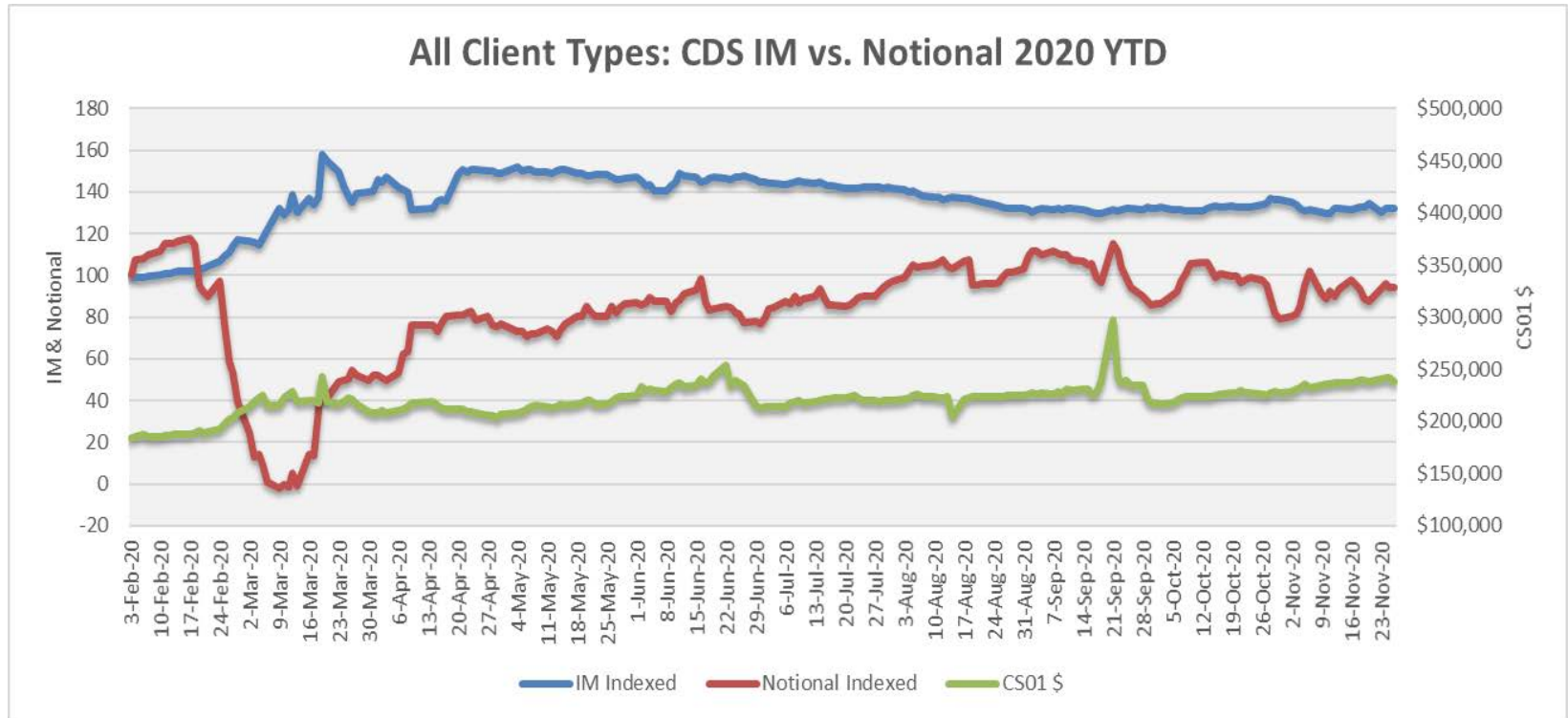
Hedge Funds: IRS IM vs. Notional 2020 Feb-May



Banks: IRS IM vs. Notional 2020 Feb-May



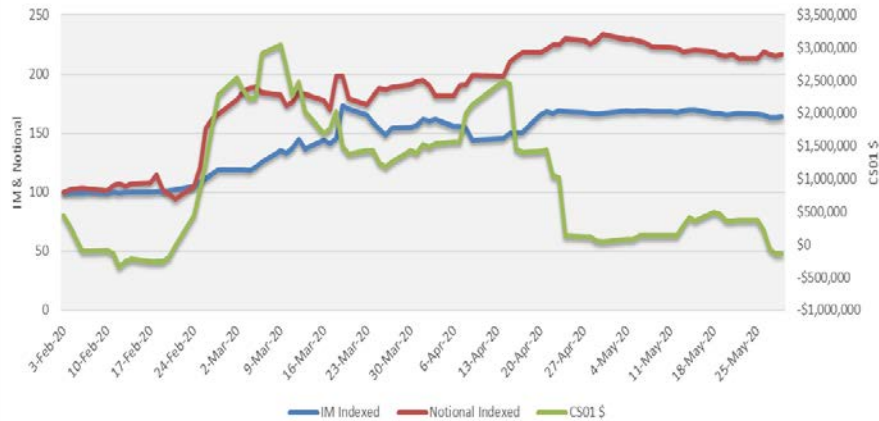
Aggregated – CDS



- “CS01” is the dollar value of a parallel, one basis point shift in the underlying credit spread curve
- “Notional Indexed” is based on Net Notional Values (i.e. short and long positions are netted)

Disaggregated

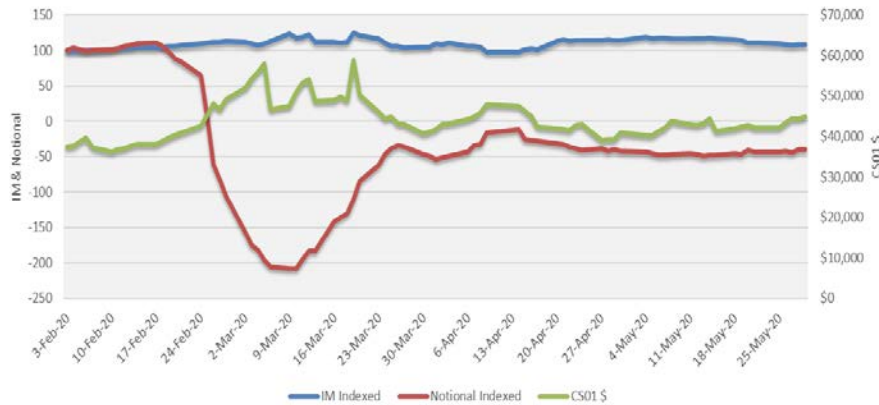
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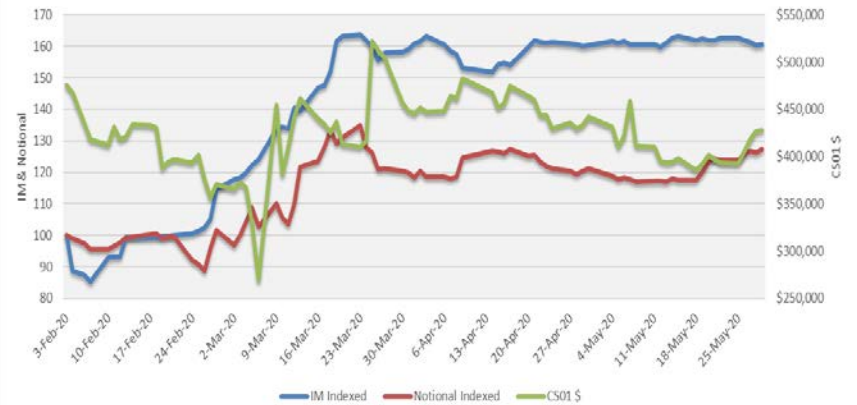
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Hedge Funds: CDS IM vs. Notional 2020 Feb-May



Banks: CDS IM vs. Notional 2020 Feb-May



Margin calls and Systemic risk

- Did margin calls cause stresses in the funding markets?
 - *The denominator problem* – How big were CCPs' margin calls (IM or VM or both?) relative to the other liquidity demands on clients, intermediaries and the broader system?