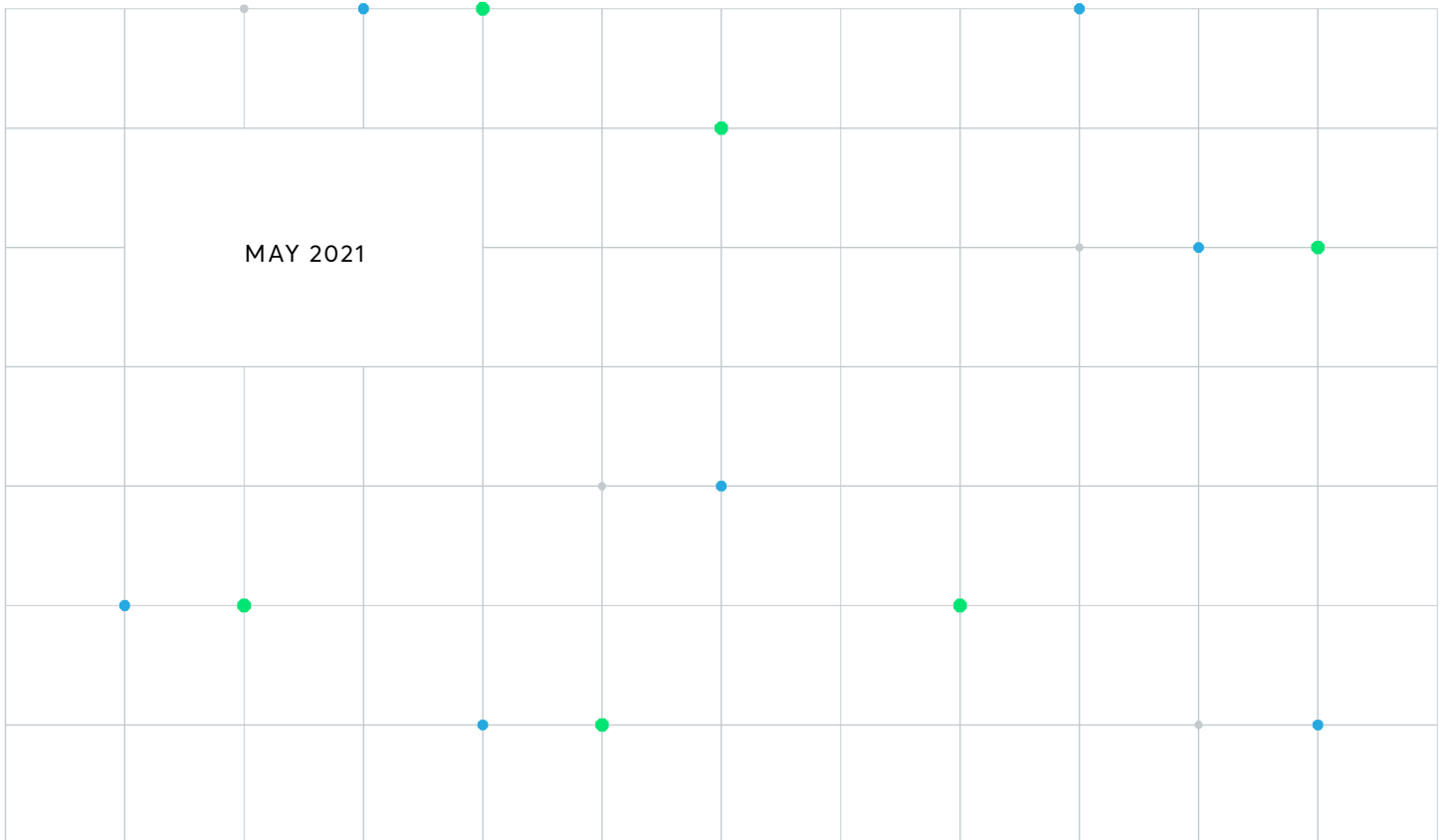


Stability in Times of Stress: CME Clearing's Anti-Procyclical Margining Regime

CME Clearing



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1. Introduction

THE CORE FUNCTION OF A CLEARING HOUSE, OR CENTRAL COUNTERPARTY ("CCP"), AS A RISK MANAGER IS TO SUPPORT FINANCIAL STABILITY AND REDUCE SYSTEMIC RISK.

CCPs are key infrastructures in financial markets that are tasked with supporting financial stability and reducing systemic risk in the markets they clear. CME Group Inc. is the parent company of Chicago Mercantile Exchange Inc. ("CME"), which provides clearing services for listed futures and options and cleared swaps. In its capacity as a CCP (i.e., "CME Clearing"), CME is registered with the Commodity Futures Trading Commission ("CFTC") as a derivatives clearing organization ("DCO").

For every cleared transaction, a CCP becomes the buyer to every seller and the seller to every buyer. This allows market participants to face a market risk neutral, creditworthy counterparty. A CCP mitigates counterparty risk by netting down exposures on a multi-lateral basis and employing risk mitigation tools, such as the collection of initial margin and default fund resources and the use of at least daily settlement variation cycles, among other tools. CCPs have a long history of successfully navigating periods of market stress, while providing market participants with much needed transparency into the risk exposures in the markets they clear. A CCP's core function is to manage risk in its markets in a manner that supports financial stability and reduces systemic risk. Notably, the financial stability and risk management benefits of central clearing have been recognized by policy-makers across the globe.¹

A significant amount of work has been accomplished by policy-makers, including the CFTC, to further enhance the resiliency of CCPs in a manner consistent with the objective of promoting financial stability and reducing systemic risk. By embracing international principles for best practices in risk management, local regulators have been able to appropriately tailor their legal and regulatory frameworks to recognize the unique characteristics of the markets cleared by local CCPs.²

Building on their successful management of the 2008 Global Financial Crisis, CCPs have continued to increase the efficacy and efficiency of their core risk management function and employ best practices in risk management that support financial stability and reduce systemic risk. These practices include the use of anti-procyclicality measures in CCPs' margin methodologies. By way of example, embedded in CME Clearing's margin methodologies are a number of anti-procyclicality measures that are tailored to the products it clears, such as seasonality parameters, extended lookback periods, stress volatility metrics, volatility floors, implied volatility, margin buffers, and where possible, proactive step-changes to initial margin levels in advance of market events. The appropriateness of CCP risk management practices, including anti-procyclicality measures, was tested during the volatility observed in March and April 2020. Consistent with past stress events, central clearing bolstered financial stability and reduced systemic risk. Moreover, CME Clearing's anti-procyclicality measures, as designed, resulted in appropriately heightened levels of initial margin going into this period of unexpected and unprecedented volatility. Despite the clear success of these margining practices in maintaining financial stability and mitigating systemic risk during this exceptional period, some critics have continued to argue that CCPs' initial margin increases had negative knock-on effects in other parts of the financial system. These critiques persist despite the lack of supporting evidence.

This paper examines CME Clearing's margining practices during March and April 2020 from multiple angles. Section 2 of this paper provides an overview of the volatility observed in the markets cleared by CME Clearing and a comparative analysis of its product-level margin changes in response to that volatility, while Sections 3 and 4 include analysis of the:

- Actual observed day-over-day changes in total initial margin required across Clearing Members for Base (i.e., primarily futures and options) and interest rates swaps ("IRS") products;

¹ See Group of 20, Leaders' Statement, Pittsburgh Summit, pg. 9 (Sept. 2009), available at https://www.fsb.org/wp-content/uploads/g20_leaders_declaration_pittsburgh_2009.pdf.

² See Committee on Payment and Settlement Systems (later renamed the Committee on Payments and Market Infrastructures or "CPMI") and Technical Committee of the International Organization of Securities Commissions ("IOSCO"), Principles for Financial Market Infrastructures (Apr. 2012).

- Impacts of CME Clearing's initial margining practices if Clearing Members' portfolios had been held constant (i.e., static portfolios), focusing on comparing the performance for futures and options products to IRS products;
- Theoretical day-over-day changes in total initial margin required that would have been observed if customers' futures and options portfolios were margined on a net,³ rather than on a gross, basis, compared to the price moves represented by the net settlement variation exchanged;
- Performance of the anti-procyclicality measures of CME Clearing's margining methodology for futures and options products compared to the performance of a common anti-procyclicality measure that applies a 25% eroding margin buffer; and
- Observed trends in the composition of CME Clearing's collateral portfolio, including levels of U.S. Dollar cash on deposit and excess initial margin collateral on deposit.

In summary, CME Clearing's margining practices were appropriately anti-procyclical during the market volatility observed in March and April 2020, while maintaining the necessary margin coverage and supporting the stability of both the markets it clears and in turn, the broader financial system.

2. Observed Market Volatility during March and April 2020

MARKETS OBSERVED UNPRECEDENTED LEVELS OF VOLATILITY OVER THE COURSE OF MARCH AND APRIL 2020.

2.1. Historical Context for Observed Market Volatility

Before presenting the analysis of CME Clearing's margining practices, it is critical to contextualize the volatility observed in March and April 2020. While CME Clearing saw heightened volatility across its offerings, it was particularly pronounced in futures and options based on U.S. Treasury securities, U.S. equity indexes, and crude oil and refined products.

- **U.S. Treasury Securities:** Over the course of March and April 2020, U.S. Treasury yields saw their largest daily percentage shifts and lowest absolute levels ever recorded, as illustrated in **Figure 1**. The daily percentage shift in the 30-Year U.S. Treasury Future was significantly larger than what was observed during the 2008 Global Financial Crisis and 2016 U.S. Presidential Election.

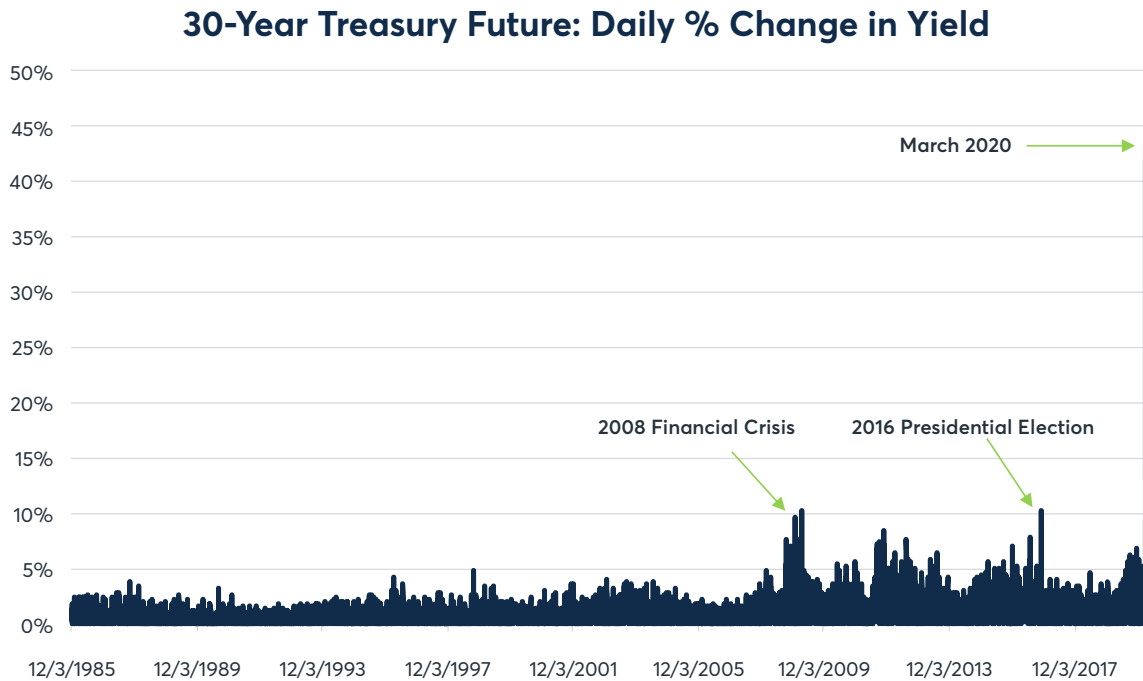
WHAT IS PROCYCLICALITY?

As defined by the international standard setters, procyclicality is "changes in risk management requirements or practices that are positively correlated with business or credit cycle fluctuations **and that may cause or exacerbate financial instability.**"* This definition appropriately recognizes the relationship between procyclicality and financial stability. Consequently, the procyclicality (or lack thereof) of a CCP's margining practices during March and April 2020 must be considered in the context of whether such practices negatively impacted financial stability.

* CPMI-IOSCO, Principles for financial market infrastructures (Apr. 2012).

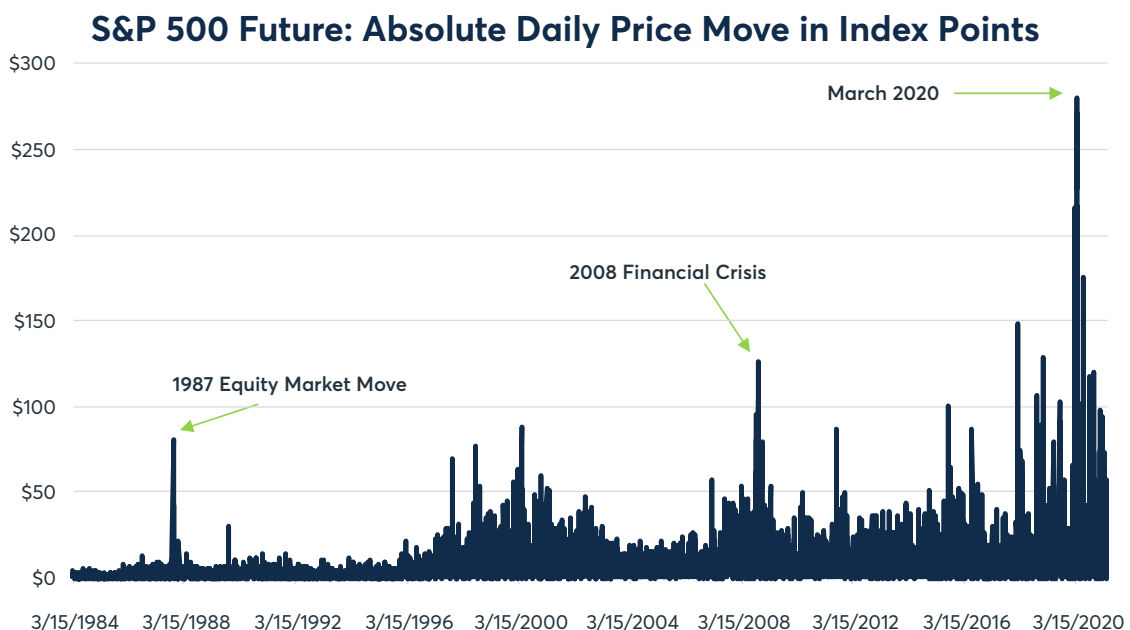
³ Net customer margining practices are prevalent in many jurisdictions outside of the U.S., despite the increased risk management protections afforded to market participants and the CCP associated with customer gross margining practices.

Figure 1



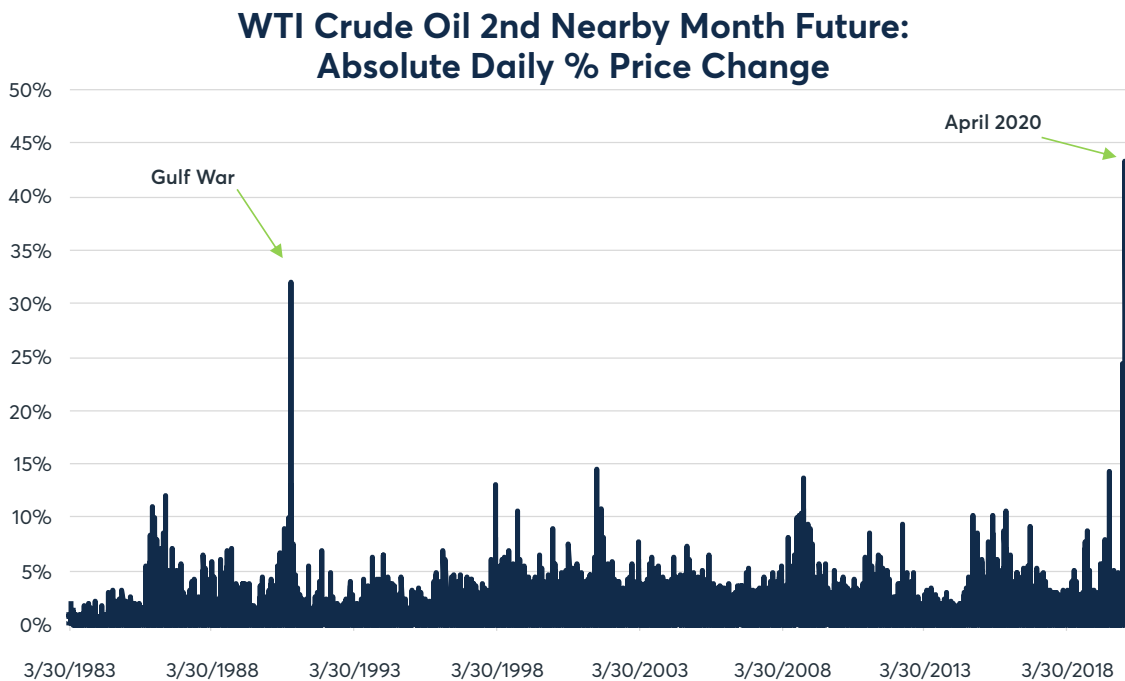
- **U.S. Equity Indexes:** Over the course of March and April 2020, the five largest absolute price moves in index points in the S&P 500 Future occurred (see **Figure 2**) and all but one of the ten largest moves in history occurred in 2020. Additionally, when evaluating the downward moves in the S&P 500 Future in March and April 2020, the only larger percentage down moves were during the equity market crash in 1987 and 2008 Global Financial Crisis. Implied volatility on the S&P 500 Future also surged to the highest level in more than 13-years in early March.

Figure 2



- **Crude Oil & Refined Products:** Over the course of March and April 2020, the WTI Crude Oil Future saw its two largest single day percentage change moves and its two largest single day U.S. Dollar moves in history. As illustrated in **Figure 3**, the single day percentage change in the second nearby month WTI Crude Oil Future⁴ that occurred in April 2020 was significantly larger than what occurred during the Gulf War. Additionally, the front month WTI Crude Oil Future fell to its lowest futures settlement price in recorded history, following the historical oil glut and storage shortages around the world. Likewise, the RBOB Gasoline Future saw its largest eight single day percentage change moves and its lowest daily settlement price since the launch of the physical future.

Figure 3



The concurrent volatility across multiple asset classes during March and April 2020 was unprecedented, and reflected the unique impact of the COVID-19 pandemic on the interconnected global economy.

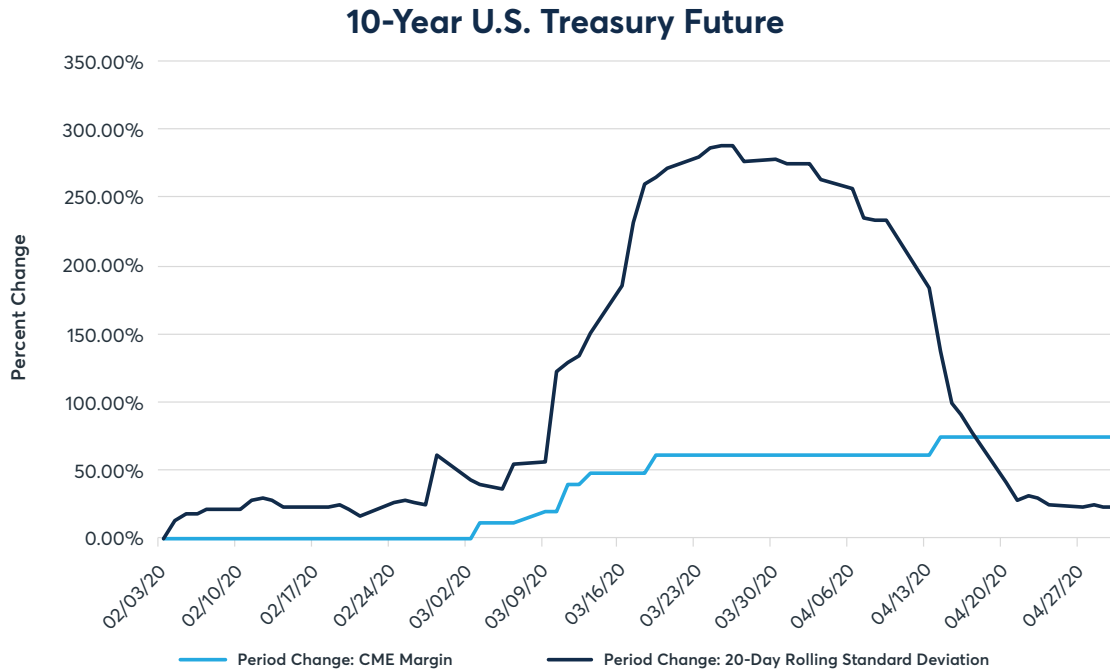
2.2. Product-Level Initial Margin Changes Compared to Observed Market Volatility

With the backdrop of the unprecedented market volatility observed in March and April 2020, it is particularly useful to compare CME Clearing's initial margin changes over this period to the volatility for the major products shown below. Using the 20-day rolling standard deviation as a proxy for a product's volatility, the product-level margin changes implemented by CME Clearing were significantly lower than the most extreme volatility observed during March and April 2020. For each product, the 20-day rolling standard deviation was at least four times more than the initial margin increases on a percentage basis, which were implemented in a step-change manner with 24-hours advance notice to the market to allow for liquidity planning and to support market stability. For example:

- **U.S. Treasury Securities:** As illustrated in **Figure 4**, for the 10-Year U.S. Treasury Future, the increase in the 20-day rolling standard deviation was 4.1 times larger than the percentage increase in the initial margin level for the product over the time period from February thru April 2020.

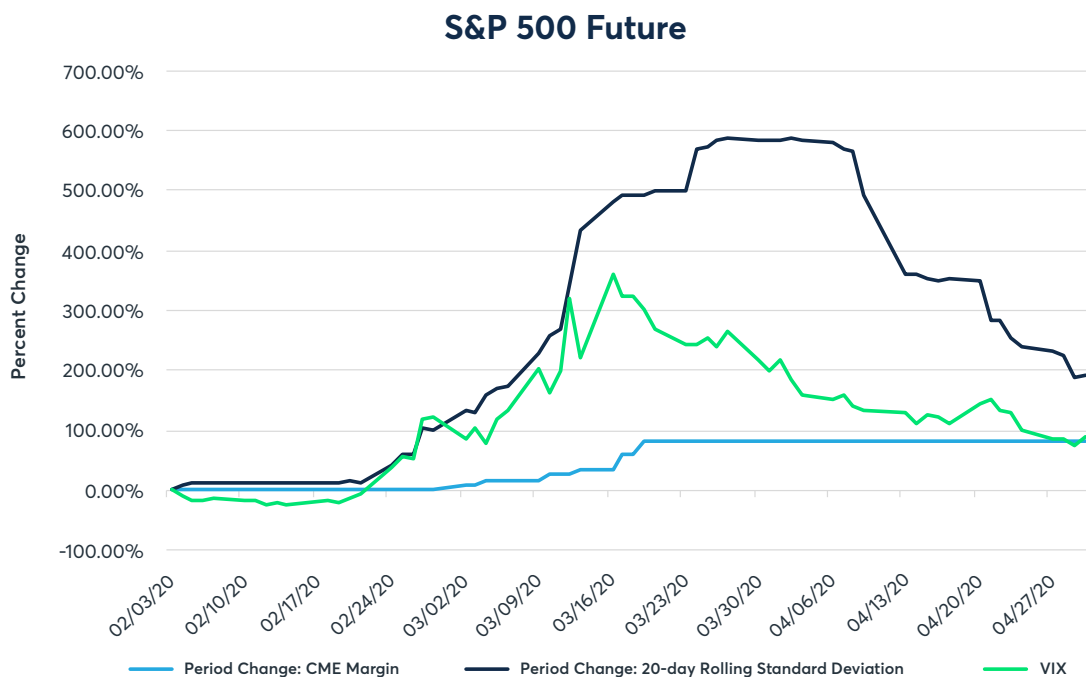
⁴ The second nearby month WTI Crude Oil Future is the contract with the second shortest time to maturity – it is the contract that will expire after the front month.

Figure 4



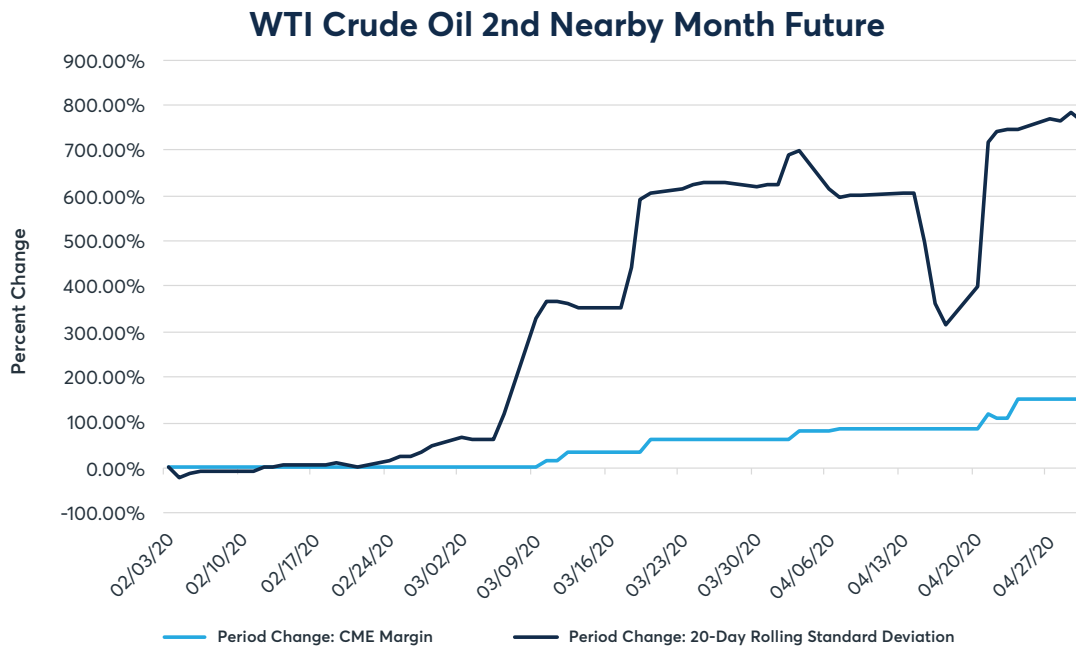
– **U.S. Equities:** As illustrated in **Figure 5**, for the S&P 500 Future, the increase in the 20-day rolling standard deviation was 4.2 times larger than the percentage increase in the initial margin level for the product over the time period from February thru April 2020. Further, the percentage change in the VIX was more than three times larger than the percentage increase in initial margin level for the S&P 500 Future over the same time period.

Figure 5



– **Crude Oil:** As illustrated in **Figure 6**, for the second nearby month WTI Crude Oil Future, the increase in the 20-day rolling standard deviation was 7.4 times larger than the percentage increase in the initial margin level for the product over the time period from February thru April 2020.

Figure 6



This data is a useful representation of the magnitude of the volatility observed in March and April 2020, as measured by a product’s 20-day rolling standard deviation. Additionally, this data demonstrates that the initial margin increases observed during this period were preceded by increases in market volatility, illustrating that CME Clearing’s initial margin increases were not only appropriate relative to the volatility, but implemented in response to the volatility on a step-change basis. As is further explored in Section 3 below, CME Clearing’s initial margining practices during March and April 2020 did not exacerbate market volatility, they supported financial stability.

3. CME Clearing’s Initial Margining Practices

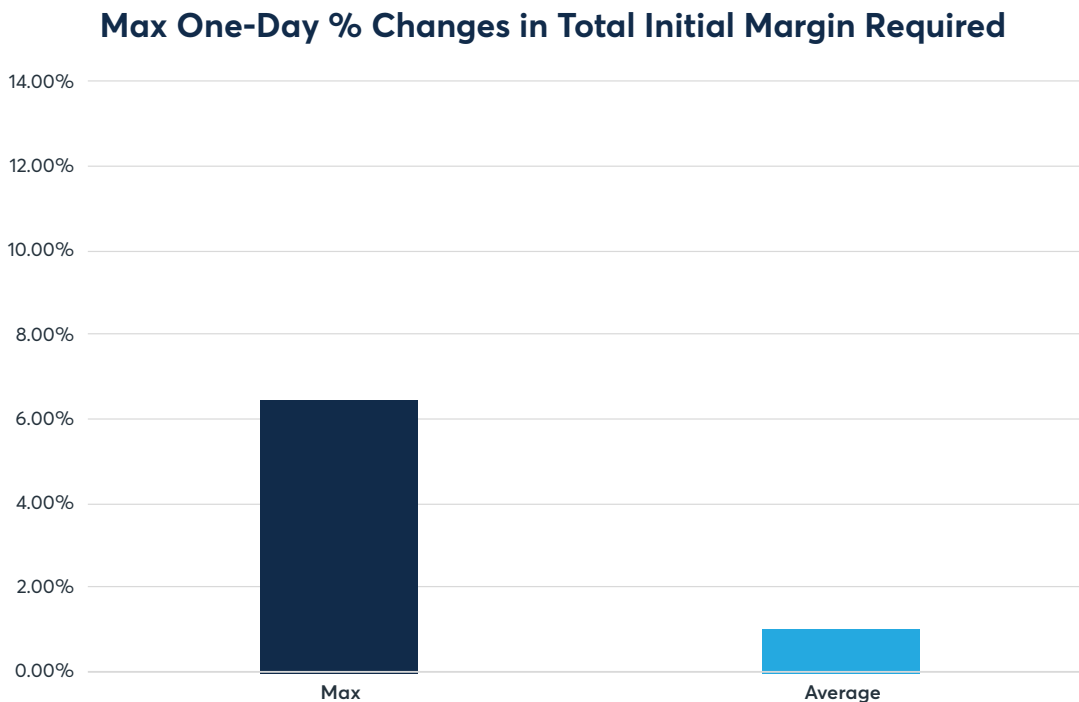
CME CLEARING’S ANTI-PROCYCLICALITY MEASURES FOR INITIAL MARGINING PERFORMED SUCCESSFULLY DURING MARCH AND APRIL 2020.

3.1. Performance of CME Clearing’s Initial Margining Practices During March and April 2020

CME Clearing responded to the unprecedented volatility in March and April 2020 without implementing new risk management rules, policies, processes, or procedures. Further, during this entire time period, CME Clearing did not run a single ad hoc intraday settlement cycle for initial margin or settlement variation. Rather, it ran its routine settlement cycles, one at both intraday and end-of-day for futures and options and one at the end-of-day for cleared swaps, where initial margin is called and settlement variation is collected from and paid to Clearing Members reflecting current market volatility. Consistent with its business-as-usual practices, CME Clearing employed appropriate step-change increases to its initial margin requirements, rather than making large one-time increases. The market was also notified with at least 24-hours before changes became effective.

As illustrated in **Figure 7**, the sizes of CME Clearing’s initial margin increases were relatively modest during March and April 2020 given the extraordinary volatility observed. **For example, the average and maximum one-day percentage changes in total initial margin required⁵ were 1.0% and 6.5%, respectively.⁶** The limited size of CME Clearing’s day-over-day initial margin increases demonstrates how CME Clearing’s anti-procyclicality measures successfully mitigated the margin impact of the unprecedented volatility on its market participants.

Figure 7



In addition to the success of its anti-procyclicality measures for margining, CME Clearing maintained robust backtesting coverage, with the potential future exposures of market participants covered as expected. Portfolio-level backtesting coverage for the 12-month period ending on March 31, 2020 stood at 99.97% for Base products and 99.87% for IRS products.⁷ In both cases, initial margin performance exceeded the CFTC requirement of maintaining 99% margin coverage.

3.2. Initial Margin Analysis for Static Portfolios During March and April 2020

In addition to reviewing the actual changes in total initial margin required, CME Clearing analyzed the impact of its margining practices if Clearing Members’ portfolios had been held constant (i.e., static portfolios), comparing its futures and options products to its IRS products. For the purposes of this analysis, positions in Clearing Members’ customer and house accounts were held constant from March 2nd through April 17th. This analysis focused on the impact of CME Clearing’s margining practices alone, since the static portfolios’ initial margin requirements were not impacted by position changes or net option value for futures and options portfolios. Consequently, CME Clearing was able to

⁵ These figures were calculated using the actual maintenance margin required by CME Clearing for Base and IRS products, aggregated across Clearing Members. Consequently, such figures do not reflect the additional margin funds that a Clearing Member may require directly from their customers.

⁶ The one-day average and maximum dollar amount change in initial margin required was \$1.9 billion and \$10.3 billion, respectively.

⁷ CME Clearing maintained a 99.97% and 99.85% portfolio-level backtesting coverage for Base and IRS products, respectively, for the 12-month period ending on June 30, 2020.

compare the performances of SPAN, which is a parametric model used for its futures and options products, and its historical value-at-risk margin methodology used for its IRS products.

While CME Clearing's initial margining practices for both futures and options and IRS products were anti-procyclical, CME Clearing's IRS products experienced larger one-day aggregate percentage increases in initial margin required than futures and options products. This was the case even though on a relative basis there was a higher level of volatility observed in March and April 2020 for the futures and options products compared to IRS products.⁸ Using the static portfolios, the maximum one-day percentage change in total initial margin required was less than 7.0% for futures and options products⁹ and 10.2% for IRS products, as shown in **Figure 8**. Moreover, while the maximum one-day percentage changes for futures and options products were comparable for the actual and static portfolios, the maximum one-day percentage change for actual portfolios of IRS products was 8.4%, which is lower than the static portfolios' figure. Broadly, this demonstrates that CME Clearing's initial margining practices for futures and options products were even more anti-procyclical than for IRS products. However, in both cases, the margin increases were small relative to the observed volatility, including as represented by day-over-day changes in settlement variation.

LOOKING BEYOND MARGIN PERIOD OF RISK

The margin period of risk ("MPOR") is an important margin parameter that is designed to capture the potential estimated time needed to liquidate a portfolio, but at times, it has received too much focus in conversations on CCPs' risk management practices. When a CCP, including CME Clearing, designs its margin methodology, it must balance the need to maintain appropriate coverage and anti-procyclicality, while prioritizing supporting the stability of the broader financial system. CME Clearing employs a number of anti-procyclicality measures, including seasonality parameters, extended lookback periods, stress volatility metrics, volatility floors, implied volatility, margin buffers, and where possible, proactive step-changes to initial margin levels in advance of market events. Focusing on the holistic performance of a CCP's margin methodology on an outcomes-basis, as opposed to narrowly focusing on specific parameters and products, is consistent with the objective of looking at a CCP's practices from a financial stability and systemic risk perspective.

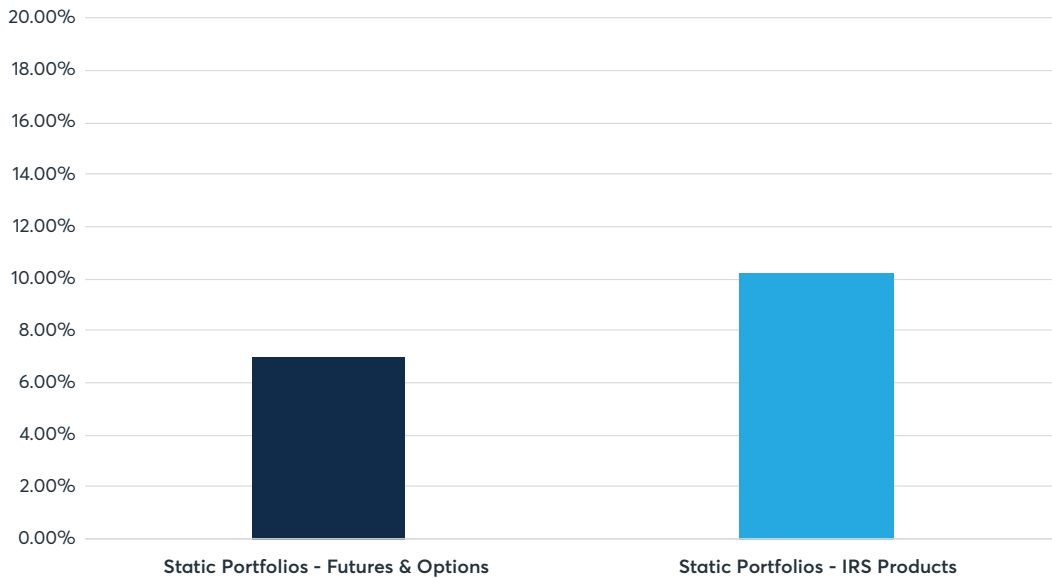
CME Clearing employs an MPOR of at least one-day for futures and options products and five-days for IRS products. Using the static portfolios for comparison, the maximum one-day percentage change in total initial margin required was less than 7.0% for futures and options products and 10.2% for IRS products, suggesting that a longer MPOR alone would not necessarily dampen the impact of the volatility observed.

⁸ By way of comparison to the volatility observed for futures and options products, as described in Section 2 of the paper, the 20-day rolling standard deviation for a U.S. Dollar (LIBOR 3M) 10-Year IRS peaked at around 225% during March and April 2020, well below the volatility observed in relevant futures and options products.

⁹ Note, the portfolio analysis for futures and options products was based on the SPAN Risk requirement, which is the margin requirement for futures and options portfolios without net option value.

Figure 8

**Static Portfolios: Max One-Day % Changes
in Total Initial Margin Required**



3.3. Initial Margin and Settlement Variation Analysis

To further understand the extent of the volatility experienced during March and April 2020 and the performance of CME Clearing’s initial margining practices, it is useful to also consider the size of the settlement variation flows that occurred during this period. Unlike initial margin, a good faith deposit that guarantees participants’ financial performance by collateralizing their potential future exposures, settlement variation is designed to limit the accumulation of debt in the system by settling market participants’ current exposures at least daily. Settlement variation is determined by changes in product prices and the composition of market participants’ portfolios, which makes it a useful measure for illustrating market volatility. Consequently, the relationship between settlement variation flows and initial margin changes is an important comparison to determining the extent of the anti-procyclicality of a CCP’s initial margin methodology.

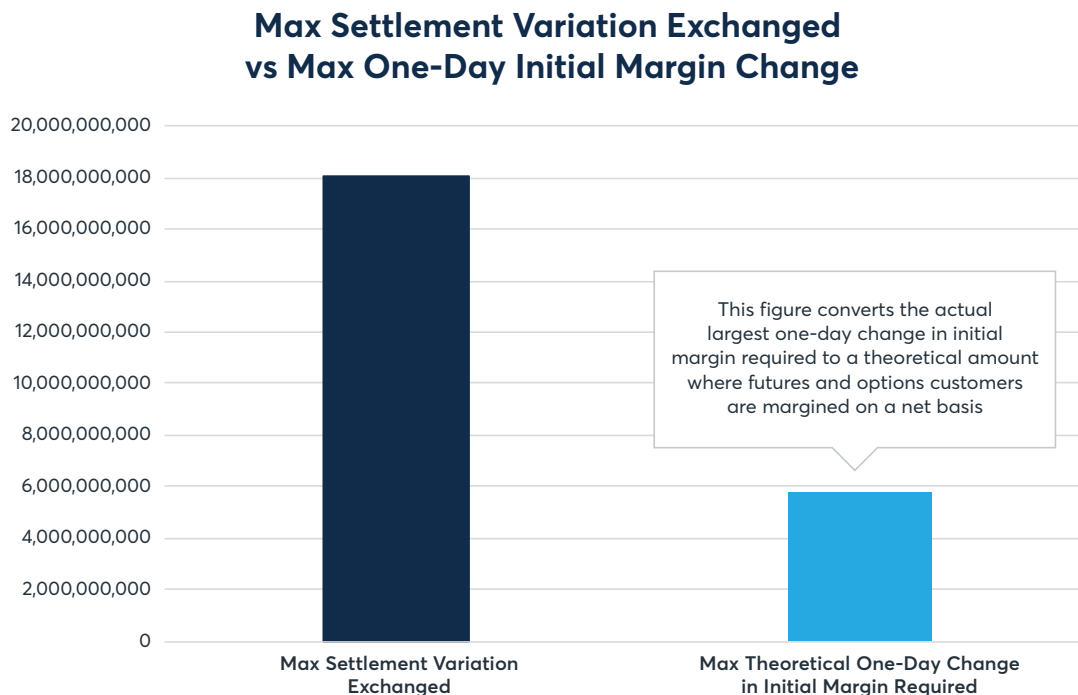
As required by the CFTC regulatory regime, CME Clearing collects initial margin for customers on a gross basis, rather than on a net basis.¹⁰ Consequently, the initial margin for a Clearing Member’s customer account is equal to the sum of the initial margin amount that would be required by CME Clearing for each individual customer within that account as if each individual customer were a Clearing Member. This means that one customer’s future exposure cannot offset another unaffiliated customer’s future exposure, as is permitted using a net margin regime. By ensuring that each customer is independently fully margined at the CME Clearing-level, fellow customer risk is reduced and each customer is incentivized to effectively manage its own risk-taking. While the risk management benefits of customer gross margining are clear, it generally results in initial margin requirements at the CCP-level that are at least twice as large as those under a customer net margin regime.¹¹ Settlement variation, however, is exchanged on a net basis for customers, meaning at the CCP-level one customer’s current exposure can offset another customer’s current exposure. In order to yield a useful comparison of initial margin changes and settlement variation flows, the difference in calculating initial margin and settlement variation must be reconciled (i.e., gross versus net). This provides for an effective evaluation of the extent to which a CCP’s initial margining practices were anti-procyclical, as compared to the market volatility observed as measured by settlement variation flows.

¹⁰ See CFTC Regulation 39.13(g)(8)(i)(A).

¹¹ See Remarks of Chairman Timothy G. Massad before the European Union Parliament, Committee on Economics, Brussels, Belgium (May 6, 2015), available at <https://www.cftc.gov/sites/default/files/idc/groups/public/@newsroom/documents/speechandtestimony/opamassad-20.pdf>.

During this period, the size of CME Clearing’s largest aggregate settlement variation exchanged¹² was \$18.1 billion, exceptionally large compared to less volatile time periods. For example, the size of the largest aggregate settlement variation exchanged during March and April 2019 was \$5.6 billion. **Over the course of March and April 2020, the largest one-day change in total initial margin required, applying a net margin standard for customers’ futures and options portfolios, would have been \$5.8 billion,¹³ roughly one-half of the size of the largest one-day change in total initial margin required using a gross margin standard and less than one-third of the size of the largest settlement variation exchanged during the period.** As is illustrated in **Figure 9**, the anti-procyclical nature of CME Clearing’s initial margining practices are evident when comparing the change in initial margin required to the unprecedented market moves observed during March and April 2020, as captured by settlement variation flows. Consequently, CME Clearing’s margining practices significantly reduced the burden those price moves could have placed on the market. This outcome directly negates any suggestion that CME Clearing’s initial margining practices were procyclical during this period.

Figure 9



3.4. Performance of CME Clearing’s Initial Margining Practices Relative to Other Industry Margining Practices

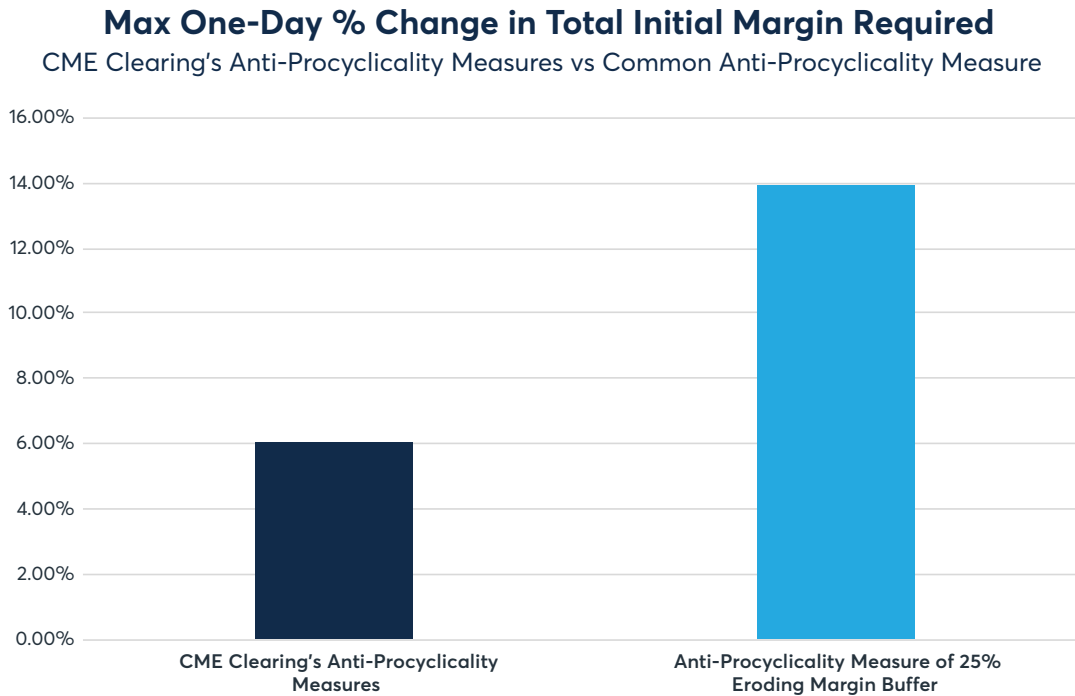
CME Clearing recognizes that there are different measures designed to ensure a CCP’s margin methodology is appropriately anti-procyclical and that those measures are selected based, in part, on the specific risk characteristics of the products cleared. Consequently, CME Clearing uses a variety of techniques that are designed to ensure appropriate anti-procyclicality of its margin methodologies. To confirm the appropriateness of CME Clearing’s approach, CME

¹² For ease of reading, this paper uses the term “settlement variation” here, but, consistent with CME Group Exchange Rule 814, settlement is required for any outstanding exposures – i.e., obligations to pay include any settlement variation payment and any other payments due in respect of a product (e.g., options premium and price alignment amount).

¹³ Note, the size of this margin change would have been further reduced if customers’ cleared swaps portfolios were also adjusted to reflect the impact of a net margin regime. Additionally, to put this into context, on this day, the total initial margin required, where a net margin standard is applied to customers’ futures and options portfolios, would have been \$84 billion as compared to \$169 billion using a customer gross margin standard. Under the CFTC’s customer gross margin regime, a DCO’s minimum margin amount for customers is equal to the amount those customers must pay to their clearing member.

Clearing analyzed its practices relative to another common anti-procyclicality measure. CME Clearing compared the performance of its anti-procyclicality measures for futures and options products to a 25% eroding margin buffer, as is illustrated in **Figure 10**.

Figure 10



To isolate the impacts of the anti-procyclicality measures, the analysis used CME Clearing's baseline margin methodology without anti-procyclicality measures to compute a baseline initial margin requirement and for comparison, determined two independent total initial margin requirements, one that included CME Clearing's anti-procyclicality measures and another that included the 25% eroding margin buffer. **During March and April 2020, the maximum one-day percentage change in total initial margin required for futures and options products using CME Clearing's anti-procyclicality measures was 6.0%, compared to a maximum of 13.9% when using a 25% eroding margin buffer as an anti-procyclicality measure instead.** This comparison confirms that CME Clearing's anti-procyclicality measures were highly successful in mitigating the impacts of the volatility observed during March and April 2020.

4. CME Clearing's Collateral Composition

DURING MARCH AND APRIL 2020, CME CLEARING OBSERVED AN INCREASE IN U.S. DOLLAR CASH POSTED AS INITIAL MARGIN AND CONSISTENT LEVELS OF EXCESS INITIAL MARGIN COLLATERAL ON DEPOSIT.

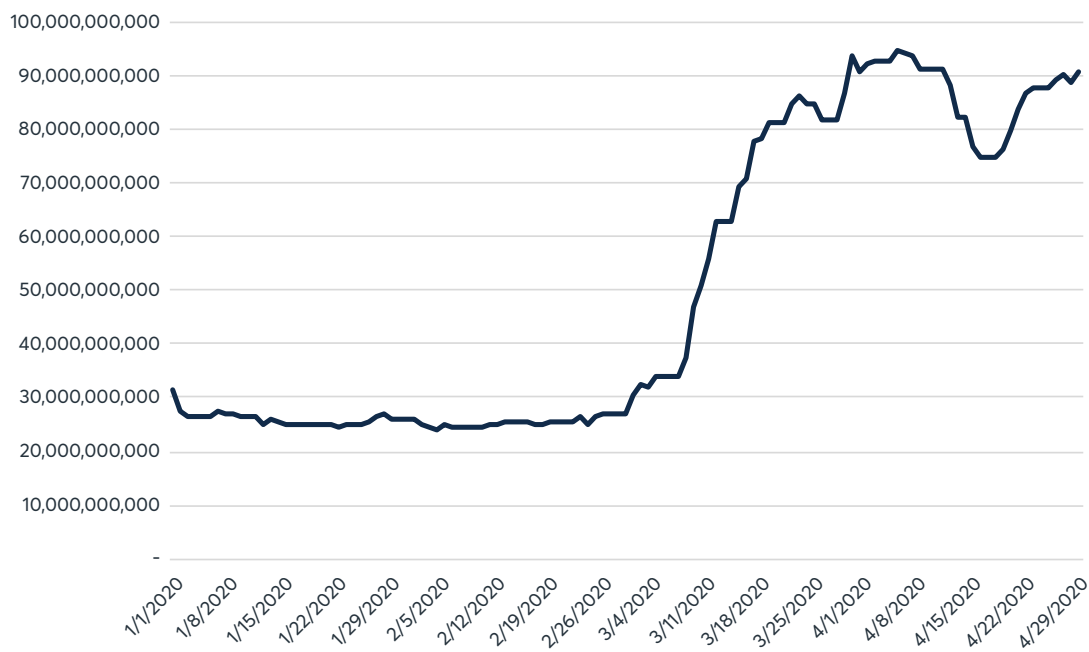
CME Clearing maintains a prudent, but diverse collateral acceptance program without any U.S. Dollar cash minimum requirements. However, acceptable collateral types are subject to appropriate haircuts and limits.¹⁴ Contrary to the "dash-for-cash" narrative driving some recent policy conversations, CME Clearing observed significant upticks in the amount of U.S. Dollar cash posted to satisfy initial margin obligations during March and April 2020.

¹⁴ CME Clearing also has the right to require any given Clearing Member to limit its posting of a specific collateral type on an ad hoc basis given Clearing Member specific risks that could arise. However, no such right was exercised during the volatility observed during March and April 2020.

Figure 11 shows that from January through February 2020, CME Clearing observed a consistent level of U.S. Dollar cash on deposit and as volatility rose in March and April 2020, the level of U.S. Dollar cash deposited as initial margin grew. Moreover, during March and April 2020, U.S. Dollar cash increased on a percentage basis relative to the total initial margin collateral deposited to CME Clearing. U.S. Dollar cash on deposit from January to February 2020 represented, on average, 17.2% of total initial margin collateral deposited. This percentage increased to 32.1% of total initial margin collateral deposited during the March and April 2020 time period, almost doubling in size from its levels prior to March 2020. While CME Clearing does not have sufficient information to comment on the demand for U.S. Dollar cash outside of the markets it clears, on a dollar and percentage basis, CME Clearing did not observe a “dash-for-cash” during March and April 2020.

Figure 11

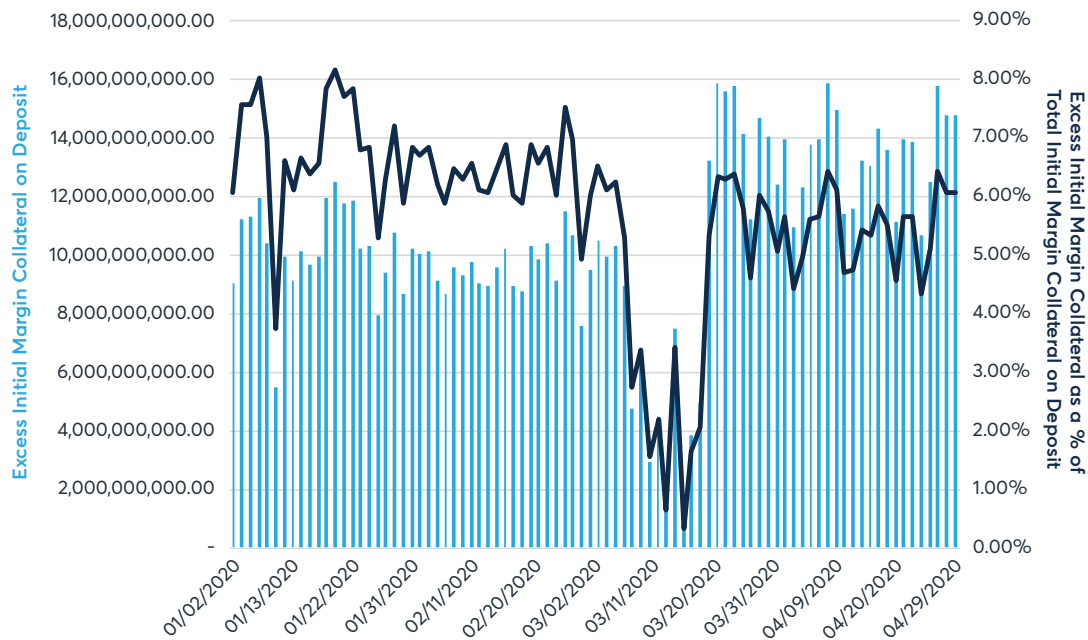
Trend in U.S. Dollar Cash Deposited as Initial Margin



Excess collateral also remained consistent during the market stress. As is demonstrated in **Figure 12**, even during the most volatile days in March, Clearing Members maintained excess initial margin collateral on deposit, albeit at lower levels. However, the amount of excess initial margin collateral on deposit quickly increased on both a dollar and percentage basis during the latter half of March 2020. Effectively, excess initial margin collateral on deposit was temporarily drawn down during the peak volatility and then quickly rebuilt within a couple of weeks thereafter.

Figure 12

Trend in Excess Initial Margin Collateral on Deposit



Analyzing U.S. Dollar cash and excess initial margin collateral on deposit at CME Clearing, provides a useful indicator of the U.S. dollar cash demands on Clearing Members, along with their ability to effectively meet initial margin calls. The fact that CME Clearing continued to observe increases in U.S. Dollar cash on deposit and fairly consistent levels of excess initial margin collateral on deposit are strong indicators that Clearing Members were well positioned to meet initial margin calls.¹⁵ This illustrates further the health of CME Clearing’s markets and Clearing Members’ ability to access collateral, including U.S. Dollar cash, to meet their obligations at CME Clearing.

5. Conclusion

Continued dialogue on best practices in risk management is essential to ensuring that market stakeholders learn from past market events and continually support the stability of cleared markets. However, it is critical that such dialogue be data driven and considers a CCP’s actions and the overall impact of those actions from a financial stability perspective. The volatility, driven by the once in a century COVID-19 pandemic, observed across asset classes in March and April 2020 was unprecedented for the financial system. Despite this unprecedented volatility, CME Clearing successfully performed its core risk management function, without any ad hoc risk management actions, in a manner that supported financial stability and reduced systemic risk, a result due, in part, to its anti-procyclical margin methodologies.

Throughout March and April 2020, appropriate step-change increases to CME Clearing’s total initial margin requirements were made, with one-day changes averaging 1.0% and peaking at 6.5%. The comparisons analyzed herein illustrate the anti-procyclical nature of CME Clearing’s margining practices as margin increases were relatively minor compared to the observed volatility. This analysis challenges the basis for the narrative that has been presented in certain papers and industry forums that CCPs’ initial margining practices were procyclical, at least as it pertains to CME Clearing.

¹⁵ A Clearing Member is issued an initial margin call when its initial margin requirement is greater than its collateral on deposit at CME Clearing, inclusive of excess, so a margin call is not issued when a Clearing Member’s excess initial margin collateral on deposit is sufficient to cover the size of the margin increase. And while a Clearing Member must satisfy an initial margin call with U.S. Dollar cash, it may immediately substitute other collateral types in satisfaction of its initial margin obligations.

We hope that this paper provides the necessary context for ongoing discussions on the lessons learned from the COVID-19 related market volatility and the manner in which central clearing can continue to serve as a bulwark against financial instability during times of market stress.

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