MACROECONOMICS

Embedded Leverage

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Embedded leverage — that is, the amount of market exposure per unit of committed capital — has become an important feature of financial instruments. This is because investors are unable (or unwilling) to use enough outright leverage to get the market exposures they would like.

For instance, individual investors and pension funds may not be able to use any leverage, banks face regulatory capital constraints, and hedge funds must satisfy their margin requirements. However, an investor can gain substantial market exposure without using outright leverage (i.e., without borrowing) by buying options, leveraged exchange-traded funds (ETFs) or other securities that embed leverage — many of them designed precisely to provide embedded leverage. Investors are therefore willing to pay a premium for securities with embedded leverage and intermediaries who meet this demand need to be compensated for their risk.

This paper studies the amount of embedded leverage in equity options, index options and ETFs, and how embedded leverage affects the required returns. We find strong evidence for the pricing of embedded leverage both for equity options, index options, and leveraged ETFs. We propose that a security's embedded leverage is an important characteristic. Securities with a large amount of embedded leverage alleviate investors' leverage constraints and, therefore, have a lower required return, according to our hypothesis.

Embedded leverage may have broader effects on the financial markets than the asset classes that we study. For instance, equities in firms with debt are securities with embedded leverage on the firm value. Also, the whole securitization market may be affected by embedded leverage considerations.

be relied on in making an investment or other decision. There can be no assurance that an investment strategy will be successful. Historic market trends are not reliable indicators of actual future market behavior or future performance of any particular investment which may differ materially, and should not be relied upon as such. Diversification does not eliminate the risk of experiencing investment losses.

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