
Dr. Andy Schell's Mortgage Accounting White Paper Series

Hedging, Fair Value, Market Value, and the IRLC

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1- Every mortgage lender experiences market risk.

The interest rate environment is continuously moving up and down. Each rate movement impacts the value of a mortgage lender's assets and loan commitments. This interest rate movement causes a mortgage lender to experience market risk beginning when the lender issues an interest rate lock commitment (IRLC) to a customer and continues until the loan held for sale (LHFS) is sold. The IRLC protects the consumer from market risk while simultaneously exposing the mortgage lender to market risk. If the rates increase, the future loan revenue will decrease, and the lender may lose money unless they protect their future revenue with a hedging strategy.

The most common hedging strategy deployed by mid-sized mortgage companies is to sell forward TBA-MBS commitments to protect the IRLC exposure and then receive a mandatory delivery commitment to protect the LHFS exposure until it is sold. The purpose of the hedge is to preserve the future gain on sale by establishing a transaction that exhibits the same degree of value change but in the inverse direction relative to a mortgage loan. The secondary marketing department adds enough mark-up into the lock commitment issued to a customer so that the future gain on sale revenue plus or minus the hedging activity will generate enough revenue so that the mortgage company makes a profit.

2- Every mortgage lender receives and issues firm commitments.

The IRLC is a legal commitment presented to a customer to guarantee their rate and fee structure irrespective of subsequent changes in the interest rate environment during the application process. The customer may cancel the lock commitment for any reason at any time, but the mortgage company is contractually obligated

to honor the terms of the IRLC irrespective of price movement. Given the optionality of the IRLC, the option holder (customer) is likely to exercise the contract when the interest rate movement creates a favorable position for them, which likely has the opposite impact on the mortgage company's financial condition.

As an example, as rates rise, the customer is likely to complete the transaction because they want a lower house payment. If rates decline, the consumer holding an IRLC may search for a lower interest rate alternative and cancel the existing lock commitment without consequence. The challenge for the mortgage lender is that when rates fall, the gain in the IRLC is offset by a loss in the hedge position, while at the same time, the customer is likely to cancel the lock, which prevents the gain from realization. If the customer cancels the IRLC, the lender must still settle and pay the hedging losses despite not creating the gain on sale. The trick is not to hedge the IRLCs that are likely to cancel. This is accomplished by implementing a comprehensive analysis using back-testing algorithms to identify the pull-through adjusted pipeline.

3- Every mortgage lender faces market volatility.

When rates fall, the value of the IRLC and LHFS (long position) rise and the value of the hedge (short position) declines based on the amount of the changes in the interest rate environment. The first four months of 2020 presented many challenges, including the situation where a gain in the IRLC should have offset the hedge position loss given the bi-direction value relationship of the IRLC and the hedge position. During April 2020, due to rapidly declining rates, there was a significant increase in the derivative asset that was offset by a loss in the hedge position reflected in the derivative liability.

This market price volatility's impact on off-balance sheet commitments created a significant financial event that supports the FASB's reasoning in the issuance of ASC 815. This pronouncement requires the presentation of off-balance sheet impact from a market change measured following the calculation methodology prescribed in ASC 820. Unfortunately, in many cases during April and May 2020, the IRLC expected gain did not materialize as the loan buyers were unwilling to offer a price sufficient to recover the hedge position loss given the market's extreme volatility. Volatility reflects uncertainty, and uncertain buyers pay less, which the lender should address by increasing the pricing margin or establish longer-term forward commitments or, ideally, deliver into the short position under a delivery vs payment (DVP) structure.

4- Every mortgage lender has off-balance sheet market risk.

ASC 815-10-15-71 requires recognizing the amount of the off-balance sheet market risk exposure from a lender's firm commitments, including the IRLC, the TBA-MBS position, and all mandatory delivery commitments (firm commitments). After Enron imploded from concealing its off-balance sheet commitments, SOX was adopted, and the firm commitments were designated a derivative to force the disclosure of market change exposure. The FASB labeled the mortgage lender's firm commitments derivative financial instruments even though the IRLC specifically does not present derivative characteristics. In fact, the FASB staff originally concluded that the IRLC was not a derivative. Nevertheless, the firm commitments are designated derivatives to require disclosure of fair value and market value change.

Fair value and market value are different concepts identified within the measurement standards presented in ASC 820. A market value is determined from active trading in a public market where the value characteristics, including the settlement prices, are available to the public. In contrast, fair value is the value at which an asset is exchanged between a willing buyer and a willing seller based on fundamental analysis, including net future cash flow following the mechanics outlined in ASC 820.

A mortgage lender's hedge advisor typically measures the value of firm commitments; although, there is a critical caveat. The hedge advisor reports do not differentiate between market value and fair value. Most of the hedge reports' content is based on the active trading of a Mortgage-Backed Security and the TBA-MBS forward contracts, both of which trade on active, public markets. If trading details are hidden or unobservable or

value drivers are unobservable, then the market is not public and fair value must be applied. Such is the case for the IRLC. The IRLC has no public market and must receive a fair value assessment under the ASC 820 fair value hierarchy as a Level 3 input, which is not presented in the hedge reports.

Any mortgage company CFO should be cautioned when relying on the IRLC "market" value identified in the hedge report, given the ASC 820 fair value measurement requirement that contradicts such reliance and specifically requires a fair value assessment. The important point for CFOs to accept is that the fair value assessment is based on the IRLC's value as a firm commitment at month-end. The IRLC is always only a firm commitment, not a tradable security. The IRLC is extinguished when the loan is closed and the new LHFS is an asset valued as a level 2 input. If the LHFS is delivered into a mortgage-backed security, it is then traded on an active market as a level 1 input with a market value assessment. It is never correct to value an IRLC as a security. The IRLC must be valued as a firm commitment based on the price a willing buyer would pay to purchase a firm commitment.

5- Every mortgage lender must value a derivative asset.

The reporting value of the long and short positions are assessed and should result in substantially offsetting amounts. If the long position has a gain, then the short position has a loss. A gain is reported as a derivative asset, and any loss is reported as a derivative liability. The long and short positions are never netted together. The reporting value of the IRLC and the hedge position are assessed each month. The IRLC and mandatory delivery commitments receive a fair value assessment because there is neither an active nor public market to identify a market value. The value of the mandatory commitments for the LHFS are known, which often supports a Level 2 fair value measurement. The TBA-MBS receives a Level 1 market value assessment given the active and public market. The IRLC receives a Level 3 fair value measurement, which likely requires a fair value model.

The components subject to fair value measurement applied under the ASC 820 hierarchy for Level 3 inputs will likely require a model that replicates the events of a hypothetical sale to an independent third party to establish the net cash flow value of the IRLC, which includes all conversion costs. It turns out that the AICPA has a model for this purpose. The derivative asset is an intangible asset, and the AICPA SSVS model guidance is designed to value an intangible asset, like the IRLC. To find the AICPA model description, launch a browser search for AICPA SSVS.

The AICPA SSVS fair value model for the IRLC is based on the anticipated net future cash flow. Net future cash flow analysis is the same finance theory used to value the MSR, although the short duration of the IRLC life-cycle renders discounting immaterial. The hypothetical buyer's costs to convert the IRLC into a salable loan are examined and allocated based on the pipeline's status code elements identified by the hedge advisor. As with any fair value simulation, the seller's costs are irrelevant in the buyer's calculation. For purposes of the fair value model inputs, the seller's costs may be aligned to the status code silos irrespective of period or product cost to determine the cash flow value of the IRLC. Additionally, ASC 815-10-15-139 addresses the applicability of conversion costs, which aligns with the AICPA SSVS net cash flow approach.

6- Every mortgage lender must assess the ASC 820 calculation's reasonableness.

The cash flow value of the IRLC is then adjusted by the market movement change in the TBA-MBS short position to reflect the recordable value for the derivative asset or the derivative liability. The derivative asset value of the IRLC net cash flow value from the AICPA model may be 75bp, plus or minus the hedge position change. If the hedge is a 1% loss, then the derivative asset should have an offsetting value of approximately 1.75% resulting from the offsetting value change plus the net cash flow value of the IRLC. At the very least, all of the computational elements must be presented in the audit or interim financial footnotes so the

reader can follow the bread crumb trail to understand the math behind the derivative asset and derivative liability amounts.

7- Author's Note about Fair Value and IRLC

A note about volatility. If interest rates rise quickly, creating a gain in the short position, the IRLC market change loss may be more than the cash flow value of the IRLC, resulting in the IRLC reported as a derivative liability.

And a note about complexity. This topic may generate an emotional response as a more advanced awareness of this topic reveals a necessary change in past practice. The information presented above has passed the scrutiny of the scholarly community and the review by Ph.D. CPAs that are not invested in a prior conclusion. Citations are omitted given the informal structure of this publication. While I am confident the IRLC valuation method presented in this paper is the most accurate method, the ultimate fair value measurement of a Level 3 input is the Certified Public Accountant's representation that the financial statements are presented fairly upon signing the audit report.

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About: Dr. Andy Schell, DBA (Ph.D.), MSML, MBA, CPA/CFF, CMB

Dr. Schell is CEO, Managing Partner, and Co-Founder of Mortgage Banking Solutions and MBS Financial Services ("MBS"), based in Austin, Texas. He is known for his ability to turn "vision into reality" and "chaos into order" as he finds creative solutions to address his clients' challenges. He primarily supports regulated depositories in mortgage finance and sophisticated independent mortgage lenders to address revenue stability, technology enhancement, and Workflow Efficiency. Andy is a finance guy, a CPA, (there is a difference), and a musician. It is the combination of his creativity, experience, and education that enables him to create business strategies that will lead to his client's success.

Dr. Schell's finance experience began trading marketable securities in 1980 at a Dallas, Texas-based Wall Street firm and then continued throughout his career spanning four decades. His activities in finance include trading Mortgage-Backed Securities and Options on T-Bond Futures as a risk management tactic, directing the \$35 billion securities settlement activities for Bank of America, and supporting the bank's quantitative assessment of implied volatility for the Monte Carlo simulation model. His finance education began with a bachelor's degree in banking and finance and continued at the SMU graduate school of banking and the University of Chicago's options trading program.

Dr. Schell's accounting expertise is equally expansive, including a master's in accounting, a CPA certificate licensed in Texas with public accounting experience in Dallas, and a doctorate in business strategy with a doctoral dissertation on the value of financial derivatives. He is also a Certified Mortgage Banker awarded from the Mortgage Bankers Association in addition to holding the designation as a Certified Public Accountant licensed in Texas.

Dr. Schell's 40 years of experience, professional designations, CPA/CFF, CMB, and academic credentials, including a terminal degree that established the title Doctor Schell, collectively provide the foundation for him to authoritatively address the topics presented in this

white paper. Other white papers and articles by Dr. Schell are available directly at www.DoctorSchell.com

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