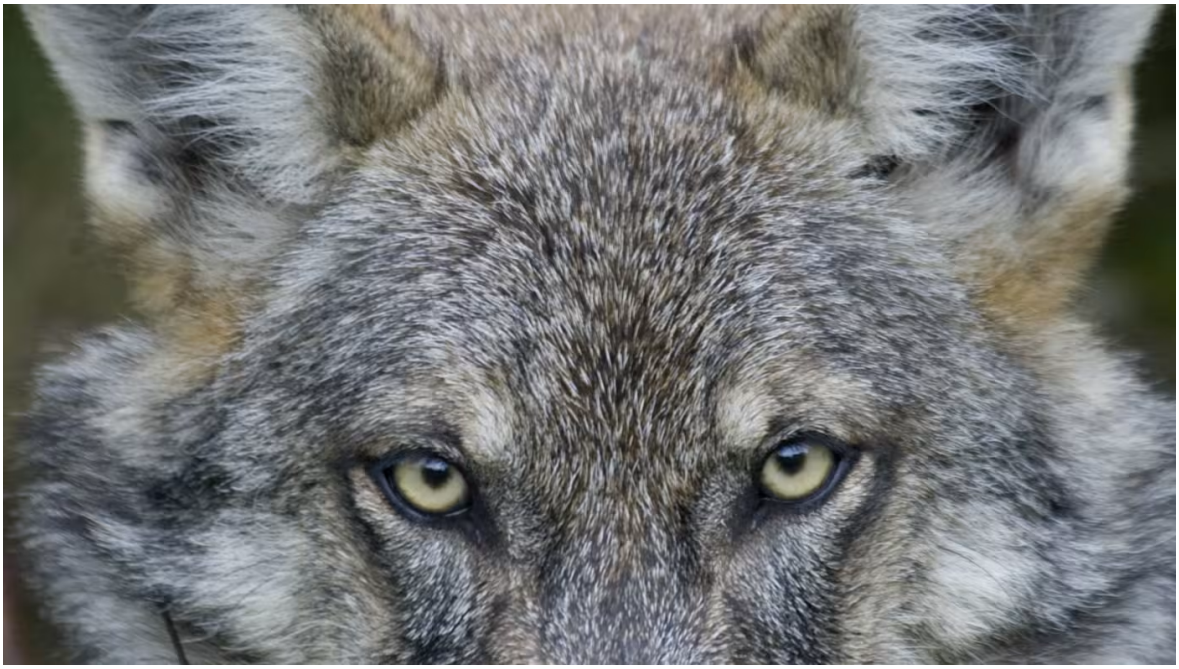
FT Alphaville Derivatives

Crunch time for LOBO

If this dog were an option, would it be exercised?



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Nicholas Dunbar 7 HOURS AGO

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There are two kinds of options in finance. There are those traded as financial instruments, and priced using the Black-Scholes formula or more complex equivalents. Then there are options embedded in financial contracts, which are not traded and have to be modelled.

At the 50th anniversary of Fischer Black and Myron Scholes' groundbreaking paper in 1973, the first kind of options has become background noise in the financial system, with trillion-dollar trading volume and market size. But the second kind of option only rears its head when something unexpected happens — not the volatility that is priced by the market, but a sea-change in conditions that affects everything. The kind of change that makes people ask, "what are my options?"

Right now, that change is rising interest rates, which has had a massive impact on anyone who owns bonds or investments that resemble them. The longer dated the bond, the worse it gets. A UK gilt that was issued at the start of 2022, maturing in 2073, has lost two-thirds of its value. It's hard to believe that UK institutions have liabilities longer than that, but they do.

Unlike gilts, these liabilities are no longer being created. They are called legacy assets or, more accurately, dogs of the financial system that no one wants to talk about any more.

Since 2014 I've been looking at a kind of bank loan once popular in UK local government: the Lender Option Borrower Option or LOBO loan. With maturities going up to 2078, their features can be summarised succinctly. At specific dates, either yearly or at longer intervals, the lender has the option to increase the interest rate. The borrower either can accept the increase or choose to repay the loan early (this is the "borrower option").

About £15bn of these loans were taken out by councils between 2001 and 2011, of which about £8.6bn made it into the Risky Finance database. During this LOBO boom, the banks that made the loans treated those embedded options as being the first of my two categories above, namely that they could be priced and traded.

This is the world of Steve Blyth's book, *An Introduction to Quantitative Finance*, where financial assets are stripped down into underlying cash flows and derivatives such as forwards, caps and swaptions. In a world where leverage and liquidity are plentiful, anything composed of these parts can be priced and traded by hedge funds or arbitrageurs who iron out pricing discrepancies.

The derivative wrapped inside a LOBO loan goes by the name of a Bermudian cancellable swap. Many banks sold them in the market right at the point of issue to hedge the unfathomable behaviour of the loan contract and, more importantly, to book upfront profits on the deals. These profits can be calculated, as discussed here, and totalled £1 billion or more.

In the UK at least, that world has disappeared forever. The financial crisis happened, and sterling bond yields began their long march downwards to one per cent, a level reached at the end of 2021. For a decade, the embedded option was irrelevant, and councils seemed locked into unending loans at a high rate. Some authorities sued the banks, but their claims were either dismissed or settled before trial.

Meanwhile, the banking world changed beyond recognition. Three of the biggest lenders, RBS, Depfa and Dexia, were bailed out by taxpayers, and the latter two are still being wound down under state ownership. New Basel capital rules mean that issuing LOBO loans is uneconomic for shareholder-owned banks. And the ecosystem of hedge funds and trading desks that enabled the complex swaps underlying them to be traded has largely dried up.

This brings us back to today, with the return of higher interest rates. For the first time since they were issued, LOBO options might have some value.

Risky Finance worked with Vedanta Hedging, a London-based consulting firm, to value the 800-odd contracts in our database using a Bloomberg terminal. The embedded swaps, having reached a peak valuation of £12bn in favour of the banks at the end of 2021, have since lost 91 per cent of their value.

Aggregate LOBO swap valuations

Risky Finance, Vedanta Hedging Ltd

Remember, this is based on a pricing model whose inputs are simpler, much more liquid derivative contracts. Even though the LOBO hedges sold before the shuttering of the market are still in place, we don't have any transactions to test those pricing assumptions.

Indeed, the biggest lender, Barclays, forestalled that question in 2016 when it decided to unilaterally waive all the option features in its LOBO contracts. The bank did this because after electing to record the loans at fair value on its balance sheet, it floundered in its attempts to value these "Level 3 assets" due to their embedded options.

After adding a spread to reflect pricing opacity, Barclays reported a £930mn writedown in the portfolio's value. Then, after waiving the option feature, the bank moved the portfolio into the Level 2 category, switched the loans from fair value to amortised cost accounting and reduced the risk-weighted assets (or capital) allocated to the portfolio.

From our perspective today, this amounts to a fascinating experiment, because we can compare Barclays loans that removed the LOBO feature with those of other banks that kept the options. When we express this as a ratio of derivative value to loan principal, for Barclays this is less than 3 per cent, while for all the other lenders the ratio is 19 per cent. Or expressed in money, those options that Barclays threw away in 2016 are now worth £1bn to its rivals.

Intuitively, we can see why that value is there. Interest rate uncertainty is headline news, and options that allow multiple exercise opportunities in years to come are especially valuable. So what will the holders of the options do?

Remember, the institutions that hold the actual LOBO contracts are for the most part, no longer the holders of the options, which were sold off at the time of issue. The ultimate counterparties are likely to be insurers or hedge funds with the capital resources to invest in such complex derivatives. Deciding the optimal time to exercise is a PhD-level problem.

Meanwhile, inheritors of the LOBO loans collect coupon payments from the councils and wait for the hedge counterparties to call. If the hedges are cancelled, these institutions will have to decide how to treat the borrowers. And it will be the turn of councils, led by Newham, Glasgow and Leeds, to wait for that call.
