

Initial Margin Phase 5

by

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EXECUTIVE SUMMARY

The uncleared margin rules (UMR) mandate that registered swap dealers exchange initial margin (IM) on their trades with others swap dealers and financial end users. The covered entities first brought into scope were those, which—at the group level—had the largest average aggregate notional amount (AANA) of swaps. Compliance for those with smaller AANAs was required on later dates. The last such date, “Phase 5,” takes effect on September 1, 2020. As of then, all covered entities will be in scope so long as their AANAs exceed a material swaps exposure (MSE) of \$8 billion.

Market participants have argued that Phase 5 will bring into scope a large number of relatively small financial end users; that the costs of implementing these new IM arrangements will strain industry resources; that many newly in-scope entities will never actually have to post IM because their positions are in products exempt from IM or because their required IM falls below the existing \$50mm threshold; and, finally, that Phase 5 entities, because of their relatively small swaps positions, pose little systemic risk.

Following up on these concerns, industry representatives have begun to ask international regulators for various forms of relief, e.g., extending the phase-in schedule; permanently raising the MSE threshold; excluding physically-settled foreign exchange (FX) swaps—which are exempt from IM—from the calculation of AANA; and simplifying the compliance process.

The purpose of this paper is to guide regulators in their responses to these requests for relief by providing empirical estimates as to the coverage of Phase 5. Using regulatory data at the CFTC, this study complements the recent, related work of market participants and other regulators. Its main conclusions are as follows:

- While Phases 1 through 4 capture just over 40 entities, Phase 5 could bring 700 entities in scope, which together encompass only 11% of the AANA across all phases.
- Nearly 60% of entities coming into scope in Phase 5 have AANAs of less than \$25 billion, and over 75% have AANAs less than \$50 billion. These subsets of entities comprise about 15% and 30% of total Phase 5 AANA, respectively.
- Phase 5 entities will span a variety of business sectors. The average AANA of newly in-scope swap dealers, however, will be many times that of any other sector.
- Excluding physically-settled FX swaps from AANA could reduce the number of Phase 5 entities by nearly 30%.
- Phase 5 compliance could require implementing nearly 7,000 IM relationships. Excluding physically-settled FX swaps from AANA could reduce that number to under 5,000.

¹ Office of the Chief Economist, Commodity Futures Trading Commission. While this paper was produced in the authors' official capacity, the views expressed here are those of the authors and do not necessarily reflect the views of other Commission staff, the Office of the Chief Economist, or the Commission. The authors would like to thank Rafael Martinez and Jeffrey Hasterok for helpful comments and suggestions.

INTRODUCTION

Global uncleared margin rules (UMR) require that swap dealers exchange initial margin (IM) with financial entities and with other swap dealers against uncleared swap positions. Commercial end users and various government entities are exempt. All other entities covered by the UMR are subject to a gradual phase in of the requirements. The relevant schedule in the United States is shown in Figure 1.

The compliance phases are based on average aggregate notional amount (AANA) of swaps, which equals the daily average of notional amount of swaps over June, July, and August of the previous year. With the exception of swaps with commercial end users, all swaps must be counted toward the AANA, including swaps that are exempt from IM. AANA is calculated on a corporate group level, and swaps between affiliates are included, but counted only once.

Returning to the figure, Phases 1, 2, and 3, brought into scope entities with more than \$3 trillion, \$2.25 trillion, and \$1.5 trillion AANA, respectively. Phase 4 is scheduled to lower the threshold to \$750 billion AANA as of September 1, 2019, and Phase 5, as of September 1, 2020, to bring all remaining entities into scope.

As the figure shows, however, an entity remains out-of-scope if its AANA is below a material swaps exposure (MSE) of \$8 billion. One purpose of this MSE was to exempt entities that would probably never have to post IM because the margin requirement on their relatively small swaps positions would likely never exceed the \$50 million IM threshold. In any case, the combination of the UMR phase in and the MSE means that Phase 5 will capture entities with AANAs between \$8 and \$750 billion.²

As a result of global coordination, the UMR and its compliance schedule are similar in the United States and in other jurisdictions. For example, the only difference between the U.S. and European phase in is that the numerical thresholds in the latter are in Euros rather than U.S. dollars, that is, Phase 5 in Europe applies to entities with between €8 and €750 billion AANA.³

Several observers have noted that Phase 5 will bring a large number of relatively small entities into the scope of the UMR.⁴ Some have also surmised that the costs of implementing these new IM arrangements will strain industry resources; that many newly in-scope entities will never actually have to post IM because their positions are in products exempt from IM or because their required IM falls below \$50mm; and, finally, that Phase 5 entities, because of their relatively small swaps positions, pose little systemic risk.

Following up on these arguments, industry representatives have begun to ask international regulators for various forms of relief, e.g., extending the phase-in schedule; permanently raising the MSE

² The UMR in the United States is given by Commodity Futures Trading Commission (2016). Some details of AANA computation are on pages 703-4. The phase-in schedule is on pp. 675-676, and the MSE is on page 644. Note that, for the purposes of MSE, AANA is calculated as an average over March, April, and May.

³ BCBS-IOSCO (2015), pp. 24-25.

⁴ See Cloud Margin (2018), Condat, Puce, and Nommels (2018), ISDA (2018), and ISDA and SIFMA (2018). Please note that ISDA (2018) has been made available only to regulators.

threshold; excluding physically-settled foreign exchange (FX) swaps—which are exempt from IM—from the calculation of AANA; and simplifying the compliance process.⁵

The purpose of this paper is to guide regulators in their responses to these requests for relief by providing some empirical estimates of the coverage of Phase 5. Using regulatory data at the CFTC, this study complements the recent, related work of market participants and other regulators.

DATA AND METHODOLOGY

This study includes data on all U.S. reporting entities' interest rate swaps (IRS), index and single-name credit default swaps (CDS), FX swaps, and equity swaps. Data for all of these products except single-name CDS are available to the CFTC through reporting by Swap Data Repositories (SDRs). Data on single-name CDS are available to the CFTC through DTCC's Trade Information Warehouse.⁶ Data on IM currently exchanged on these positions was not available.

Due to current data limitations, commodity swaps are not included in this study. While regrettable, this omission should not be too consequential: commodity swaps constitute less than 0.35% of global swaps notional amounts.⁷

For compliance purposes, AANA is computed as a daily average over a three-month period. For simplicity, however, this study computes AANA from a single day's snapshot of positions on convenient dates around September, 2018.⁸ All notional amounts are converted to U.S. dollars at then prevailing exchange rates.

According to the UMR in the United States, swaps with commercial end users are not counted in the computation of AANA. The only available and relevant data, however, are that some swaps are tagged by commercial end users as hedges of commercial risk and, consequently, as exempt from clearing. This study, therefore, approximates the exclusion of swaps with commercial end users by excluding from AANA all swaps by entities that have tagged any of their swaps as hedges of commercial risk.

To make in-scope determinations, AANA is aggregated across all affiliated entities.⁹ This study accounts for the required aggregations by combining the legal entity identifiers (LEIs) that accompany each swap in the regulatory data with affiliate structure data from S&P's Cross Reference Services. Furthermore, as required by the UMR, inter-affiliate swaps are included only once in the calculation of AANA.

Some results in this paper rely on the categorization of entities by business sector. These sector classifications are a product of CFTC staff.

⁵ See, for example, ISDA *et al* (2018).

⁶ Single-name CDS are CDS on individual corporate or sovereign credits, as opposed to index CDS, which are CDS on baskets of credits or indexes. Index CDS are under the jurisdiction of the CFTC, which has established "Part 45" rules that govern reporting to SDRs. Single-name CDS are under the jurisdiction of the SEC, which has not yet implemented a corresponding reporting regime.

⁷ See BIS (2018).

⁸ The dates of these snapshots were August 31, 2018, for IRS, index CDS, and FX swaps; September 1, 2018, for single-name CDS; and September 21, 2018, for equity swaps.

⁹ See, for example, Commodity Futures Trading Commission (2016), pp. 703-704.

FINDINGS

While Phases 1 through 4 capture just over 40 entities, Phase 5 could bring 700 entities in scope, which together encompass only 11% of the AANA across all phases.

Table 1 shows the qualitative differences between Phases 1, 2, and 3, which have already taken effect, and Phases 4 and 5, which are to come. Phases 1, 2, and 3 combined captured 23 entities in this data set and encompassed \$292 trillion AANA, for an average of about \$13 trillion per entity. While Phase 4 would capture about the same number of entities, it would add only \$20 trillion AANA, for an average of \$1 trillion per entity. In sharp contrast, Phase 5 would capture over 700 additional entities, but, at an average of \$54 billion per entity, constitute only 11% of the total AANA across all phases.

Table 1: Number of Entities and AANA Covered by IM Phases

Phase(s)	Number of Entities	Total AANA (\$billions)	Average AANA per Entity (\$billions)
1, 2, and 3	23	292,338	12,710
4	20	20,049	1,002
5	704	38,275	54

The exact number of Phase 5 entities calculated here is less important than its order of magnitude. Because this study uses AANAs at particular dates in 2018, the actual number of entities that will be captured by Phase 5 in September, 2020, will certainly be different. There are, for example, 31 entities in the sample with AANAs between \$7.5 and \$8 billion that could grow into scope by September 1, 2020, and 34 entities between \$8 and \$8.5 billion that could fall out of scope by that time.

Although not shown in the table, there are tens of thousands of entities that have AANAs below the \$8 billion MSE and, therefore, will continue to remain out-of-scope after Phase 5.

Nearly 60% of entities coming into scope in Phase 5 have AANAs of less than \$25 billion, and over 75% have AANAs less than \$50 billion. These subsets of entities comprise about 15% and 30% of total Phase 5 AANA, respectively.

Figure 2 shows the distribution of Phase 5 entities across several AANA buckets. The choice of buckets is arbitrary, but the \$50 billion and \$100 billion thresholds have some significance, as market participants have called for raising the MSE threshold from \$8 billion to either \$50 billion or \$100 billion.¹⁰

The blue bars in Figure 2 give the number of entities (left axis) in each of the AANA buckets. The vast majority of the 704 Phase 5 entities are in the smallest two AANA buckets, with 403 entities, or 57%, in the \$8 to \$25 billion bucket and 139 entities, or another 20%, in the \$25 to \$50 billion bucket. There are 70 entities (10%) in the \$50 to \$100 billion range, and the remaining 92 entities (13%) fall in the over \$100 billion range.

The red line in Figure 2 (right axis) gives the cumulative AANA across buckets, starting from the rightmost bucket. For example, the cumulative amount of AANA covered by Phase 5 entities with AANAs in the five rightmost buckets, i.e., from \$50 to \$750 billion, is about \$28 trillion.

¹⁰ See, for example, Bartholomew (2018) and ISDA *et al.* (2018), p. 4.

Along this line, the following statistics may be computed. Entities in the \$8 to \$25 billion bucket encompass \$5.6 trillion AANA, or about 15% of the \$38.3 trillion Phase 5 total, while entities in the two leftmost buckets, with AANAs between \$8 and \$50 billion, encompass \$10.6 trillion AANA or 28% of the Phase 5 total.

Recalling from Table 1 that the entirety of Phase 5 AANA is 11% of the AANA of all phases combined, entities with AANAs below \$50 billion constitute 28% of 11%, or about 3% of AANA across all phases of the UMR.

Phase 5 entities will span a variety of business sectors. The average AANA of newly in-scope swap dealers, however, will be many times that of any other sector.

Table 2 analyzes the Phase 5 entities by sector. The first row gives the number of Phase 5 entities in each sector; the second row gives the total Phase 5 AANA in each sector; and the third row gives the average AANA of entities in that sector. It should be noted that the government sector used here matches the rules of the UMR, by, for example, including U.S. municipalities but excluding central banks.¹¹

By count, banks, hedge funds, and asset managers predominate. By total AANA, banks, hedge funds, and, to a lesser extent, asset managers, are the largest. By average AANA, however, swap dealers are many times as large as entities in other sectors.

Table 2. Phase 5 Entities and their AANAs by Sector

	Swap Dealers	Banks	Hedge Funds	Asset Managers	Insurance Companies	Pension Funds	Corporates	Gov't Sector	Unclassified
Number of Entities	20	158	163	153	48	54	65	14	29
Total ANA (\$billions)	4,045	9,180	10,412	6,598	3,985	1,445	1,226	840	544
Average ANA (\$billions)	202	58	64	43	83	27	19	60	19

Table 2 also reveals that 704 Phase 5 entities may be somewhat of an overestimate. As discussed in the section on data and methodology, this study excludes commercial end users that have claimed commercial hedging exemptions from clearing. It is possible, however, that some of the 65 corporates in Table 2, which did not claim such exemptions, may claim to be commercial end users that are exempt from the UMR. In that case, the true number of Phase 5 entities will fall from 704 by the number of these commercial end users.

¹¹ More specifically, central banks and entities guaranteed by a federal government are excluded from the UMR and from the entity count in Table 2, with the exception of FNMA and FHLMC, which are included. (The swaps of these excluded entities, however, are included in the calculation of AANA for covered entities.) Other government-related entities, like U.S. municipalities, Federal Home Loan Banks, and sovereign wealth funds are included in the UMR and in the entity count in Table 2.

Excluding physically-settled FX swaps from AANA could reduce the number of Phase 5 entities by nearly 30%.

Figure 3 shows how AANA breaks down by product across the IM phases. Entities in all phases have about the same percentage of IRS swaps, but, overall, Phase 4 and 5 entities have a much larger percentage of FX products and a much smaller percentage of equity products than entities in Phases 1, 2, and 3.

The data used for this study do not allow for the precise identification of physically- vs. cash-settled FX swaps. Consistent with market practice, however, a rough rule has been applied here: all FX options, NDFs (non-deliverable forwards), and exotic derivatives are considered cash settled, while all FX forwards and swaps are considered physically settled.¹² Using this approximation, Figure 3 reveals that Phase 4 and 5 entities have a significant fraction of their AANA in physically-settled FX swaps.

The extent of AANA in physically-settled FX swaps has a particular policy implication. Under current rules, all FX swaps have to be included in AANA even though physically-settled FX swaps are exempt from IM requirements. Therefore, an entity with more than \$8 billion of physically-settled FX swaps but little of any other product would be captured by one IM phase or another, and would have to prepare for the exchange of IM, but would never actually need to collect or post IM. For this reason, market participants have asked regulators to exclude physically-settled FX swaps from AANA.

Table 3 describes the impact of excluding physically-settled FX swaps from AANA. Of the 704 Phase 5 entities predicted to be in scope, 501 (71%) would remain in scope, while 203 (29%) would fall out of scope, i.e., would have their AANAs fall below \$8 billion.

Table 3 also shows that average AANA—computed with all swaps—is significantly higher for entities remaining in scope than for those falling out of scope. In other words, on average, excluding physically-settled swaps exempts the smallest swap counterparties from the IM regulatory regime. There are a small number of cases, however, in which entities with relatively large AANAs fall out of scope because their AANAs are concentrated in physically-settled FX swaps.

Table 3. Effects of Excluding Physically-Settled FX Swaps from AANA. (FX Forwards and FX Swaps are the products assumed to be Physically Settled.)

AANA Includes all Swaps	
Phase 5 in-scope entities (AANA between \$8 and \$750 billion)	704
Average AANA	\$54 billion
AANA Excludes Physically-Settled FX Swaps	
Phase 5 entities remaining in scope	501
Average AANA (all swaps)	\$69 billion
Phase 5 entities falling out of scope	203
Average AANA (all swaps)	\$19 billion

¹² Cross-currency swaps, which are explicitly included in IM requirements, are considered cash-settled FX swaps for the purposes of this study.

Phase 5 compliance could require implementing nearly 7,000 IM relationships. Excluding physically-settled FX swaps from AANA could reduce that number to under 5,000.

As mentioned in the introduction, market participants claim that the implementation of new IM agreements between Phase 5 entities and swap dealers from any phase will severely strain the resources of the financial industry. To quantify this concern, this paper estimates the number of IM relationships required by Phase 5 entities.

Strictly speaking, an IM agreement is required between every pair of LEIs. In practice, however, LEIs representing affiliates of larger groups tend to realize economies of scale in establishing these agreements. An individual portfolio manager, for example, might have its own IM arrangements in place with a particular swap dealer, but has probably shared legal and operational resources with other portfolio managers in the same asset management group. For this reason, this study defines a “relationship” as an entity and a swap dealer, where the entity is an aggregation of related affiliates. The aggregation logic is the same as used for computing AANA.

Table 4 shows the number of relationships of Phase 5 entities that include at least 1 swap dealer. Under the aggregation assumption of the previous paragraph, the number of these relationships correspond to the number of IM agreements that must be in place for Phase 5 entities to continue their swaps business with their existing counterparties.

Table 4. Number of Phase 5 Relationships that Include at Least 1 Swap Dealer from any Phase. LEIs are aggregated at the group level.

	Including Corporates	Excluding Corporates
All FX trades in AANA	6,957	6,333
Excluding physically-settled FX swaps from AANA	4,918	4,509

The first column of Table 4 assumes that all of the corporates discussed in Table 2 fall under the UMR. In that case, Phase 5 could require nearly 7,000 IM agreements, or about 10 relationships for each of the 704 Phase 5 entities. If physically-settled FX swaps were excluded from AANA, the number of in-scope entities would fall and the number of required agreements would fall to below 5,000.

The second column of Table 4 assumes that all of the corporates in Table 2 declare themselves to be commercial end users that are exempt from the UMR. In that case, the number of agreements falls to 6,333, or, if physically-settled FX swaps are excluded, to 4,509.

CONCLUSION

This study has described the characteristics of the entities that are likely to be included in Phase 5 of the IM regime. On the whole, the findings show that Phase 5 will capture a large number of entities with relatively low AANAs and with a relatively high proportion of physically-settled FX swaps. Broadly speaking, these results are consistent with recent comments and studies by market participants and other regulators.

Figure 1. Scheduled Phase In of Uncleared Margin Rules. Entities come into scope when their Average Aggregate Notional Amount (AANA) exceeds the given thresholds. An entity is never in scope if its AANA is less than a Material Swaps Exposure of \$8 billion.

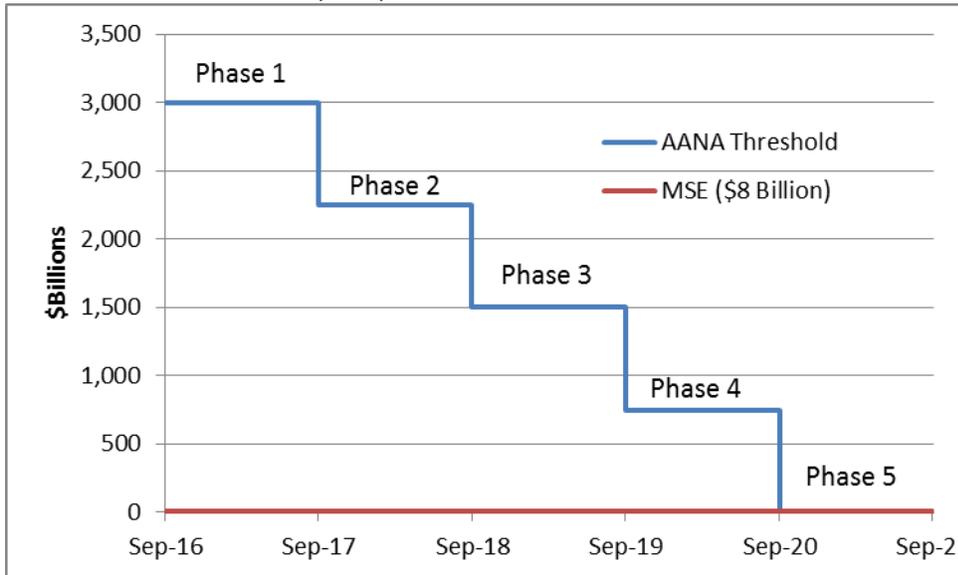


Figure 2. Phase 5 Entities by AANA Bucket. The blue bars (left axis) show the number of entities in each bucket. The solid red line (right axis) shows the cumulative AANA across buckets, starting from the rightmost bucket.

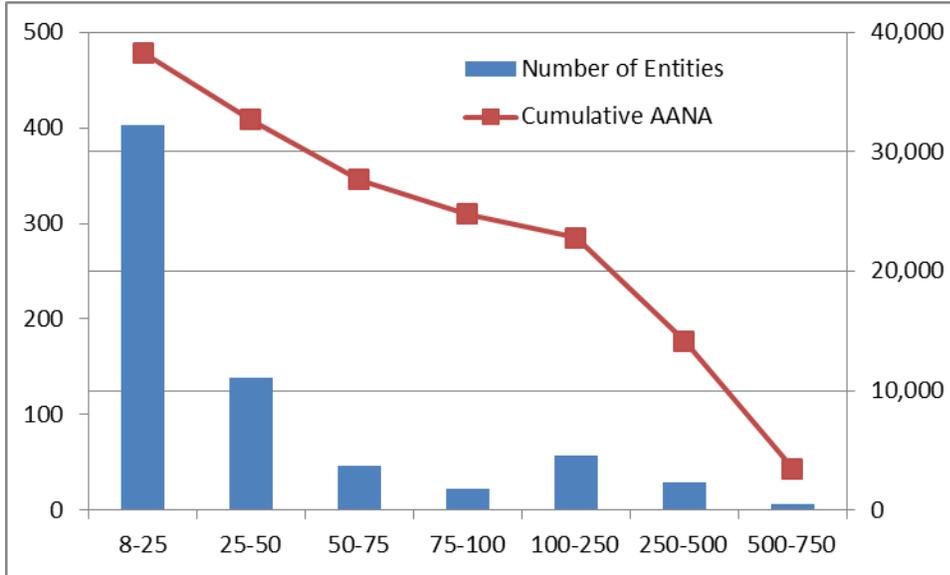
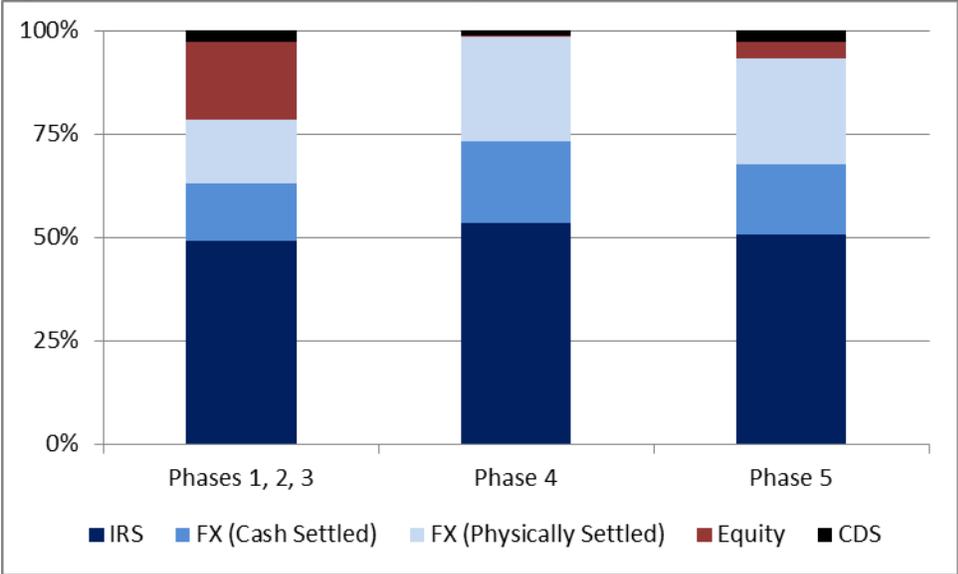


Figure 3. Product Breakdown of AANA by IM Phase



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