MIAC PERSPECTIVES

Fall 2017

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CECL: Raising the Standards of Success

Overview of the Rules

CECL overhauls the current impairment models for loans, leases and debt securities, and also impacts commitments. It removes the "probable" threshold under the "incurred loss model" for recognizing credit losses.

Firms will be required to report the current estimate of lifetime loan losses, incorporated into the Allowance for Loan and Lease Losses (ALLL). While a discounted cash flow (DCF) approach was considered by FASB in exposure drafts, the final standard allows any approach, as long as it is reasonable. Institutions, Auditors and Regulators will decide, so early discussions are encouraged.

Both quantitative and qualitative methods are to be utilized jointly. Although there is a strong a bias to the use of cash flow models with assumptions powered by quantitative data with "reasonable" scenarios, a historical loss-based result which could meet the standards.

CECL requires that estimates for losses be based on relevant information about past events, including both qualitative and quantitative factors, such as historical loss experience with similar assets, and then-current conditions. Evaluations of the borrowers' creditworthiness through reasonable, supportable forecasts that demonstrate the expected collectability of the remaining assets contractual cash flows is encouraged.

Predictive models are commonly based on historical experience/quantitative data. Reasonable forecasts and conditional assessments are qualitative in nature, as they provide a forecast and estimates.

Other qualitative factors include changes in:

- Lending policies and procedures, collections, etc.
- Experience of management and staff
- Quality of the loan review system

Financial assets carried at amortized cost less a loss allowance reflect the current expected cash flows to be collected, and income statements will reflect credit deterioration or improvement.

For financial assets carried at fair value (FV) with fluctuations recognized through other comprehensive income (OCI), the balance sheet would reflect fair value, but the income statement would reflect credit deterioration or improvement.

Under some circumstances, institutions can elect not to recognize expected credit losses on assets held at fair value. The conditions are that the FV equals or exceeds the amortized cost and if expected credit losses are immaterial.

What Will it Take to Implement CECL?

An array of new processes will be required. Policies and procedures will need to be revamped in management, governance, risk reporting, controls and functional integration.

Program Management will be the start: newfound coordination among functional areas such as finance, originations, credit, operations and technology, and a revised governance and risk management framework.

Segmentation of loan, lease and debt portfolios into clearly identifiable portions with similar and discrete characteristics is the next step.

This means the specific identification and description of the characteristics of the assets to be modeled for probability of default (POD) and loss given default (LGD) to make the ALLL processes Basel compliant. Development of specific credit risk modeling and forecasting models and tools will be the theme of the day.

FASB will require institutions to develop well-documented data management and quality processes. Validated Extract-Transform-&-Load (ETL) systems, data quality reporting and procedures must be created. Leading examples of these include MIAC's DataRaptor®, DR-Surveillance™, and the processes embodied respectively in both, facilitate the creation of reliable data warehouses for the segmentation of portfolios.

Next, firms will identify control points in the origination and operations areas to insure adequate support and data capture, and integrate new tools within financial and regulatory reporting procedures.

Importantly, dual jurisdiction reporting institutions - CECL and IFRS 9 - firms will need to:

- Handle 12 month (IFRS 9) versus lifetime (CECL) credit loss projections and reporting in models and report generation
- Estimate credit losses for future draws on commitments for IFRS and for commitments that cannot be unconditionally canceled for CECL

MIAC: Planning for CECL

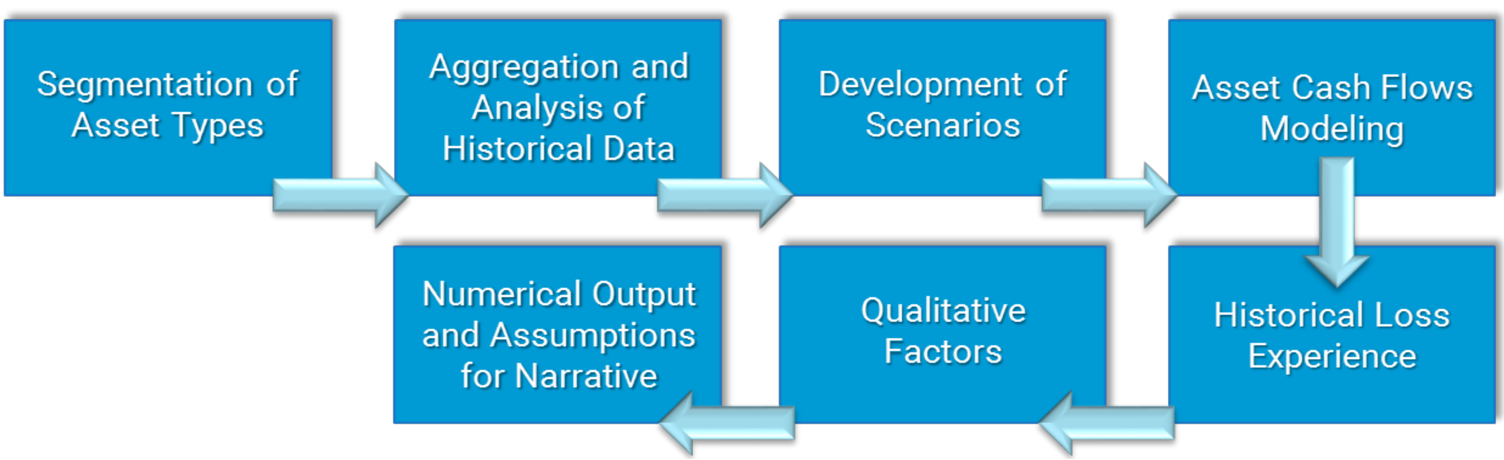
There are definite steps that organizations need to take, and MIAC suggests the following. Start with defining a revised governance standard for CECL, and establish a steering committee or task force with members currently in high-level positions in finance, originations, credit and operations who have management backing. This team needs to be given budget and action authority to implement prescribed procedures.

Then, as required, firms will need to identify appropriate external consultants and partners who can participate and contribute to the process, and should seek ways to integrate them into the process early. These firms should be able to create and/or evaluate models for conformance with the new standards.

Next, these teams will determine the resource needs involved in each area and inventory what exists today, beginning with an initial portfolio segmentation of all loan, lease and debt assets held. Determine what data is needed, what models are needed, as well as technology needs by portfolio.

The committee will need to examine existing models and methods used in the ALLL process to determine which have the potential to meet the new requirements. Generally, cash flow forecasting models offer potential, and static models do not. Firms will perform pilot evaluations of the potential impact of CECL.

FASB's CECL Implementation Process



These findings will be used to build the "how to" document or "roadmap". Key objectives and milestones should be along these lines:

01 SEGMENTATION

02 MANAGEMENT

03 METRICS

04 MODELING

05 SCENARIOS

Portfolio Segmentation

Segment the loan, lease and debt portfolio into meaningful segments, so that then, firms can appropriately define data elements needed for each. This leads to the identification of the critical statistical drivers of performance, which will be used in the modeling and reporting, and defining data models.

Data Management

The CECL plan should include the data warehousing and capture infrastructure, tools and data models required, which will require implementation of powerful data capture methods, in monthly snapshots, including credit data and performance data. Firms will need to obtain and reconstruct as much historical data as possible, plus review existing and alternative models, research credit modeling, loss modeling and voluntary prepayment modeling.

Firms must identify models that can be used or repurposed for different products, internal and external, and identify leverage opportunities and efficiency gains from current models, processes, workgroups, modeling approaches (ALLL, DFAST, or internal vs. vendor models).

Develop Metrics and Assumptions

MIAC helps firms use these data models to develop key reporting metrics and descriptions of the drivers used in the credit, loss and prepayment models, determine assumptions, and drive the building of a descriptive narrative of all the models selected and the processes to be used.

Model Design and Development

Institutions will utilize the warehouses and the tools to develop historical analysis and internal models and will integrate results with existing systems. The task will be to expand these systems to handle scenario inputs, and develop financial and managerial reporting formats, as FASB will require lenders to define and explain the use of any credit grading systems and other qualitative inputs to the ALLL process.

Scenario Design

CECL urges banks to develop a narrative to explain the basis of the scenarios and why they are deemed to be reasonable. Regulators will review the scenario rationales with senior management, so institutions are preparing currently with external consultants and auditors.

Firms will begin parallel test runs of the new CECL process, and the existing ALLL process. The challenge is to identify: volatility in results and capital impacts, and evaluate strategic considerations across product lines. Naturally, product pricing, origination standards, processing, collections and operations, will be of the essence.

The CECL Committee is encouraged to work closely with auditors and external partners to finalize the narratives and reporting.

Disclosure Format Examples and Sample Size

FASB provides examples as to what reporting disclosures look like; which are not required formats, but guidance. Internal reports can be tailored to satisfy reporting needs such as allowance aggregation. FASB has also set a requirement (FAS Topic 326) for disaggregation of receivables by credit metric and by vintage year where receivables more than 5 years old are aggregated. **See figure 1 as an example.**

CECL Partners

MIAC's core competencies qualify us as a collaborator for CECL planning at financial institutions in the USA and Europe.

Our seasoned executive team leads relationships with the most established entities in consumer lending, servicing, and regulation is what sets us apart. Our asset-specific knowledge in whole loan valuation, ALLL, trading and securitization is unrivaled.

The FASB's prescription essentially mirrors MIAC's best practices: our methodology and software suite for data warehousing and analytics, due diligence, and borrower behavior modeling is validated and accepted.

Dean C. Hurley
Managing Director, Structured Products Group

Jeffrey Zuckerman
Vice President, Capital Markets Group

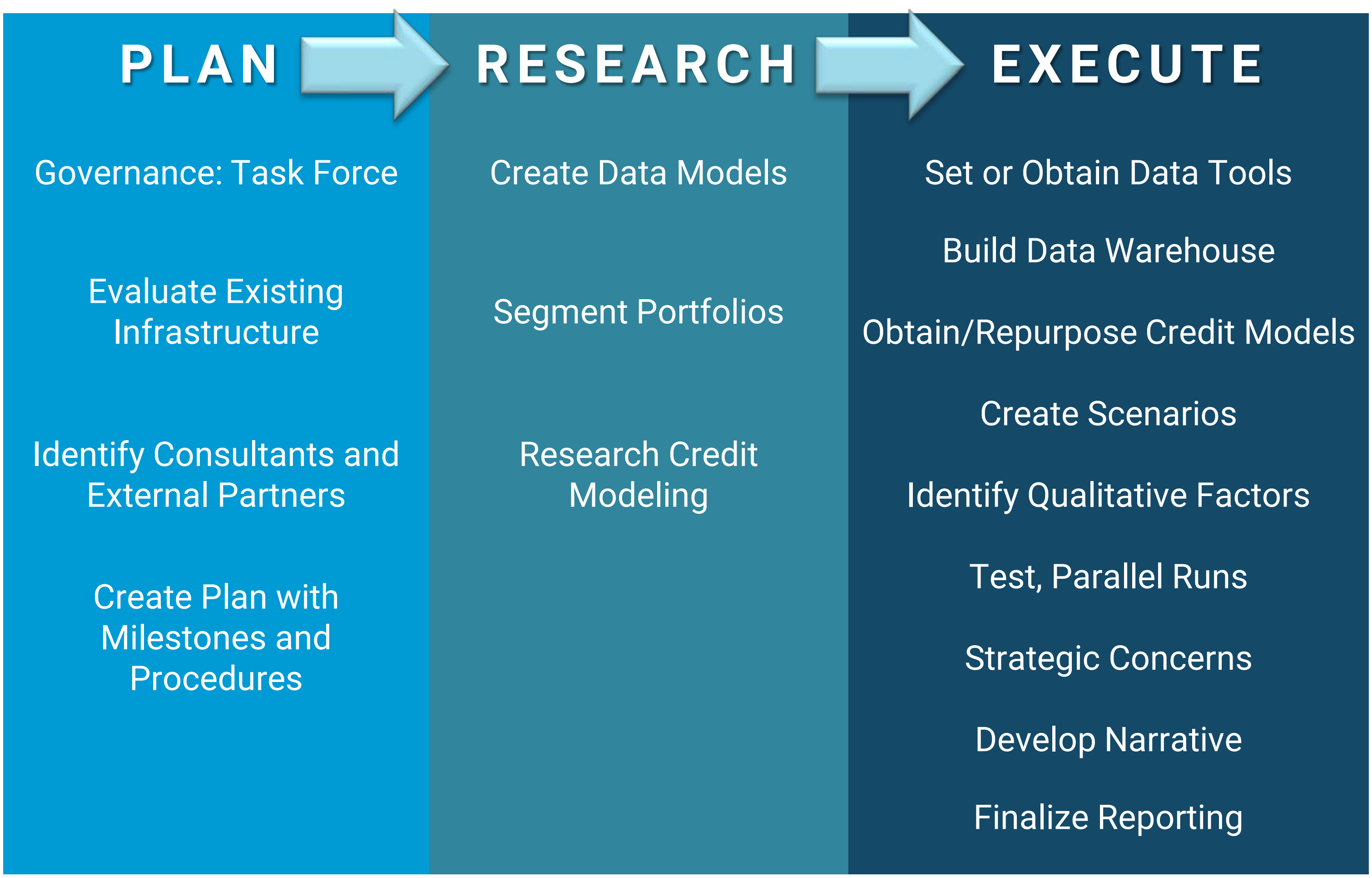


Figure 1.

Mortgage Benchmark Prices and Yields in a Post-LIBOR World

EXECUTIVE SUMMARY

- For purposes of lowering mortgagor borrowing costs, building a stronger banking system through more efficient hedging of mortgage risk and encouraging additional capital to enter the mortgage sector, we believe there is ample reason to include a mortgage current coupon yield index as one of the alternative indices to LIBOR.

- Now that protective guidelines by self-regulating bodies have been put into place, it is reasonable to assume that financial and civil/criminal penalties for the next crisis involving financial index reporting and misalignment of interest (real or perceived) will be far harsher.

- MIAC has developed an IOSCO compliant TBA Pricing Service providing Level 1, 2 and 3 prices for the entire TBA market including all contract months as well as their associated Current Coupon Yields (CCY) fixings. These prices and yields are fully transparent and provided hourly.

Recent headlines returned a sharp focus to the specter of shadow banking, opaque valuations and misalignments of interest that result when market agents are left unchecked. Just as homeowners and savers had begun to see their personal balance sheets heal from the subprime crisis and its associated equity market contagion, they learned in July 2012 of something known as The LIBOR Scandal. On July 27, 2017, things became even more interesting as the UK's Financial Conduct Authority (FCA) announced that it would no longer guarantee the existence of LIBOR after 2021 due to lack of trading activity in certain maturities. That's when homeowners and savers alike awoke to the story.

It's worthwhile to get a sense of the stakes at hand. Misstatements of LIBOR may have amounted to no more than approximately a single basis point on any given fixing and over time must have been overwhelmed by larger factors moving the markets. Nevertheless, this was enough for one prominent finance academic to characterize it as the "largest financial scam in the history of markets by an order of magnitude" affecting perhaps as much as $800 trillion dollars of investment contracts[1]. There have been more than $9 billion of fines against global banking titans such as Deutsche Bank, Barclays and UBS for their role in this fiasco with more than a dozen convictions and pending legal actions[2 3].

In response to the LIBOR Scandal, The Board of the International Organization of Securities Commissioners (IOSCO) published the Principles for Financial Benchmarks ("the Principles") in July 2013[4]. This is a roadmap of best practices intended for all markets, i.e. equities, fixed income, currencies and commodities. The Principles are a detailed 45-page document that lays out 19 guidelines covering Governance, Methodology and Transparency.

Quite appropriately, the first Principles discussed in the document are good governance practices. The most important take-aways are the following. The index must have an Administrator with overall responsibility for the index itself and oversight of third-party products and services used in index construction. The Administrator cannot be tainted by conflicts of interest or the appearance of conflicts of interest. And the use of opaque valuation techniques, oftentimes called "expert judgement", is strongly discouraged.

The other overarching theme of the Principles is transparency. The gold-standard for publication of financial indices/benchmarks is to use transaction data whenever available. Certainly, the Principles recognize there are times when recent transaction data is not available for a financial asset held within an index. In those instances, various methodological prescriptions are available. However, clearly the best solution is to use either a recent transaction for a close surrogate asset or a clear and robust valuation formula that is itself directly tied to transaction data.

How does all this relate to LIBOR and ultimately to the mortgage market? We turn to those questions next. Arising out of The LIBOR Scandal and in response to recommendations from the Treasury's Financial Stability Oversight Council (FSOC) and the global Financial Stability Board (FSB), the Federal Reserve Board together with the New York Fed convened the Alternative Reference Rates Committee (ARRC) on November 17, 2014. The mandate of ARRC is "…to promptly identify alternative interest rate benchmarks anchored in observable transactions and supported by appropriate governance structures…" and again later in the same section "…to identify a set of alternative reference interest rates that are more firmly based on transactions from a robust underlying market and that comply with emerging standards such as the *IOSCO Principles for Financial Benchmarks*..." [5]. It's clear from both passages that the mandate calls for the identification of more than one benchmark as a replacement to LIBOR. This is because applications of LIBOR developed over many years until they became almost ubiquitous, used in a myriad of ways. It is unlikely that a single replacement index will serve all purposes for which LIBOR has grown to be used.

[1] http://www.accountingdegree.net/numbers/libor.php
"The LIBOR Scandal Explained" The quote is attributed to Andrew Lo, Professor MIT
[2] https://www.cfr.org/backgrounder/understanding-libor-scandal
[3] https://qz.com/723127/after-10-years-and-billions-in-fines-the-uk-has-convicted-precisely-five-people-for-rigging-interest-rates/
[4] https://www.iosco.org/library/pubdocs/pdf/IOSCOPD415.pdf
[5] https://www.newyorkfed.org/arrc See section under "About Us".

As one replacement index for LIBOR, we believe the markets would benefit from the creation of mortgage benchmark TBA Prices and associated Current Coupon Yield (CCY) Indices created under IOSCO Principles. We offer below three brief examples for consideration addressing needs of homeowners, mortgage servicers and institutional investors. We offer three brief examples for consideration addressing needs of homeowners, mortgage servicers and institutional investors.

A More Transparent and Robust Mortgage Current Coupon Yield (CCY): Application Examples

01 The use of LIBOR as an index in adjustable rate mortgages (ARMs) might be considered one such example. LIBOR is a short money market rate; but when packaged with a large margin into ARMs it is used to reflect borrowing alternatives at a much longer point on the yield curve. Creating ARMs indexed to the mortgage current coupon yield index would reduce the measurement risk in hedging these mortgage portfolios. This would have real world implications for efficiently hedging ARM portfolios, in fact for hedging all high-grade mortgage portfolios where mortgage basis risk represents the largest risk factor. Better hedged returns for lenders will translate into lower borrowing costs for homeowners over time.

02 The mortgage servicing rights (MSR) market is an example where the creation of an investible CCY under best practices could have significant benefits to market participants. Perhaps more than any other asset, MSR prices are heavily tied to the movement of CCY. Current practices use imperfect hedges such as LIBOR-based swaps, swaptions, Treasuries and TBAs to hedge servicing portfolios. Creation of more liquid hedge instruments closely tied to their primary risk exposure could allow servicers and depositories to better manage their balance sheet.

03 Lastly, creating investible index products tied directly to CCY would allow institutional and retail investors alike to gain exposure to the mortgage markets via ETFs or index funds that would not have the prepayment risk (aka “fat tail risk”) associated with traditional actively managed mortgage portfolios. This could attract additional capital to enter the mortgage market and allow institutional investors to have a more complete construction of the market portfolio.

But aren’t there already TBA prices and CCY indices published on Bloomberg and elsewhere? Yes, however these prices and indices suffer from all the issues that IOSCO was created to address. We have written about this elsewhere and provided data supporting these thoughts[6]. We summarize here that TBA prices and the CCYs published on Bloomberg and other sources face the following challenges:

Current TBA Pricing Issues	Location of/Comment on Issue
Wide Bid-Offer Spreads	Key coupons & contracts that impact CCY
Lack of Trading Activity	Key coupons & contracts that impact CCY
Opaque Pricing Methodologies	During periods with no trading activity
Non-standardization of Pricing Sources & Methodologies	Different pricing sources apply idiosyncratic & oftentimes opaque methodologies

Nevertheless, haven’t there been some OTC contracts written on these CCY indices called Constant Maturity Mortgage (CMM) Swaps to hedge the mortgage basis? Yes, however there has also been some history of litigation over disputes of the CCY settings used in valuing them. Not surprisingly, the adoption of these valuable hedging tools has been muted for the same reasons that afflict CCY. This is another testament for the need for a more standardized TBA Price and Yield methodology.

As the ARRC undertakes to evaluate “a set of” alternative indices to LIBOR, now is an opportune time to take the long view and prepare for market cycles that lie ahead in the growth of the mortgage market. For purposes of lowering mortgagor borrowing costs, building a stronger banking system through more efficient hedging of mortgage risk and encouraging additional capital to enter the mortgage sector, we believe there is ample reason to include a mortgage current coupon yield index as one of the alternative indices to LIBOR.

[6] “The MIAC TBA Pricing Product” Published by MIAC Analytics

K. Daniel Libby, CFA
Senior Vice President, Capital Markets Group

MIAC has developed an IOSCO compliant TBA Pricing Service providing Level 1, 2 and 3 prices for the entire TBA market including all contract months as well as their associated CCY fixings. These prices and yields are fully transparent and provided hourly. Level 1 prices are based on TRACE transactions. Level 2 and 3 prices are based on robust spread relationships and rules that are also directly transaction-based and have been market tested. MIAC has published a brochure on its TBA product available upon request[7].

MIAC has also begun publishing Case Studies of their TBA Price and Yield indices[8]. Among other topics, these studies will address well-known weaknesses from other pricing sources that are addressed in the MIAC pricing methodology. They will also show trading and liquidity characteristics for premium/discount coupons and cash/forward contracts important to various market participants.

[7] ibid

[8] "The MIAC TBA Pricing Product: Case Study #1 – Bid/Offer Spreads as a Function of MIAC Prices" published by MIAC Analytics is the first in this series. "The MIAC TBA Pricing Product Case Study #2 – A Comparison of MIAC & Bloomberg Current Coupon Yields"

Residential MSR Market Update

As measured by Bankrate, month-over-month primary market 30-Yr conventional mortgage rates increased by three basis points to end the month of October at 3.83%. Quarter-over-quarter, 30-Yr conventional rates experienced a slight two basis point decline. While this amount of month-over-month mortgage rate movement may produce only a minimal upward shift in value, there was also an increase in benchmark earnings rates. In comparison to the month-over-month increase in base mortgage rate, the 5-Yr swap rate which is MIAC's benchmark for earnings rates increased in a non-parallel fashion to end the month at 2.08% or approximately eight basis points higher than September's closing rate. Likewise, quarter-over-quarter the 18 basis point increase in the 5-Yr swap rate was in stark contrast to the quarterly change in primary mortgage rate.

Considering its influence on mortgage rates and the impact that a volatile CMS 10-Year Rate can have on MSR's, it too needs to be a closely watched benchmark. Month-over-month the CMS 10-Year increased by just over 6 basis points which for historians is nearly 100 basis points higher than the all-time low set in July 2016.

What was even more impactful to MSR values during the quarter were the trading values witnessed on mostly larger MSR offerings which month-over-month vaulted MIAC's Conventional 30-Yr 3.50% 2017 GSA Index north of a 4.0 multiple.

	Run ID	Pricing Times	CMS 2Y	CMS 5Y	CMS 10Y	2Y/10Y	FN15 PMR	FN15 CCY	FN30 PMR	FN30 CCY	FN 30/10Y	GN30 PMR	GN30 CCY	HY51 PMR	1x10 Swaption
Current Time	1	2017-10-31 15:00:00	1.8143	2.0813	2.3458	0.5316	3.2350	2.4329	3.8300	3.0225	0.6767	3.5800	2.8559	3.3900	28.90
Previous Time	1	2017-09-29 15:00:07	1.7314	2.0030	2.2820	0.5506	3.1450	2.3779	3.8000	2.9819	0.6999	3.5500	2.8152	3.3100	28.06
		Change (bps)	8.28	7.82	6.38	(1.90)	9.00	5.50	3.00	4.05	(2.33)	3.00	4.07	8.00	0.84

Product Type	Total UPB (billion)	Avg Loan Size	WAC	WALA	WAM	OAS	OAD	OAC	Net Serv Fee(bps)	Price Current (bps)	Price Prev (bps)	Price Change (bps)	Serv Multiple Current	Serv Multiple Previous	Multiple Change	% Price Change
15YR_CONV	354.9	238,725	3.321	45	131	900.9	-12.8	-5.2	25.00	75.71	74.30	1.41	3.03	2.97	0.06	1.89%
15YR_GNII	27.4	197,775	3.266	34	142	1065.2	-26.1	-10.4	19.00	42.52	41.97	0.55	2.24	2.21	0.03	1.31%
30YR_CONV	1,704.9	271,984	4.262	49	304	939.8	-18.9	-3.8	25.00	96.06	90.17	5.89	3.84	3.61	0.24	6.53%
30YR_FHA_Strml	1.0	151,999	3.750	0	360	1368.1	-22.2	-4.3	19.00	45.34	43.45	1.89	2.39	2.29	0.10	4.35%
30YR_GNI_FHA	40.9	177,313	5.297	97	256	1181.5	-19.6	-0.6	44.00	111.36	106.29	5.07	2.53	2.42	0.12	4.77%
30YR_GNI_VA	40.9	177,313	5.297	97	256	1186.8	-19.8	-0.6	44.00	112.82	107.66	5.15	2.56	2.45	0.12	4.79%
30YR_GNII_FHA	1,186.3	231,931	3.883	36	320	1143.7	-25.2	-5.3	19.00	54.80	52.79	2.01	2.88	2.78	0.11	3.81%
30YR_GNII_VA	1,186.3	231,931	3.883	36	320	1154.3	-25.5	-5.3	19.00	56.70	54.60	2.10	2.98	2.87	0.11	3.84%
30YR_JUMBO	1,341.9	509,933	4.092	42	312	1050.7	-24.7	-6.3	25.00	90.81	84.79	6.02	3.63	3.39	0.24	7.10%
30YR_VA_IRRL	1.0	200,000	3.750	0	360	1342.0	-20.9	-4.1	19.00	55.98	53.60	2.38	2.95	2.82	0.13	4.43%
H_CONV	4.0	325,389	3.438	0	360	1027.8	-19.2	-5.8	25.00	77.22	75.45	1.77	3.09	3.02	0.07	2.34%
H_GNII	2.0	282,000	3.425	0	360	1296.2	-26.5	-6.3	25.00	63.41	61.93	1.48	2.54	2.48	0.06	2.39%
H_Jumbo	4.0	500,000	3.413	0	360	1009.7	-26.0	-8.8	25.00	67.88	65.33	2.54	2.72	2.61	0.10	3.89%
Total	**5,895.5**	**277,367**	**4.022**	**43**	**301**	**1051.3**	**-22.5**	**-5.1**	**22.82**	**77.33**	**73.27**	**4.06**	**3.39**	**3.21**	**0.18**	**5.54%**

Period-over-Period Price Change by Product

Looking to take advantage of a vastly improved secondary bulk market for Fannie Mae, Freddie Mac, and Ginnie Mae mortgage servicing rights, bulk transfers approaching $300 billion took place in the first nine months of 2017. The fourth quarter will be no exception as numerous offerings hit the market in October from firms wanting to get one more transaction completed before end-of-year.

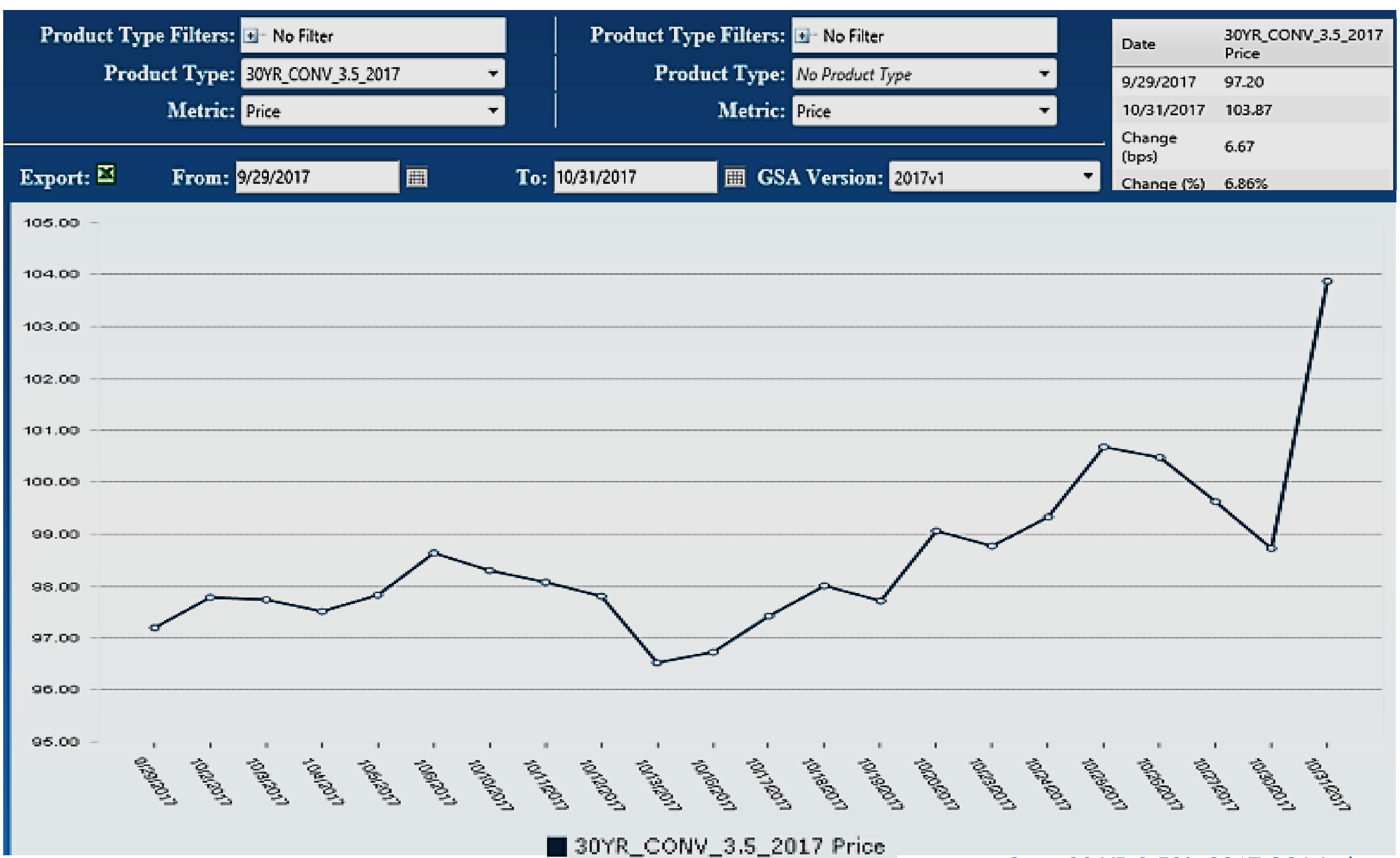
Counterparty net worth and the size of the offering continue to impact who bids and at what price but during October, "Conventional at-market multi-billion offerings" mostly experienced very respectable bids ranging from a 4.0 to 4.25 multiple. Low delinquency conventional 30-Yr product can trade in the mid-4 multiple range although sellers continue to experience buyer resistance at asking levels in excess of a 4.5 multiple.

The smaller conventional packages categorized as $500 million or less are seeing an uptick in trading volume as well but at prices that "on average" can be 5 to 15 basis points lower than the bid prices obtained on larger offerings.

Similarly, trading levels on mostly newer "at-market Ginnie Mae offerings" ranged in the low to mid 3 multiple range, while "stressed Ginnie Mae offerings" are subject to a much wider range that is heavily influenced by, delinquencies, geography, counterparty and potential exposure to recent storms.

MIAC's MSR Valuation department provides MSR valuation advisory services to over 200 institutions totaling nearly $2 Trillion in residential MSR valuations every month. MIAC is an industry leader in brokering MSR bulk and flow offerings.

Mike Carnes
Managing Director, MSR Valuations, Capital Markets Group



Conv 30-YR 3.50% 2017 GSA Index

Whole Loan Execution Update

Market Size

Residential mortgages generally fall into one of two categories: Agency — eligible for programs offered by Fannie Mae, Freddie Mac, or Ginnie Mae (FHA/VA) — and non-Agency. As of Q12017, Agency loans are approximately 85% of new originations. According to the Federal Reserve Board, mortgage debt outstanding in that year totaled approximately $10.3 trillion[1]. By contrast, the private (non-Agency) market consists of over $1 trillion of this balance. However, the importance of the non-Agency market is disproportionate to its market share, because non-Agency programs, typically sold through whole-loan execution, are often where lenders can find a niche to differentiate themselves from the competition.

First Lien Residential Originations per MBA[2]

2017 Est. $1.627 T - 67% Purchase Money

2016 Est. $1.891 T - 52% Purchase Money

2015 Est. $1.679 T - 52% Purchase Money

Agency vs. Non-Agency

Fannie Mae, Freddie Mac, and FHA/VA issue guidelines defining the loans that that they will purchase. Banks, mortgage companies, and other originators, generate loans that meet those guidelines, allowing consumers access to multiple sources of home lending. Originators compete on rate, price, and service, while providing consistent access to standardized financing vehicles offered by the Agencies. This creates liquidity in the market by providing a known source of funding for mortgage lending.

The non-Agency market, comprising loans that are not purchased by the Agencies, serves a different tier of consumer, many of whom have been left out of the housing recovery due to the drastic reduction in capital for non-Agency mortgages since the market down-turn began in 2007. These customers may not qualify for an Agency loan for any number of reasons, including lack of credit history, self-employed income, inconsistent employment history, excluded property type, or loan balance. non-Agency loans are typically originated by banks to be held on their balance sheets. This risk is typically priced at an interest rate of 50-150 basis points (bps) over Agency paper.

Non-Agency Loans in Secondary Market

In the mid-2010s, mortgage lenders began venturing into new products that are further down the credit curve and/or allowing for impairments that previously may have resulted in prohibitive risk-based pricing adjustments. Specifically, larger community banks were underwriting portfolio mortgages to higher loan-to-value ratios (LTVs), lower FICOs, and/or alternative doc types. Generally, only one of the three criteria deviated from what makes a loan Agency-eligible; another way to say this is that portfolio lenders seek to avoid excessive risk layering. Banks still need to be able to justify to regulators why they make a loan, and "the relationship" is not an acceptable answer. As this style of community-bank lending expands, the secondary market for these loans is currently outpacing origination. Other banks are willing to pay a premium for these loans, because they can avoid the overhead associated with retail loan origination, and the higher yields on the loans are adequate compensation for the (perceived or actual) incremental credit risk.

[1] https://www.federalreserve.gov/data/mortoutstand/current.htm

[2] http://www.mortgagedaily.com/ResidentialStatistics.asp

CRA

Mid 2017 has been a busy season for CRA transactions for MIAC. Historically, the CRA buying season does not pick up until the fall. In 2017 MIAC released a software tool that allows originators to parse their product by CRA credit eligibility. MIAC is uniquely suited to work with depositories to solve their CRA credit need. This investment in technology has allowed MIAC to more efficiently serve our Bank clients' needs for Community Reinvestment Act credit.

Pricing for CRA loans has historically centered around 50-150 bps over TBA prices. Recent transactions have centered around 75bps over, which we feel reflects a discount to the true market price prior to demand increasing. This is due to the relatively fewer Buyers in the market, as well as efficiencies in transacting that MIAC has generated by relying on existing Agency clients to provide them and increase in price received while at the same time allowing Buyers to pay less than other Sellers are asking.

Non-QM Lending

The market has nearly doubled in 2017 from 2016 numbers, mainly because there are more lenders willing to expand their credit box. In 2016 there were relatively few lenders willing to lend to a challenged borrower at reasonable rate. This allowed for a few major lenders to capture the majority of the market. In 2017, we are seeing more liquidity for these borrowers from banks, funds and increasingly, non-bank lenders. This has the dual effect of reducing rates through competition, which consequently increases demand for this product.

MIAC has transacted a substantial volume of these loans through our depository and fund clients. Using our robust suite of modeling and marketing tools we have been able to help Buyers understand the product and the Sellers to price the product correctly for a successful execution.

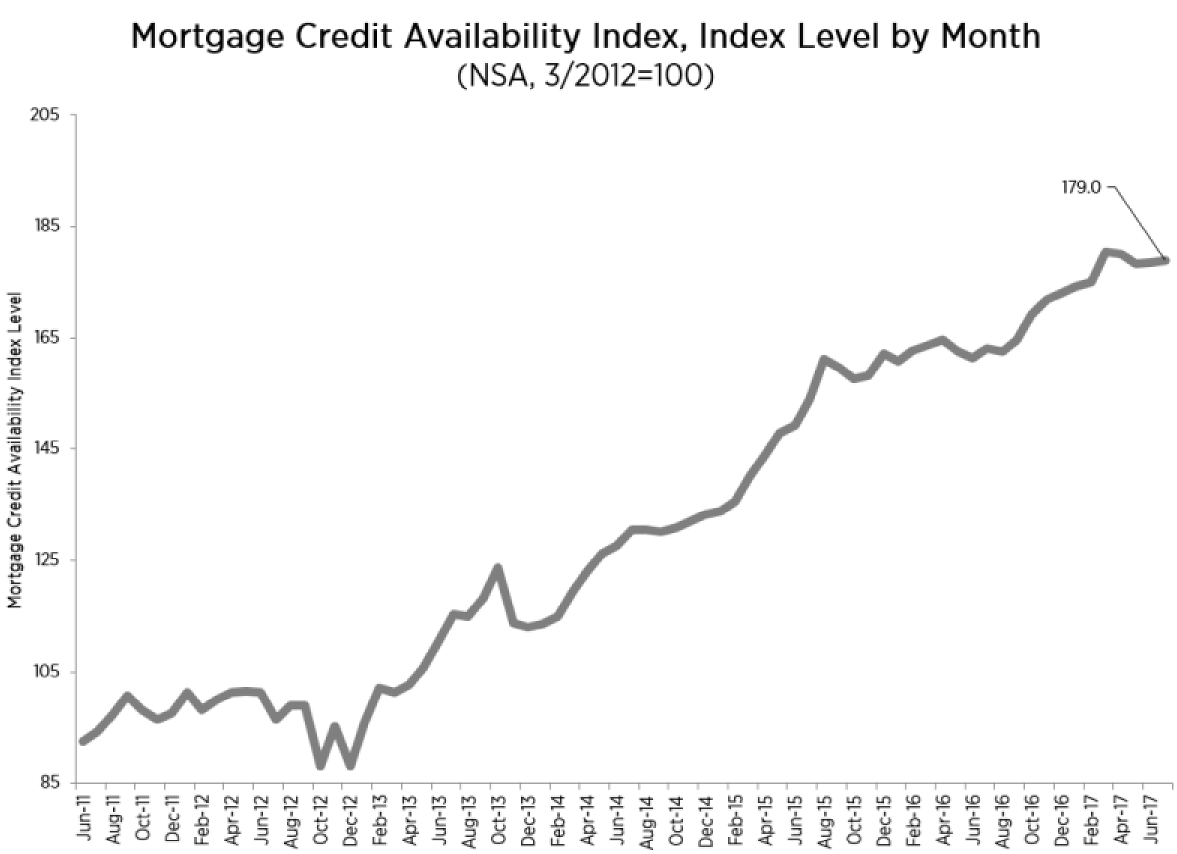


Figure 1,

The growth we are seeing in Non-QM derives from both credit as well as collateral expansion. Borrowers with more severe credit defects as well are obtaining financing at higher LTVs than previously. Additionally, higher LTVs for strong borrowers who may not have income documentation or citizenship to qualify for Agency financing. **See figure 1.**

Pricing of Whole Loans in 2017

Non-Performing

In early 2017 there was a 3-5% bump in pricing that Buyers were willing to pay for Non-Performing Whole Loans. With bench mark pricing centering around upper 50s to low 60s through 2016, there were a number of larger transactions in the market that were well though this pricing. MIAC executed several trades in NPLs at the mid-60s+ level for Banks and Funds. NPLs are a very diverse market and it is difficult to draw direct correlations from one transaction to the next, however it widely agreed that demand outstripped supply earlier this year.

More recently, there is increasing demand and supply, although robust, appears to broadly represent the "tails" of the market. There is currently a large ~$1b trade in the market from a bank that represents one the largest, non-government, transactions this year. When this clears the market, we will have additional color, and would be glad to discuss.

Non-Agency

With the increased demand for yield by depositories there is a greater money supply for borrowers outside of traditional Agency lending. MIAC sees this manifest in multiple ways; both an Increase in the number of lenders/banks that are willing originate a portfolio product as well as expansion of the credit box that is available. 90 LTV loans are much more common than last year, when 80% was generally the ceiling and 65% in many cases.

Pricing has improved for the consumer, this is due to a number of reasons. In addition to the increase in willingness to lend, as there is a higher level of comfort with regulations in the Non-QM lending space. It was not too long ago that Non-Agency was nearly nonexistent, yet it is fairly common today with increased access to more consumers. Rates are typically 50-150 bps through Agency, with a greater spread as you move further from Agency guides. MIAC currently has two large transactions under contract with 3% yields for short term paper.

Agency

Agency lending is very transparent and is broadly understood. Included in this pricing is the expansion of lending. Agencies are willing purchase higher LTVs and lower credit scores than in 2016. There has been a push to increase home ownership, the easiest way to accomplish this is to lend to borrowers who previously were not credit worthy. The MIAC Agency desk Sells $3-4 billion of mortgages each month, providing significant insight into the market on a daily basis.

Execution of Whole Loan Sales

Buyers and Sellers of mortgage loans should insist on working with trading partners who are seasoned in transacting, performing valuation, and hedging as diverse a population of mortgage products as possible, with optimal results. This includes Agency-eligible pricing execution, seasoned mortgage performing, Prime Jumbo, Hybrids, RPL's, NPL's, HELOC, Reverse mortgage portfolio valuations, and hedging of a diverse population of mortgage products. It is important to work with a partner that sees as much trading and analytic activity as MIAC, which, by virtue of the breadth of its business activities, has frequent contact with most of the largest originators, funds, banks, and portfolio companies.

The most efficient traders must gather the current market intelligence needed to identify and engage the best execution for a given trade. There are timing considerations, external events that affect a buyer's ability to focus on a trade, as well as other market considerations. This includes an intimate understanding of firms' business models on both the buy and sell side, as well as their pricing requirements and investors' "appetites." Some dealmakers have, at best, a cursory level of understanding of investors' objectives. The lack of depth of understanding often yields a sale that has been put out so widely (shown to too many unqualified buyers) that it becomes a trade that many serious funds will avoid.

Best execution comes from a complete understanding of the seller's needs, both in terms of price and timing, and the credit and liquidity nuances of the portfolio. The dealmaker you work with must understand these nuances and match the trade with a proper number of serious buyers who will focus on the trade with a no-fade bid that will close with a very high degree of surety.

Brendan Teeley
Senior Vice President, Whole Loan Sales, Trading

Selling Seasoned Residential Whole Loans to the GSEs or Ginnie Mae

Who are the GSEs and Ginnie Mae?

Fannie Mae, the Federal National Mortgage Association (FNMA) and Freddie Mac, the Federal Home Loan Mortgage Corporation (FHLMC) are the established secondary market lenders responsible for the liquidity of the majority of conventional, non-Government, conforming residential whole loans that are originated today and for the past number of decades.

Ginnie Mae, or the Government National Mortgage Association (GNMA) provides liquidity for Government-insured residential mortgages. Those include Federal Housing Administration (FHA), Veterans Administration (VA) and the Rural Housing Administration (RHS/USDA).

For the purpose of this article Fannie Mae, Freddie Mac and Ginnie Mae will be referred to collectively as "Agency" or "Agencies".

The normal process for new Agency-underwritten loans is to originate them and sell or securitize them directly with the Agencies or sell them to an aggregator that would buy the loans and then deliver them to the Agencies themselves. This often happens if the originator does not have their Agency Seller/Servicer authority. There are also instances where banks and credit unions originate loans and hold them in their portfolios. In some cases, this is because the depository institution does not need the cash that they would receive by selling the loans or the securities in the secondary market and they prefer to hold the loans on their books to capture the yield.

If a bank or credit union decides to sell Agency-originated loans that are currently being held in their portfolio, what are their options?

There are circumstances where these depository institutions decide that they would like to sell loans which were originated under Agency Guidelines, and to put that cash to work in other ways or hold the securities in their portfolio, such as when lenders choose to focus on originating different products or divesting of residential whole loans.

If residential loans were originated under Agency guidelines, an institution can start the process of a seasoned or negotiated sale with the Agencies if they are an approved Seller and Servicer with them.

The Ginnie Mae securitization process with seasoned loans is rather simple. For Sellers with loans that were originated under FHA, VA or RHS/USDA guidelines and are currently insured, they can be securitized with Ginnie Mae. All of the same procedures would apply as if the Seller was securitizing loans when newly originated. There are a few caveats for modified loans or those purchased out of a pool to be re-securitized. However, in general it's very similar to delivering loans as if newly originated.

Selling seasoned whole loans to Fannie Mae and Freddie Mac is a much different process than selling to Ginnie Mae. These transactions are commonly referred to as "Seasoned/Negotiated" or 'Bulk' GSE sales and are normally completed while the Seller is also the Servicer (a/k/a servicing retained). There are, however, occasions where Sellers can sell or securitize loans that are serviced by others (SBO). An example of this would be when banks purchase CRA loans from other lending institutions on a servicing retained basis (where the selling institution retains or "holds" the servicing after the loan is sold) and they decide to sell them at a later date.

The Seasoned GSE Process is as follows:

- Bid data file of clean data needs to be put together to show to the GSE's for eligibility and pricing. This file would contain all of the data necessary for the GSE to run through eligibility and pricing models
- Data accuracy is of utmost importance since the data that the GSEs use to bid is what the Seller is providing representations/warrants on.
- GSE will review the data for eligibility and pricing and provide preliminary eligibility and pricing to the Seller: Generally, the minimum bid size with the GSEs is $10MM (this is negotiable)

If the eligible population and bid are acceptable to the Seller, the following steps would then be followed to complete the sale of the loans to the GSE:

- Obtain all data necessary for selling to the GSE
- Work with the document custodian to ensure certification will be timely
- Work through contracting and variances with the GSE. For a negotiated transaction, a separate contract will be prepared for the sale.
- Load the data into the appropriate delivery system and resolve any data-related issues
- Submit the data in the delivery system
- Work with the document custodian to ensure the pools are all certified
- Settlement occurs on chosen settlement date

When selling to the GSEs, Sellers need to understand that they are providing representations and warrants to the GSE Selling Guides[1,2]. The difference is that GSEs are looking at seasoned loans and not new production. Seasoned transactions typically consist of loans seasoned anything beyond twelve months. However, 4+ month production loans can be in seasoned transactions as well.

[1] https://www.fanniemae.com/content/guide/selling/
[2] http://www.freddiemac.com/singlefamily/guide/

The Agencies have assembled teams that are ready to examine seasoned loans and determine what they can and cannot work with in these types of negotiated transactions and have an efficient process that has been in place for decades.

MDS / MIAC professionals maintain longstanding relationships with the Agencies (Fannie Mae, Freddie Mac and Ginnie Mae) in addition to national mortgage loan servicers and mortgage loan custodians. Our clients are able to leverage these relationships in order to maximize their mortgage loan securitization execution. We utilize the MDS proprietary analytic system to audit and produce data uploads for the delivery of mortgage loan data and MSR data to give buyers and sellers the confidence in the underlying product quality on which they are transacting.

Jason Eisendrath
Director, Loan Sale Strategies, MDS - Mortgage Delivery Specialists - Part of MIAC

Superior Integration to FNMA Cash Window in MarketShield® v5.0

Tina Freeman, CFA
Managing Director, Secondary Solutions Group

MIAC's secondary markets trading desks have been enjoying the recent addition of a new, advanced integration to the FNMA Cash Window that is providing us with substantial time savings. We are pleased to announce that this enhancement to our MarketShield® platform is now available for client use.

Our latest release of MarketShield® v5.0 not only includes fully automated pool formation and transmission to the FNMA cash window, it also includes new functionality to manage bulk bids for both buyers and sellers. BuySide Trader will help clients manage their bulk purchase programs, by mapping seller data imports and providing data quality controls, pricing bulk pools directly to the buyer's takeouts, allowing multiple levels of margin management as well as loan-level spiffs, and email integration for communication of bids.

SellSide Trader provides equally robust functionality to bulk sellers, providing easy integration of bulk pool bids into best execution, market movement normalization, as well as email integration for communication of pools to potential buyers.

Danielle Roper, Vice President of our New York trading desk, had this to say:

> "The new FNMA integration feature is a real game changer when it comes to taking down specified commitments. MS Trader automatically queues up the pools according to the best execution and with one click the commitments are executed and final pricing and commitment numbers are loaded back into the system. No more back and forth between the FNMA screen and internal spreadsheets or manually keying in UPB and pass-through rates, and re-confirming the password on each take-down. The new process is much more efficient."

ABOUT MIAC ANALYTICS

For 28 years, Mortgage Industry Advisory Corporation (MIAC) has been the preferred provider of mortgage and asset-backed valuation and hedging software, **MIAC Analytics™**, MSR and whole loan brokerage services, secondary market risk management, and a complete **CECL (Current Expected Credit Loss) solutions.**

MIAC Analytics™ is the most sophisticated mortgage pricing and risk management software suite available. The MIAC Analytics™ suite includes **VeriFi™**, **DR-Surveillance™**, **MIAC CORE™**, and **Vision™** to address FASB's new Current Expected Credit Loss ("**CECL**") requirements with the industries best modeling practices. VeriFi™ is used to support and manage the data quality auditing and review process. DR-Surveillance™ will measure a client's collateral behavior including historical transition roll rates and Time_in_FCL exit curves; and these client specific behaviors are integrated into MIAC CORE™, our loan level credit loss model embedded in our Vision™ cash flow engine and balance sheet model.

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