Trading Fannie Mae's Dividend Risk

Just as a struggling comedian always can get a laugh with a rubber chicken, a financial commentator always can get a laugh with Fannie Mae and Freddie Mac. That whole part about lowering mortgage costs for homeowners was a real knee-slapper for years.

But seriously, folks: Risk creates opportunity, especially when two assets have a known arbitrage relationship. Option traders are familiar with high volatility, exaggerated volatility skews and other factors distorting relationships in their world. These are viewed correctly as opening the door to arbitrage profits across a spectrum of strategies.

Few conventional equity investors see themselves as option traders or arbitrageurs, and this is as it should be. They may be active investors involved in stock selection or passive investors who have to match an index or benchmark as part of their mandate. In either case, let's take a specific case study on a topic introduced last month, the use of single stock futures (SSFs) to hedge dividend risk. Fannie Mae will be used as the guinea pig, apologies to the world's classroom rodents offered in advance.

SSF Properties And Advantages

Equity investors who either want to or must own a stock in danger of seeing its dividend cut would be well-served by buying the SSF instead. We must remember a SSF held to expiration receives 100 shares of the underlying stock, or 1,000 shares of many exchange-traded funds (ETFs). There is no basis risk, physical storage costs or any of the folderol associated with the physical delivery of many commodities. If you are long the SSF, you will receive the stock.

The key is how much it costs you in comparison to own that stock. In the case where the dividend is not realistically at risk, the costs of holding a stock include:

1. Any amount financed on margin; and
2. The foregone interest income, or money borrowed from yourself, resulting from selling interest-earning deposits for shares.

The costs of going long a SSF include the foregone interest income, or money borrowed from yourself, on the 20% performance bond less any interest earned on those funds held in your brokerage account.

The two numbers can be compared simply and readily under a wide range of scenarios using the OneChicago Calculator.

Dividends' Role In Basis And Fair Value

The fair value of a SSF is the interest rate cost of holding the stock less the future value of the expected dividend over the holding period of that SSF, or:

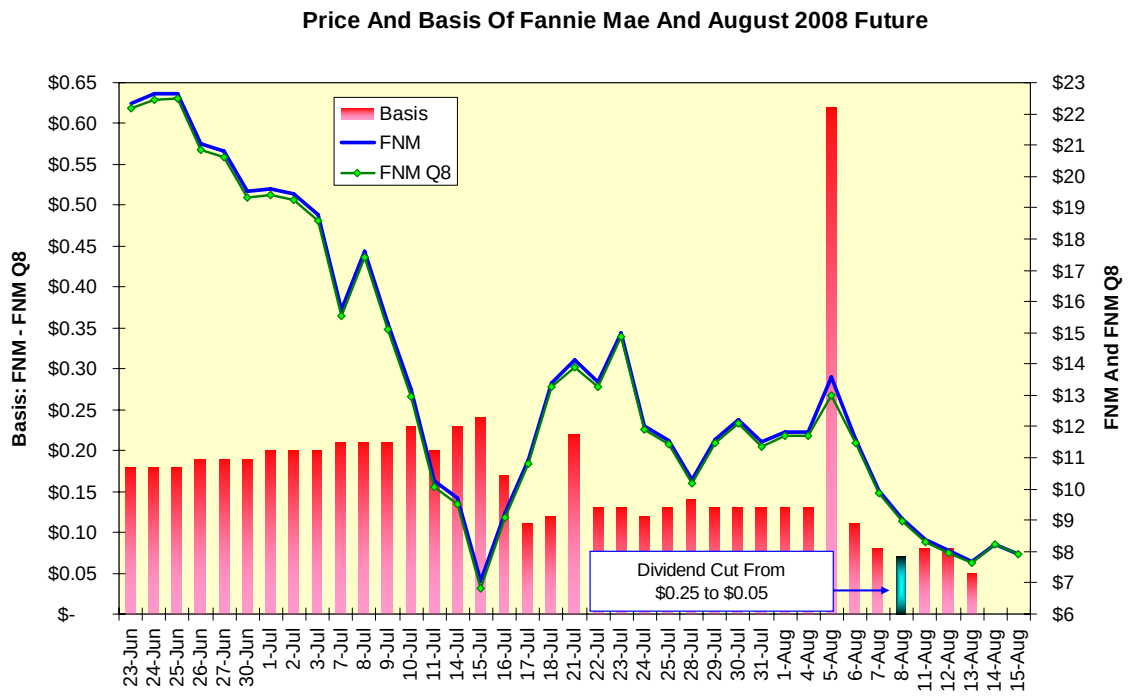
$SSF = Stock * e^{r*((t_x - t_0)/360)} - Div * e^{r*((t_x - t_d)/360)}$, where r is the effective federal funds rate, t_x is the expiration date of the future, t_0 is the date of evaluation and t_d is the ex-dividend date.

As the fair value of the future at initiation reflects the market's best estimate of what that dividend payout will be, it stands to reason a smaller than expected dividend will result in a higher SSF price if and when that payout estimate is reduced.

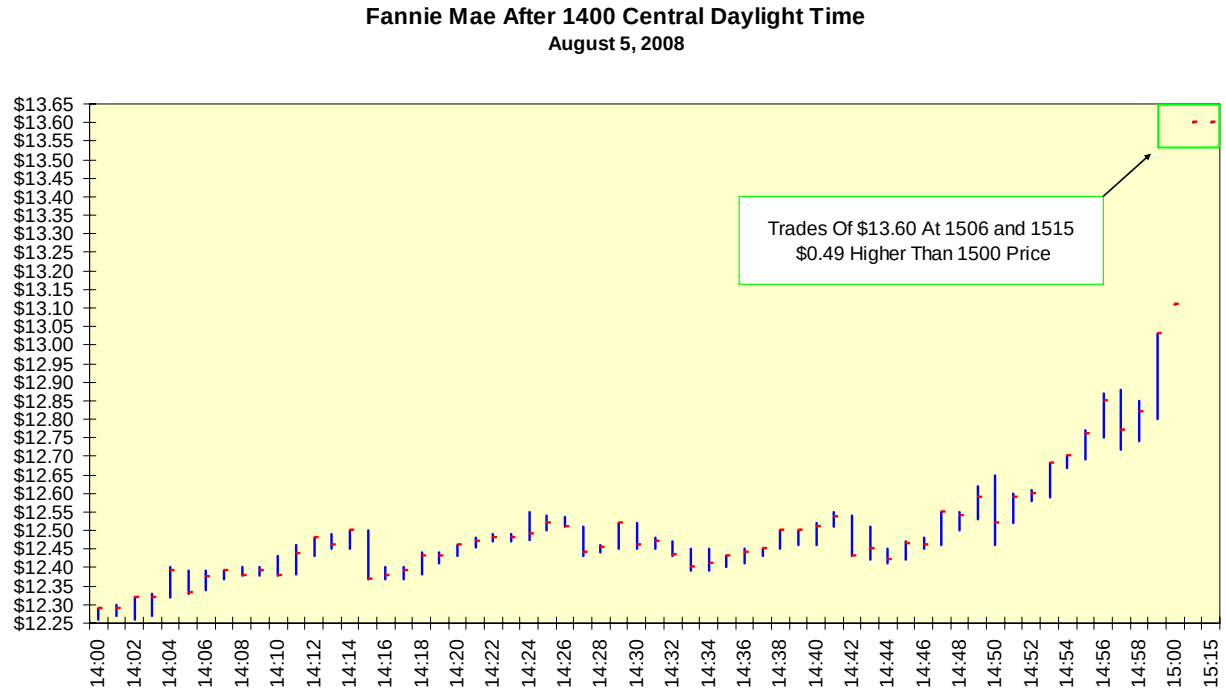
The Comparison

Now let's compare FNM with the August 2008 SSF (FNM Q8), which expired on August 15, 2008, to see whether this theory holds true in practice. FNM announced on May 6, 2008 it would pay a dividend of $0.25 per share with an ex-dividend date of August 14, 2008. By the middle of July, FNM and Freddie Mac were in such severe financial trouble they had to get an explicit line of credit from the U.S. Treasury. On August 8, 2008, FNM announced it would cut its dividend to $0.05 per share.

The price histories and the basis of the trade, FNM- FNM Q8, are depicted below.



First, let's address the huge spike on August 5, 2008. This is not an example of the stock and the SSF moving grossly out of alignment, but rather of two small trades in the cash market for the stock after the SSF ceased trading for the day. A minute-by-minute bar chart for the 1400-1515 Central Daylight Time trading of FNM is displayed below. It is fair to say the cash market came out of alignment with itself for reasons unimportant here.



Next, the closing basis levels of $0.00 on August 14-15, 2008 reflect the interest rate cost of holding an $8.23 stock for a day at most and were viewed rightfully by the market as functionally equivalent to $0.00. The future value of the expected dividend was, of course, $0.00.

Running The Numbers
How did the relative prices of FNM, FNM Q8 and the basis, or [FNM – FNM Q8] track up through the ex-dividend date? Let's use the starting date of Monday, July 14, 2008, the first trading date after which the government plan to backstop FNM was announced.

The following data are used:

1. 25 trading days;
2. 50% Regulation T margin;
3. A 5% broker loan rate;
4. A 2% rate on deposits (for calculating foregone interest);
5. A closing bid/offer of $9.69 – 9.70 on FNM;
6. A closing bid/offer of $9.32 – 9.57 on FNM Q8; and
7. Expectations of a $0.25 per share dividend

The total interest rate cost on the FNM cash stock purchase is:

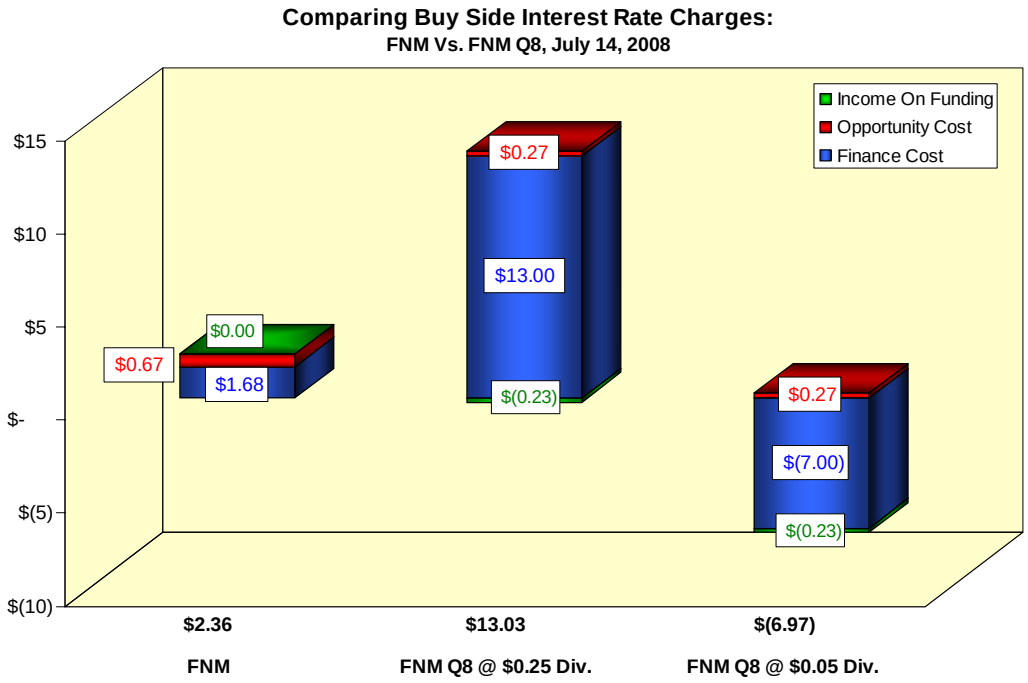
1. A finance cost of 100 shares * $9.70/share * 50% Reg-T * 25/360, or $2.36; plus
2. An opportunity cost of capital of 100 shares * $9.70/share * 50% Reg-T * 25/360 * 2% interest available, or $0.67; leading to a total cost of
3. $2.36

The total interest rate cost on the FNM Q8 SSF purchase at the expected dividend of $0.25 is:

1. A finance cost of 100 shares * ($9.57 – 9.67 + 0.25), the FNM Q8 offer less the FNM bid plus the expected $0.25 dividend, or $13.00; plus
2. An opportunity cost of capital of 100 shares * $9.57 * 20% performance bond (initial margin) * 2% interest rate available * 25/360, or $0.27; less
3. Interest earned on funds deposited in the brokerage account of 100 shares * $9.57 * 20% performance bond * 1.75% interest earned * 25/360, or $0.23; leading to a total cost of $13.03

Had FNM Q8 been priced for the eventual $0.05 dividend, the costs would have been:

4. A finance cost of 100 shares * ($9.57 – 9.67 + 0.05), the FNM Q8 offer less the FNM bid plus the expected $0.05 dividend, or -$7.00; plus
5. An opportunity cost of capital of 100 shares * $9.57 * 20% performance bond (initial margin) * 2% interest rate available * 25/360, or $0.27; less
6. Interest earned on funds deposited in the brokerage account of 100 shares * $9.57 * 20% performance bond * 1.75% interest earned * 25/360, or $0.23; leading to a total cost of $13.03



The difference of $0.1303 at the prevailing dividend of $0.25 per share is wiped out and then some by the eventual convergence of the basis to $0.00 on August 14, 2008. The closing basis on July 14, 2008 was $0.23 per share. The net result was a realized basis gain almost $0.10 per share greater than the interest rate differential at no risk.

Some might say $0.10 per share is not worth the effort; no, they would rather engage in the old-fashioned macho trade of getting a hunch and betting a bunch. So be it. But arbitrageurs can and do make money year-in and year-out by pocketing the small differences available on such trades, and they seldom make the headlines under "Arbitrageur Loses Billions" category. If you have an opinion on a stock whose dividend is at risk – may I suggest the entire financial sector in this regard – trade it with the SSF.