

## Thinking About Stocks In Interest Rate Terms

Corporate finance is not as complicated as we make it out to be. Let's say you need a few billion dollars to tide you over the next few months. Maybe to recapitalize the bank after those unfortunate incidents with all those mortgages issued to borrowers without documented income; maybe to fund plant and equipment. It matters not: At the end of it all you can borrow the money, you can sell ownership in the firm or you can 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?

### Stocks And Interest Rates

A small but significant change in our thought process can make our lives simpler and hopefully 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. We made this point three years ago in conjunction with the credit default swap market (see "Stocks Float On a Sea of Bonds," December 2005). The world might have handled the credit crunch that began in the summer of 2007 a little better if the very compartmentalized traders on mortgage, stock and bond desks understood each others' businesses a little better.

The simple fact is 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.

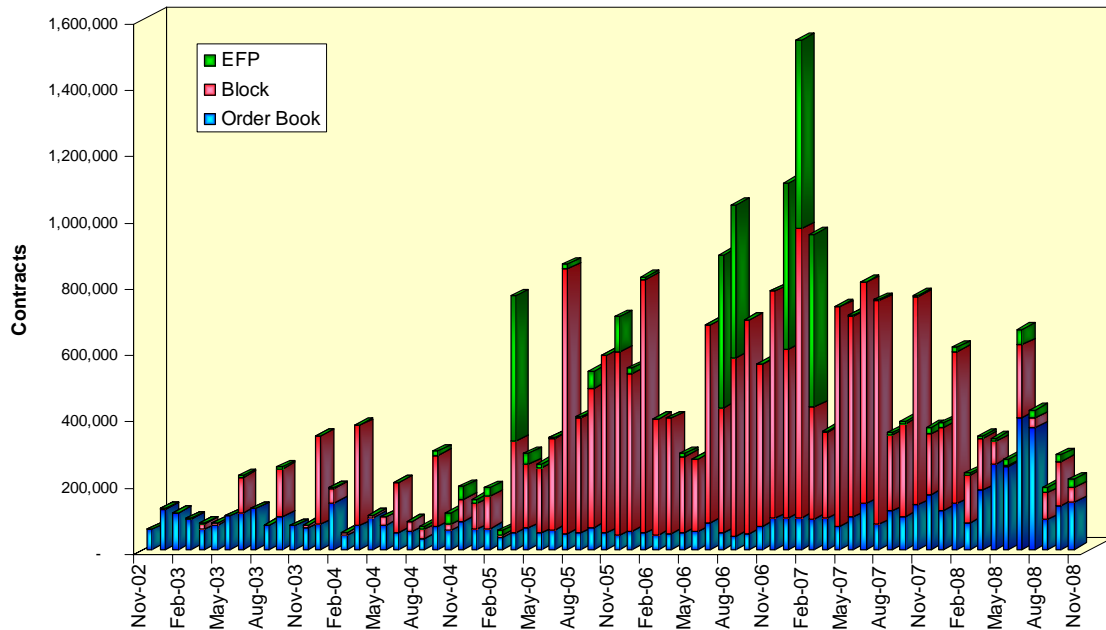
Sometimes that trade works, and works spectacularly in the case of a stock. Each stock contains an embedded call option, and that can rise without limit over a long period of time. The stock investor also gets dividends, and those are reinvested, too. The downside of stock ownership is limited, by definition, to the purchase price before dividends and the opportunity cost 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: While any given stock can go to zero or get 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 plate. 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 we will delve into here, 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.

**Chart 1: Monthly Volume By Class of Trade**



SSFs are contracts to buy or sell 100 shares of an underlying stock or 1,000 shares of many exchange-traded funds. While 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 the a short position. In marked contrast to most other futures, which are used for the purposes of price discovery and risk management and seldom go to delivery, approximately 95% 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. We can define “lending” 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 a 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 over 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.

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% 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 non-transparent processes – you simply take a short position in the future and post an initial margin or performance bond of 20% of the value of the underlying stock. The procedure is completely transparent and the credit quality is that of the AAA-rated Options Clearing Corporation. OneChicago is regulated by both the Securities & 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 side purchase side interest rate items include:

1. Margin loan charges, if applicable. If you buy shares using the 50% margin allowed under Regulation T; you will be paying an interest rate called broker loan on the amount borrowed. Broker loan typically is one of the highest short-term interest rates;
2. Foregone interest earned. This is the opportunity cost involved in tying money up in the stock instead of investing it in a short-term interest rate instrument; less
3. Reinvestment income on the dividend received, if applicable over the SSF's 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% 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; and
3. Interest rate income earned on T-bills deposited against the SSF's 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; and
2. Foregone interest earned. This is the opportunity cost involved with tying money up 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  $SSF = Stock * e^{r*((t_x - t_0)/360)}$ , 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; and
3. Foregone interest earned. This is the amount of money you have tied up in the 20% of current market value performance bond multiplied by the interest rate you were earning on that cash.

### **Combining The Costs And Benefits**

If this sounds as if there are a lot of moving parts involved in calculating the interest rate savings from SSFs, there are. This is unavoidable here, but then again it is unavoidable in all forms of arbitrage. Fortunately, there are interactive on-line calculators, such as [www.onechicagocalculator.com](http://www.onechicagocalculator.com) available to walk you through the process.

This is if you are an arbitrageur. If you are simply an investor or 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 it adds up quickly.

Professional traders, including dedicated short-sellers, market-neutral funds and so-called 130/30 funds, those which balance a 130% long position with a 30% 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.