

Interest Rate Risk And Swap

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Introduction

Interest-rate risk is the possibility that changes in market rates will alter borrowing costs, investment income, asset values, liability values, or cash flows. The risk is especially important for multinational enterprises because debt may be issued in different currencies, maturities, and fixed or floating structures while operating revenues respond differently to market conditions. Managing exposure begins with the underlying economics rather than with a derivative. Treasury must identify principal, currency, reference rate, reset date, maturity, optionality, and the cash-flow objective before selecting a hedge. Modern practice also requires moving beyond legacy LIBOR assumptions. The Commodity Futures Trading Commission changed its swap-clearing framework to remove specified LIBOR and other interbank-offered-rate classes and replace them with swaps referencing overnight, nearly risk-free rates (CFTC, 2022). In U.S. dollars, SOFR has become a central reference rate, while sterling and euro markets use alternatives such as SONIA and €STR. The transition matters because benchmark conventions, spread adjustments, compounding, and fallback language can create basis risk even after an old LIBOR contract has been replaced.

Sources of Interest-Rate and Repricing Risk

Interest-rate exposure takes several forms, and management must distinguish them before deciding what to hedge. Floating-rate borrowing creates direct cash-flow risk because each reset can change interest expense. Fixed-rate debt provides payment stability but creates opportunity cost if market rates fall and the company remains locked into a higher coupon. Fixed-rate investments can lose market value when rates rise, while short-term deposits may produce less income when rates fall. Repricing risk arises when assets and liabilities reset or mature at different times. A company may finance a long-lived asset with debt that reprices every three months, causing operating returns to remain stable while interest expense moves repeatedly. Maturity gaps, duration, sensitivity analysis, and scenario testing help reveal such mismatches (Hull, 2022). Treasury should also separate interest-rate risk from funding-liquidity risk. A derivative can lock the rate on future borrowing but cannot guarantee that lenders will provide principal when a facility expires. Committed credit lines, staggered maturities, liquidity reserves, and diversified funding sources therefore complement derivatives rather than being replaced by them.

FRAs and Interest-Rate Futures

Forward-rate agreements and interest-rate futures are useful when a company wants to reduce uncertainty about a future borrowing period. In a forward-rate agreement, counterparties settle the difference between an agreed rate and a future market rate for a defined notional amount and period; the notional principal normally serves only as a calculation base. If rates rise, the settlement can offset part of the higher borrowing cost, while falling rates can reduce actual loan expense even if the company owes under the FRA. Interest-rate futures provide a related hedge through standardized exchange-traded contracts with central clearing and daily margin. Standardization improves liquidity but creates basis risk when the available contract does not match the company's exact benchmark, date, amount, or maturity. Futures also create liquidity demands because gains and losses are settled through margin before the economic benefit of the underlying exposure may be realized. A hedge can therefore be effective over its full life while still creating short-term cash pressure. Treasury managers must evaluate collateral and liquidity capacity alongside the expected final rate outcome.

Fixed-for-Floating and Cross-Currency Swaps

A plain-vanilla interest-rate swap reshapes cash flows by exchanging fixed and floating interest streams calculated on a notional principal. The CFTC defines this class of transaction around the exchange of interest-payment streams, commonly fixed against floating, on specified dates (CFTC, n.d.). A borrower with floating-rate debt can pay fixed and receive floating under the swap, allowing the floating receipt to offset much of the loan's variable interest and leaving a substantially fixed net cost. The opposite structure can convert fixed-rate debt into floating exposure. Standard swaps are often more liquid than highly customized structures, but they are not risk free. Counterparty credit, collateral, basis, legal, accounting, operational, and termination risks remain. Cross-currency swaps add another layer by exchanging cash flows in different currencies and, in many structures, principal at inception and maturity. They can align financing with foreign-currency revenue, but they introduce cross-currency basis, multiple yield curves, settlement risk, and more complex documentation. Modern contract definitions and fallback conventions are standardized through frameworks such as ISDA's 2021 Interest Rate Derivatives Definitions (ISDA, 2021).

Clearing, Collateral, and Accounting

Post-financial-crisis clearing and collateral rules change the way swap risk is experienced. Certain classes of interest-rate swaps must be cleared through derivatives clearing organizations under the CFTC framework, and the 2022 rule updated covered classes to reflect the transition away from LIBOR (CFTC, 2022). Central clearing reduces some bilateral counterparty exposure but does not eliminate risk; it converts part of that exposure into margin, liquidity, and central-counterparty dependencies. Variation-margin calls can create immediate cash demands when the market moves adversely, even

if the derivative offsets a longer-term change in debt cost. Bilateral arrangements likewise need credit limits, collateral agreements, netting provisions, and legally effective documentation. Accounting introduces another dimension because derivatives are measured at fair value and may create earnings volatility unless hedge-accounting requirements are satisfied. Management should identify the hedged item, instrument, risk, and method of assessing effectiveness before the transaction. An accounting gain or loss should never be mistaken for the economic success of the hedge; performance must be evaluated on the combined debt-and-derivative outcome.

A Practical Treasury Process

A practical treasury process begins with an inventory of loans, bonds, leases, deposits, derivatives, and forecast financing mapped by currency, principal, benchmark, reset date, maturity, optionality, covenant, and counterparty. Scenario analysis can then test parallel rate changes, yield-curve steepening, benchmark divergence, refinancing stress, and currency effects. The objective is not to predict one future rate but to understand how the organization performs across plausible conditions. Management should decide how much variability is acceptable and consider natural hedges or debt restructuring before adding derivatives. When a derivative is appropriate, competitive quotations, independent valuation, approved counterparties, legal review, collateral planning, and operational controls are necessary. Monitoring continues after execution because debt balances, acquisitions, revenue currencies, benchmark conventions, or refinancing plans can change. A hedge sized correctly at inception can become an over-hedge or speculative position when the underlying exposure disappears. Treasury policy should therefore set limits, reporting responsibilities, escalation rules, and review frequency so that instruments remain connected with genuine business risk throughout their life.

Conclusion

Interest-rate swaps, FRAs, futures, and cross-currency swaps are valuable because they allow companies to reshape financing risk without replacing every underlying obligation. Their effectiveness depends on accurate exposure analysis rather than on instrument sophistication. Floating-rate debt may be converted toward fixed exposure through a pay-fixed swap; fixed debt can be made more variable; future borrowing periods can be protected through FRAs or futures; and currency mismatches can be addressed through cross-currency structures. Modern management must also reflect the post-LIBOR environment, clearing obligations, collateral liquidity, basis risk, and hedge documentation. The best hedge is not automatically the cheapest transaction or the one that produces the smoothest accounting result. It is the structure that matches the company's real cash-flow objective and continues to perform acceptably under adverse scenarios. A disciplined treasury function therefore integrates funding strategy, liquidity reserves, scenario analysis, legal documentation, counterparty management, accounting, and continuous monitoring. Derivatives reduce selected uncertainties; they do not remove the need for judgment about leverage, maturity,

currency, and the organization's capacity to absorb market change.

References

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