

Hedge Accounting – A Better Way to Hedge Interest Rate Risk

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Dear Readers,

Good news, bad news. The good news is that you will learn something from this article. The bad news is that it's about accounting for derivatives. For those seeking the "cliffs notes" version, the ensuing section will summarize the article in one paragraph. For those gluttons for punishment, please proceed from the section entitled 'Hedge Accounting – A Better Way to Hedge Interest Rate Risk.'

Cliffs Notes

Fair value hedge accounting allows financial institutions to hedge the value of balance sheet assets and reduce earnings volatility in kind. This is called the Portfolio Layer ("PL") method. Its name comes from the idea that, within a given pool of prepayable fixed-rate assets, the portion being hedged is presumed to be the 'portfolio layer' affected last by prepayments such as early paydowns, defaults and refinancings. The PL method offers institutions a path for navigating onerous hedge accounting requirements, creating more effective hedge relationships that better align with the risk management objectives of the institution.

Hedge Accounting – A Better Way to Hedge Interest Rate Risk

History and Background

Financial institutions have been managing interest rate risk ("IRR") for ages. For most, IRR is simply this: the potential for a meaningful decline in the economic value of equity and/or a significant reduction in net interest margin ("NIM"). Managing IRR is a tightrope walk for institutions trying to find the optimal balance between their lending and funding activities, and all while trying to satisfy the demands of borrowers and depositors.

Often, there is a directional bias with interest rates. For example, a bank with a glut of fixed-rate investments might shudder at the thought of interest rates rising. In this instance, rising rates would

cause a commensurate increase in funding costs, which would decrease NIM. Conversely, a bank with mostly floating rate commercial loans may not fear rising rates as much as rates decreasing. Here, a rate decline would reduce cash inflows and shrink NIM.



NIM is one way to think of interest rate risk, capital is another. The Internal Capital Adequacy Process is one facet of a broader framework (the “Basel Framework,” inclusive of Basel standards I, II, III and IV) created by the Basel Committee on Banking Supervision to address capital shortfalls in the banking industry. The Basel Framework lays out a labyrinth of requirements to, among other things, measure and report the amount of risk from operating and lending activities. More importantly, the Basel Framework provides transparency into the adequacy (or lack thereof) of loss absorbing capital on-hand to cover the risk-weighted assets (“RWA”) of the institution. The RWA calculation for IRR is made by projecting expected future cash inflows from assets and expected future cash outflows from liabilities. These net future cash flows are discounted to the present to arrive at the economic value of equity. The lower the equity value, the more capital is needed to cover the IRR-based RWA.

It is for these reasons (and a whole host of others) that institutions need tools to mitigate IRR effectively. This is where institutions have benefited from hedging with derivatives.

Derivatives started gaining popularity as hedging tools in the 80s and financial institutions were exploring better ways to account for them. The Financial Accounting Standards Board (“FASB”) responded with its first hedge accounting standard in 1984 with FAS topic 80, *Accounting for Futures*. Fast forward to the 90’s and both the use and complexity of derivatives were increasing in lockstep with customer/borrower



demand. FASB created the Derivatives Implementation Group (the “Dig”) to serve as advisor and help usher in FAS topic 133, which is what we know today as Accounting Standards Codification topic 815 *Derivatives and Hedging*, or “hedge accounting.”

What is hedge accounting? It is the way institutions record in their financial statements the change in gains or losses from the revaluation of derivatives.

Derivatives used for hedging are designated for accounting purposes as a hedge of either assets or liabilities. A hedge of fixed-rate assets or liabilities is considered a fair value hedge, or a hedge of the variability in the value of those assets or liabilities. A hedge of floating-rate assets or liabilities is considered a cash flow hedge, or a hedge of the variability in the cash flows from those assets or liabilities.

The benefit of hedge accounting is that users can offset adverse changes in value or cash flows between the hedging derivative and the hedged item(s). Journal entries recorded in the income statement are timed to reflect amounts of value or cash flow changes between the hedging derivative and hedged item in the same period, thereby significantly reducing volatility in earnings.

Hedge accounting can be burdensome for institutions. It requires vigilance and dedicated resources to manage activities such as documentation, hedge effectiveness testing, monitoring hedged items and recording journal entries. Addressing these requirements is often a coordinated effort across team members in lending, treasury, accounting and funding departments. As such, institutions will generally opt for the hedge accounting path of least resistance or avoid hedge accounting altogether.

While the concept of hedging IRR has evolved over time, institutions continue to languish with how they account for derivatives. For many, hedging the variability of cash outflows from short-term liabilities like certificates of deposit, money market accounts and Federal funding programs has been the easiest approach. Using this approach, an institution can execute a derivative such as an interest rate swap to extend the duration on its funding sources in support of providing longer-term loans to borrowers. The interest rate swap also exchanges floating for fixed-rates, which effectively locks-in the cost of funds – a feature that preserves NIM for institutions with a rising rates bias.

Hedging short-term liabilities can be limiting. Institutions may feel pressure to reprice deposits consistent with changes in market rates to reinforce a more effective hedge relationship when they would prefer to lag the market or hold rates flat for depositor benefit. Having established a hedge relationship may also deprive an institution the opportunity to de-lever the balance sheet. For example, an institution may desire to curtail an expensive advance program from the Federal Home Loan Bank in favor of more cost-effective funding sources. Often, hedging short-term liabilities does not align with the risk management objectives of most institutions who profess that the biggest source of IRR on the balance sheet stems from its assets, not liabilities.

So why aren't more institutions hedging assets? After the global financial crisis in 2009, interest rates fell to historic lows. As the economy recovered, the borrower appetite for more favorable credit terms and lower interest payments followed suit, particularly with fixed-rate mortgages. This burgeoning demand for fixed-rate loans has ballooned institutional asset balances, and IRR along with it.

It wasn't too long ago when hedging the fair value of fixed-rate assets was a bear. Thanks to our friends at FASB, and among other things, fair value hedgers were required to do the following:

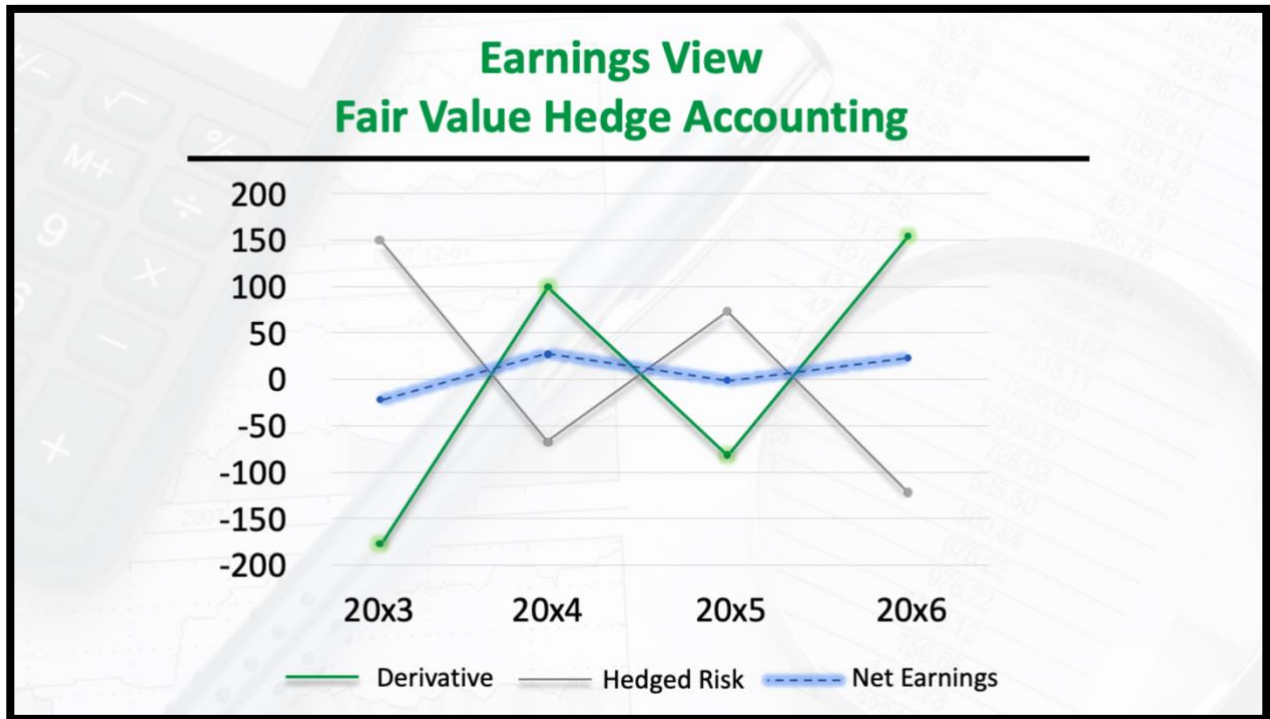
- Identify a portfolio of homogeneous loans based on criteria including but not limited to seasonality, term-to-maturity, geography, credit score, and loan type.
- Test homogeneity (also known as the "Similar Assets" test) by proving the value of individual loans in a portfolio changed by no more than +/- 1% to 2% from the value change of the entire portfolio.
- Assess hedge effectiveness by comparing the loan portfolio value change relative to the value change of the hedging instrument(s).

The requirements were nearly impossible to meet. By order of mention, maintaining portfolios of homogeneous loans was challenging depending on the size and transactional volume for the institution, so much so that many couldn't get hedge accounting off the ground. If loan uniformity didn't derail the process, the Similar Assets test almost always caused hedge accounting to fail. With varying prepayment speeds, durations, credit risk and coupons, comparing revaluation of individual loans to portfolios yielded dramatically different results.

If by some stroke of luck an institution graduated from the Similar Assets test, it almost always failed the effectiveness assessment. Hedge effectiveness was measured by comparing the value of a loan portfolio

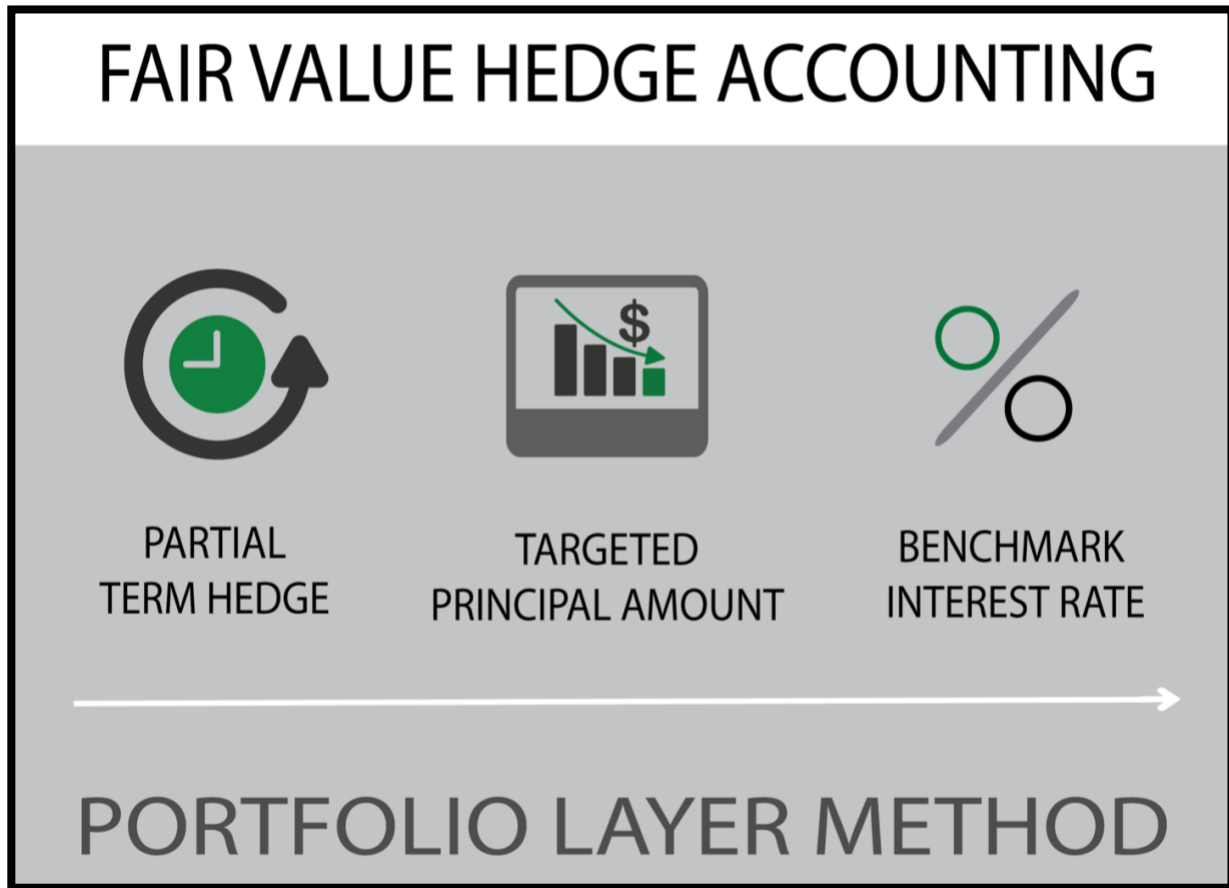
with that of a hedging instrument. As you can imagine, the loan portfolio value includes both credit risk and prepayment assumptions that simply don't exist within, for example, the value of an interest rate swap, or at least not in the same way. Needless to say, the results were abysmal and there was very little traction for fair value hedging within financial institutions. Enter the unsung hero – FASB...to the rescue!?

Hedge Accounting and the Portfolio Layer method



FASB issued an update in August 2017 that has transformed the way financial institutions hedge IRR on the balance sheet. Known in the industry as Accounting Standards Update (“ASU”) 2017-12, it introduced a new method for measuring IRR and accounting for hedges of prepayable fixed-rate assets, initially called the Last of Layer method. FASB then updated this methodology in March 2022 through ASU 2022-01 by providing greater clarity to users and adjusting the name to Portfolio Layer (“PL”) method. Put simply, ASU 2017-12 and 2022-01 (collectively the “ASUs”) allow financial institutions to hedge the value of their fixed-rate assets with greater ease and predictability.

For financial institutions with meaningful exposure to fixed-rate assets, the PL method achieves three key objectives: 1) protects the value of their capital, 2) mitigates duration risk in assets, and 3) reduces income statement volatility caused by mark-to-market gains and losses from the periodic revaluation of derivatives.

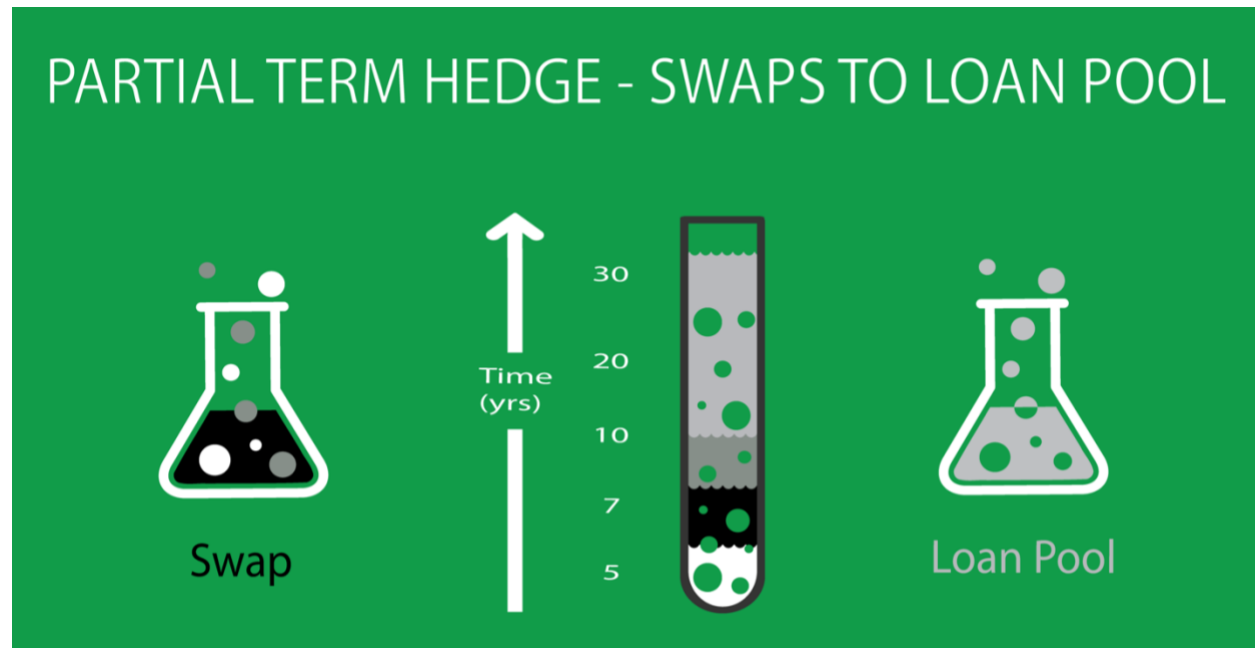


The PL method can be distilled into three key pieces: 1) hedging a partial-term, 2) targeting a principal amount, and 3) designating the benchmark interest rate. Each of these pieces is necessary to achieve an effective fair value hedge. The ensuing section will cover all three parts and address the benefits relative to ‘pre-2017’ fair value hedge accounting.

For ease of explanation, we will assume an institution desires to hedge a \$50M portfolio of 30-year fixed-rate mortgage loans (the “hedged pool”) with the following derivatives:

- 10-year, \$10M notional pay-fixed, receive-float interest rate swap (a “Swap”).
- 7-year, \$10M notional Swap
- 5-year, \$10M notional Swap

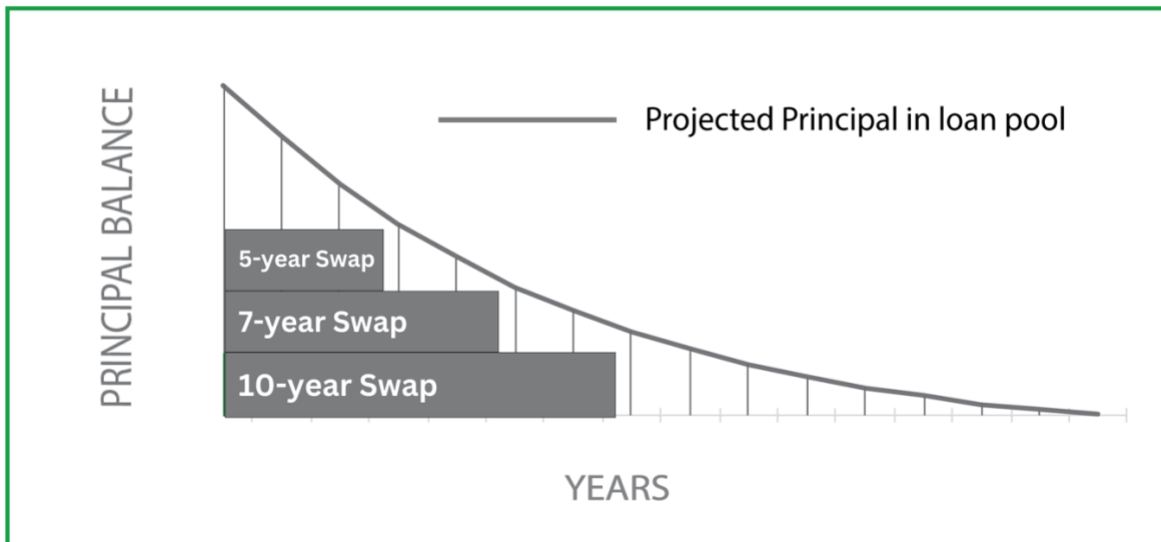
Hedging a partial term



Under the ASUs, institutions can hedge a partial term. Meaning, users can choose to hedge, for example, 10 years (and/or seven years, five years) of IRR. This partial term designation is an important distinction to make, especially when the term-to-maturity of each individual loan with the hedged pool is 10 years or greater. The implication is that changes in value of the hedged pool are only evaluated based on cash flows going out 10 years instead of 30. Thus, we're removing 20 years-worth of duration, convexity, time value and other sources of ineffectiveness from the equation. This makes quantitative tests of Similar Assets and hedge effectiveness far more palatable for institutions pursuing fair value hedge accounting, which results in a more effective hedge relationship.

Targeting a principal amount

TARGETED PRINCIPAL AMOUNT



The frustrating reality when hedging consumer loans, or fixed-rate investments generally, is that they're often prepayable without penalty. In other words, the amount of principal outstanding is dynamic at any given time due to scheduled prepayments, unanticipated paydowns, borrower defaults, refinancings and other factors. It's a moving target.

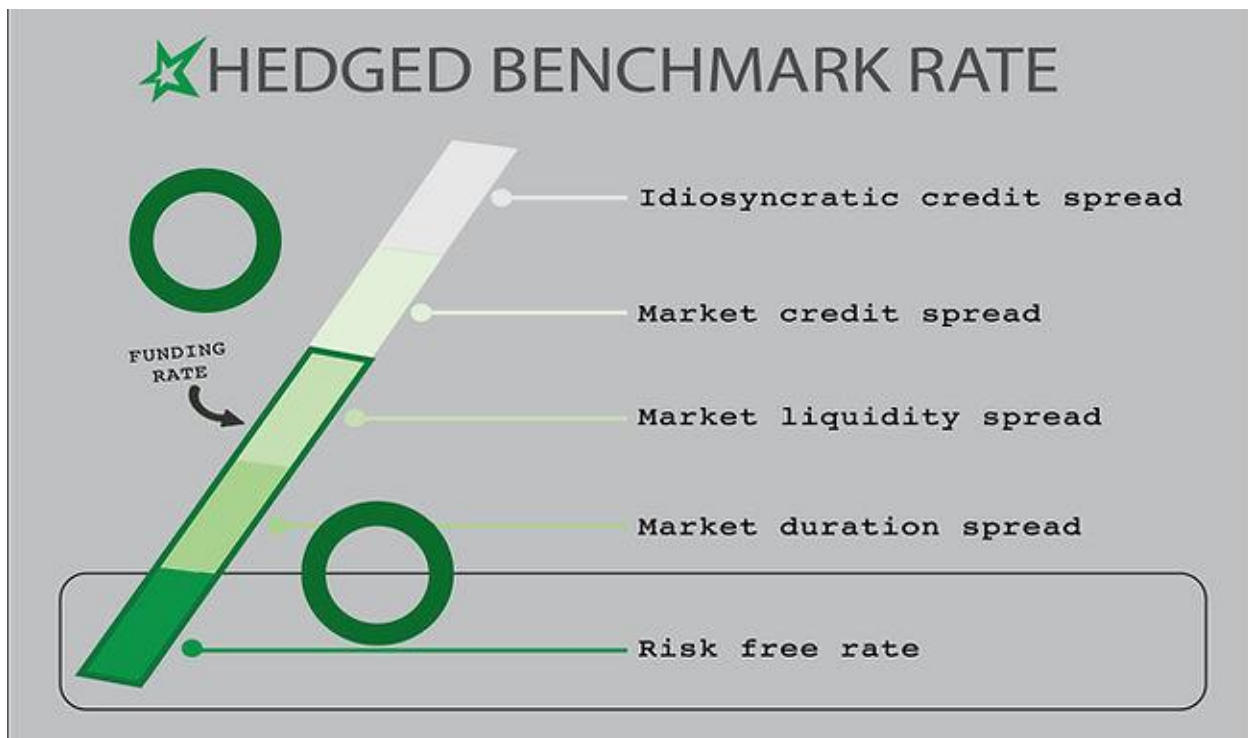
The PL method allows entities to identify a principal tranche or "layer" within the hedged pool. Repeating our assumptions from above, we're hedging only \$30M of the \$50M hedged pool. Thus, the expectation is that there will be at least \$10M principal outstanding in the hedged pool at the end of the 10-year hedge horizon. Of course, this assertion must be proven both at initial hedge execution and ongoing (at least quarterly) throughout the life of the hedge to determine whether there are any actual or anticipated breaches of hedged principal – indicating a current or prospective over-hedged outcome. Typically, this looks and feels like a prepayment analysis in which, for example, Constant Prepayment Rates ("CPR") are used as inputs in base and stress scenarios to determine what outstanding principal might look like based on the composition of the loan portfolio. These scenarios can evaluate outstanding principal from 1 year to 30 years out.

Users hope to clear this step with flying colors, meaning, the prepayment analysis shows that there is sufficient principal throughout the life of the hedge. If it doesn't work and the analysis indicates projected principal deficiencies, we have a few options on how to proceed. Assuming the hedge has *not* been executed, we can lower the hedge ratio from 60% (\$30M divided by \$50M) by 1) reducing the notional on

the Swap or 2) adding more loans to the hedged pool. Now, if we flip the script and assume the hedges have already been executed, we can attempt to sustain the hedge relationship by incorporating the amount of the anticipated principal reduction into the effectiveness assessment and if it passes, we move forward, or we can de-designate the current hedge and re-designate the Swap to a new pool of loans.

If it does work and prepayment analysis shows that we're in the clear, the new accounting guidance allows us to remove prepayment assumptions entirely from the valuation process and hedge effectiveness assessment (it also benefits our consideration of homogeneity, which will be addressed later...). This reflects the PL methodology's namesake as institutions can presume that this principal amount relates solely to the targeted "layers," which we have proven to be unaffected by prepayment events.

Designating a benchmark interest rate



What is in a coupon for fixed-rate loans? For some institutions, there is a central nervous system, or support desk, that calculates funding costs to determine its "hurdle" rate. This hurdle rate is disseminated throughout the institution so that consumer lenders, commercial lenders, equipment financiers, derivative marketers and others with credit-related responsibilities can have a sense for the minimum lending rate and what their margin will look like. Other entities may simply begin with a risk-free forward rate or yield curve (e.g., the 10-year US Treasury Rate) that correlates with their funding sources and then they layer spread surcharges on that risk-free rate such as market duration spreads and customer credit spreads. In any case, fixed-rates identified at an individual loan level can vary greatly when, for example,

they have differing credit risk factors or maturities. Historically, these differences have contributed meaningfully to failed hedge accounting relationships.

A similar view can be taken with fixed-income securities in an investment portfolio. For example, corporate and agency-issued bonds, whose yields can trade at a meaningful premium to comparable paper issued by the US Treasury, are common sources of IRR on the balance sheet. These are investments designated as available-for-sale (“AFS”) that are eligible for fair value hedge accounting. Additionally, ASU 2022-01 offers a one-time opportunity for institutions to transition their held-to-maturity (“HTM”) investments to the AFS category within 30-days of adopting the ASUs. Like loans, hedging a portfolio of fixed-rate investments was seen as a herculean effort and was seldom pursued by institutions in the past.

In either case – fixed-rate loans or fixed-income securities – the ASUs allow users to identify, as the hedged risk, the benchmark rate component of the contractual coupon cash flows of the hedged pool. In other words, embedded in the fixed rate of every asset is a benchmark component that can be designated for fair value hedge accounting purposes. If the index underlying the floating-rate leg of the Swap was the Effective Federal Funds rate, we could designate the break-even coupon of the Swap as the benchmark rate being hedged. In this way, the benchmark rate is presumed to be the same for every single asset within the hedged pool.

Designating prepayable, fixed-rate loans or investments in this way helps reduce the burden of the Similar Assets test. In fact, the ASU allows users to qualitatively assert that the loan pool is homogenous provided the PL method has been employed and all parts – hedging partial term, targeting principal amount, and designating benchmark rate – have been documented accordingly. No need for an arbitrary and painful Similar Assets test! Hedge effectiveness is also made easier by removing fussy prepayment speed inputs from the valuation process, resulting in more favorable effectiveness outcomes. In summary, by applying the PL method, users can more easily qualify for hedge accounting and establish more effective hedge relationships.

The PL method is not for the faint of heart. This accounting guidance is dense and complicated even from the perspective of savvy hedge accounting consultants and/or risk practitioners, let alone the average CPA. Let HedgeStar be your guide and help you navigate the complexities of ASU 2017-12 and ASU 2022-01, and benefit from these groundbreaking standards.