



Calculate the Savings with Single-stock Futures

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Corporate finance is not as complicated as we make it out to be. For instance, say you need a few billion dollars to tide you over for the next several months, perhaps to recapitalize a bank after all those unfortunate incidents with mortgages issued to borrowers without documented income, or maybe to fund a plant and equipment. It matters not. At the end of it all, there are three options: borrow the money, sell ownership in the firm or issue a hybrid security such as a convertible bond that does both.

That is it. It is as simple as trading—where the price can go up or the price can go down. Why do we make these things so difficult for ourselves?

A small but significant change in our thought process can make our lives simpler and, one hopes, more profitable. We need to stop thinking about each financial market in a vacuum, even though this is how we have organized our financial institutions—for better or worse. I made this point three years ago in conjunction with the credit-default-swap market in SFO (see "Stocks Float on a Sea of Bonds," December 2005).

STOCKS AND INTEREST RATES

The world might have handled the credit crunch that began in summer 2007 a little better if the very compartmentalized traders on mortgage-, stock- and bond desks understood each others' businesses more.

The simple fact is that all capital markets are linked together so as to provide investors with an identical risk-adjusted rate of return for any given time horizon. This is a corollary to the law of one price, the basis for arbitrage. Whether we are buying stocks, bonds or simply providing a loan, we expect to make a return relative to the risk-free (or Treasury bill) rate of return. Restated, all investments are spread trades: You are selling cash—borrowing from yourself whether you realize it or not—in order to buy an asset.

Sometimes that trade works—and sometimes it works spectacularly in the case of a stock. Each stock contains an embedded call option, which can increase without limit over a long period. The stock investor also receives dividends; those are reinvested, too. The downside of stock ownership is limited, by definition, to the purchase price before dividends, and the opportunity costs of capital are accounted for as the stock cannot fall below \$0. In option terms, the owner of an asset is short a put option, which by itself has a maximum loss equivalent to the present value of its strike price.

As an aside, this "going to zero" happens more often than the propaganda will lead you to believe, but at least the loss is both finite and knowable in advance. It also provides an interesting comparison to commodities: Although any given stock can go to zero or be merged out of existence, this is an unlikely outcome for corn, sugar, etc.



THE SINGLE-STOCK FUTURES ADVANTAGE

If stock investors are borrowing from themselves, they should do everything possible to lower their financing costs. The best way to do that is to put single-stock futures (SSFs) back on their plates.

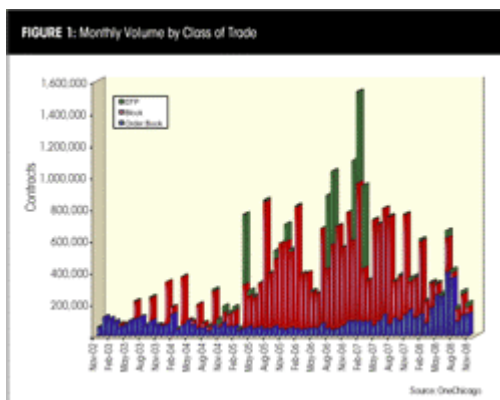
SSFs, as you may recall, were enabled by the Commodity Futures Modernization Act of 2000 and launched with great fanfare in November 2002. For a large number of reasons, none of which I will delve into, they struggled initially but have since come roaring back by virtue of their intrinsic financing advantages over stocks on both the long and short sides of the equation. Like everything else knowing in this business, volume tells the story.

SSFs are contracts to buy or sell 100 shares of an underlying stock or 1,000 shares of many exchange-traded funds. Although an SSF contract can be offset any time prior to the contract's expiration, normally the third Friday of the contract month, a contract held through expiration converts into either ownership of the stock for a long position or delivery of the stock for a short position. In marked contrast to most other futures that are used for the purposes of price discovery and risk management and seldom go to delivery, approximately 95 percent of SSFs are held to delivery.

This absolute convergence in both theory and practice—and how many times do these two agree in finance? —of SSFs into a financial asset forms the basis, no pun intended, of thinking about stocks in interest-rate terms. Lending can be defined in economic terms as receiving money solely as a function of time. Conversely, borrowing can be defined as paying money solely as a function of time.

The fair value of an SSF is the price of the stock plus the interest-rate cost of carrying that stock to expiration, minus the future value of the expected dividend. If the short-term interest-rate cost of carry is greater than the dividend yield during the period between the trade and the future's expiration, the SSF will be priced greater than the stock. The opposite is true if the dividend yield exceeds the short-term interest-rate cost of carry over the same period.

As in all other matters financial, if something looks too good to be true, it probably is. Let's take the case of buying the stock and selling the future at a net interest-rate return greater than the market. If the apparent interest-rate return seems unusually high, that may be because the market is expecting the dividend to be cut.



[Click image for larger view](#)

For a short position, there really is no comparison. Instead of going through the normal stock loan procedure of finding someone with the stock to lend, borrowing those shares, posting 150 percent of the value as margin, possibly (but not necessarily) receiving some portion of the



interest earned on those shares as a rebate and being subject to the recall of those shares—all of which are cumbersome and nontransparent processes—instead you can simply take a short position in the future and post an initial margin or performance bond of 20 percent of the value of the underlying stock. The procedure is completely transparent, and the credit quality is that of the triple-A rated Options Clearing Corporation. OneChicago is regulated by both the Securities and Exchange Commission and the Commodity Futures Trading Commission, and will certainly be regulated by any successor single financial regulator.

INTEREST RATES: LONG SIDE

Once you make the little mental leap to thinking of stock purchases and sales in terms of interest rates, as well as in terms of price, you will find a surprising number of transactions involved.

On the stock purchase side, interest-rate items include:

1. Margin loan charges, if applicable. If you buy shares using the 50 percent margin allowed under Regulation T, you will be paying an interest rate called a broker loan on the amount borrowed. A broker loan is typically one of the highest short-term interest rates.
2. Foregone interest earned. This is the opportunity cost involved in tying up money in the stock instead of investing it in a short-term interest rate instrument, minus the reinvestment income on the dividend received, if applicable over the SSFs holding period.

On the SSF long side, interest-rate items include:

1. The basis of the SSF. Specifically, it will be the spread between the stock's bid price and the SSF's asking price, less the dividend, if applicable.
2. Foregone interest earned. This is the amount of money you have tied up in the 20 percent of current market value performance bond multiplied by the interest rate you were earning on that cash. Think of this as money you are borrowing from yourself.
3. Interest rate income earned on T-bills deposited against the SSF performance bond requirements.

INTEREST RATES: SHORT SIDE

On the stock sale, or short side, interest-rate items include:

1. The short stock rebate you may earn from your broker on the proceeds from your short sale.
2. Foregone interest earned. This is the opportunity cost involved with tying up money in margin against the short sale.

On the SSF short side, interest-rate items include:

1. The implied interest rate in the SSF's basis, which we can define as $SSF = \text{stock} \cdot e^{r \cdot ((t_x - t_0) \div 360)}$, where "r" is the effective federal funds rate, " t_x " is the expiration date of the future and " t_0 " is the date of evaluation.
2. Interest-rate income earned on T-bills deposited against the SSF's performance bond.
3. Foregone interest earned. This is the amount of money you have tied up in the 20 percent of current market value performance bond multiplied by the interest rate you were earning on that cash.



COMBINING COSTS AND BENEFITS

If this sounds as if there are many moving parts involved in calculating the interest-rate savings of SSFs, there are. That is unavoidable in this situation, but then again, it is unavoidable in all forms of arbitrage. Fortunately, there are interactive online calculators available to walk you through the process. (Check out OneChicagoCalculator.com.)

This is if you are an arbitrageur. If you are simply an investor looking to maximize the return on your capital, the first thing you want to do is get comfortable with the whole process: No one trades what they do not understand, or alternatively, what they think they do not understand. How many stock traders can tell you the interest-rate opportunity costs associated with their investments? Most of us do not know because we were never told we should care. You should; it is real money and adds up quickly.

Professional traders, including dedicated short sellers, market-neutral funds and so-called 130/30 funds (those that balance a 130 percent long position with a 30 percent short position) have started to come back to SSFs because they understand the importance of return on capital. It is, after all, the only game in town.

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