

It's A Bond-Stock-Future

What's the most fun you can have in New Orleans without a handful of beads? Some would say ordering a turducken, the Cajun celebration of culinary excess consisting of a turkey stuffed with a duck stuffed with a chicken (and don't forget the cornbread and shrimp dressings, andouille sausage and a stomach pump).

Traders may someday enjoy a similar combination (a BoStoFut?) by combining the best of bonds, stocks and futures into a security future based on fixed income exchange-traded funds (ETFs). ETFs solve one of the most-overlooked problems associated with indices, that they never were designed to be trading instruments. In fact, it is probably quite accurate to say that if indices did not exist, we would not have to invent them.

The first stock index in the United States, the Dow Jones Industrial Average, was developed in 1896 to attract the interest of office workers rushing to catch streetcars and subways, not to serve as a benchmark of manager performance. Only much later did the presence of indices create both the performance measurement industry and the specialized for-hire investment manager.

Reasonable observers can debate whether this has been to the benefit of society, but the opinion here is no. Indexation forces a herd mentality amongst fund managers that exacerbates moves in both directions. It forces index fund managers to buy ever-larger quantities of increasingly overpriced stocks and to sell ever-larger quantities of fallen issues. It produces big swings in index members for no reason other than their index status. And it allows option-laden managers a free ride at their shareholders' expense when the index itself is rising.

Sincere Flattery

Success breeds imitation. Despite the lack of intellectual underpinning available to stocks from modern portfolio theory and the capital asset pricing model, indexation spread from stocks to commodities, hedge funds and fixed income instruments. Take commodities – please. We have four major commodity indices (see “The Money's Got To Go Somewhere,” April 2002) of vastly different composition, weighting and correlation to the economy as a whole, and none of the four really serve as an underlying systemic risk index in the way the S&P 500, for example, does for stocks. If you strip out the price trend of the Goldman Sachs Commodity Index from, say, heating oil, copper, cotton and corn, do you have an alpha and beta – expected outperformance and relative volatility, respectively – against the GSCI for any of these that are more than statistical artifacts? No.

Fixed income indexation has its own set of unique problems. To wax poetic, a bond is like a river; it changes with the flow of time. Each and every day, the maturity of the bond gets shorter and its cash flows are discounted by a different segment of the yield curve. Its key risk measures, duration and convexity, change as well. If this bond or any portfolio of bonds is benchmarked to a fixed, notional target such as a constant maturity 6% coupon 20-year bond, the comparison soon will devolve into apples and oranges.

An index derivative should have a stable beta near 1.00 to its underlying index, but this is difficult to achieve with bonds. The value of a basis point changes as a function of the underlying interest rate (see “The Fate Of The Late, Great Eight,” October 1999). The volatility of interest rates increases as the bond “rolls down the curve” with its ever-decreasing maturity, but the dollar volatility of the bond itself eventually decreases. Many bonds have embedded options, and all but Treasuries are subject to changes in credit risk. Finally, and quite critically, the liquidity of a stock does not decrease as a function of time, but bonds lose their liquidity rapidly; this is true even of Treasuries as they move “off-the-run.” Included in this liquidity issue is the relatively small size of bond issues compared to the float of a stock. A \$10 billion Treasury bond issue has only 10 million bonds; Morgan Stanley alone has a float of more than 10 million 100-share lots.

The different institutional incentives operating in the stock and bond worlds should discourage indexation in fixed income. Stocks are sold on absolute, not risk-adjusted performance (Disagree? Try to recall the

last mutual fund ad you saw that featuring any aspect of risk management). Bonds, even though they are recognized as a total return instrument, are not bought so much for relative performance as they are for current income and capital appreciation. If you are a pension fund or insurance manager needing to match assets and liabilities, beating a benchmark is nice, but failing to meet your actuarial obligations is disastrous. Bond investors, hedge fund cowboys aside, tend to be risk-averse.

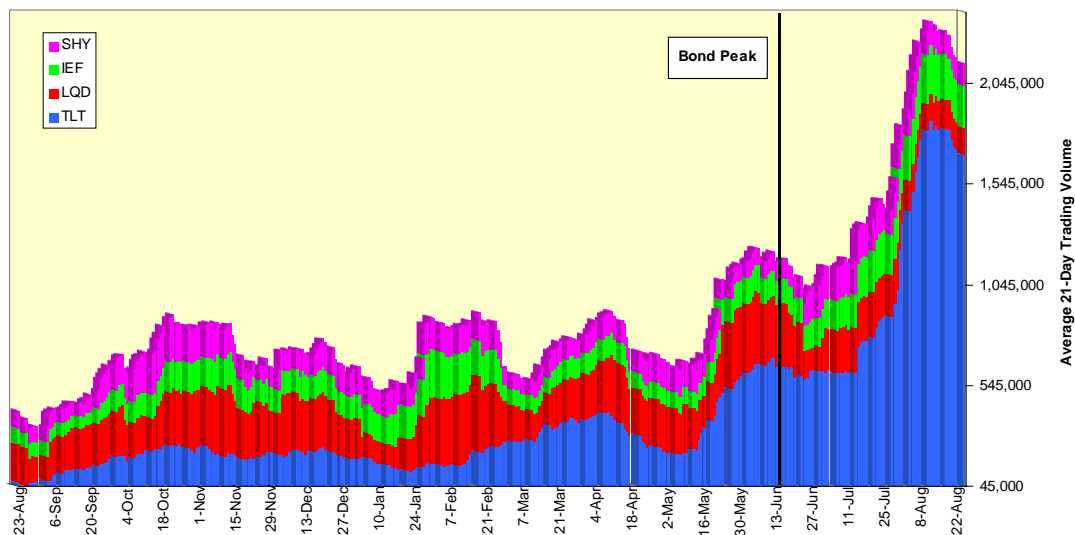
Bond ETFs

The inherent complexities and liquidity problems of bonds created a large unmet demand for an easy-to-trade instrument not subject to specific credit risk. While futures traders have made great use over the years of various interest rate futures, the far larger population of equity traders had been stuck without a simple means of trading their opinions on interest rates.

This ended in July 2002 with the creation of a group of iShare ETFs managed by Barclays Global Fund Advisors, the Goldman Sachs InvesTop Corporation Bond Fund (LQD), and three ETFs based on Lehman indices, for short (SHY), intermediate (IEF) and long-dated (TLT) Treasury exposures.

The quartet gained quick acceptance, with initial action concentrated in the LQD. This certainly was understandable given the corporate credit quality concerns associated with the 2002 bear market in stocks. Once long-term rates bottomed in June 2003, the action shifted rapidly to the TLT; trade in the LQD slowed as stocks rebounded. The volume patterns on both of these ETFs suggest they are being used to hedge against lower prices for their respective bond classes.

Fixed Income ETF Acceptance

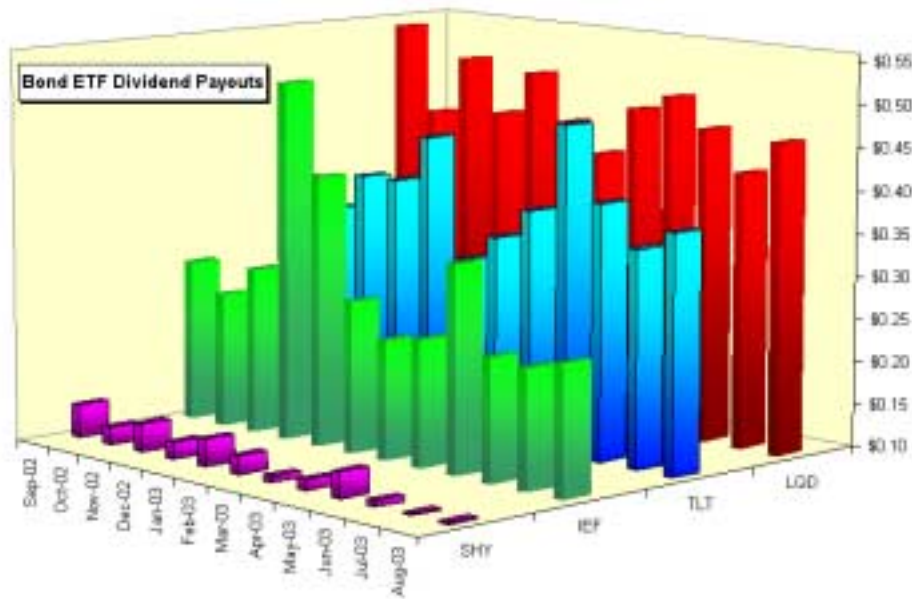


If this is the case, the ETFs are subject to all of the problems involved with standard stock loan procedures (see "Both A Borrower And A Lender Be," November 2002). These include 150% margin, the uptick rule, the risk of a buy-in and the ETF becoming hard to borrow.

This last concern is quite real. The LQD and TLT have only 21.3 and 9.7 million shares outstanding, respectively. Depositing the component bonds with Barclays can create new ETF shares. However, the liquidity and availability of the bonds become an immediate concern. Even though a corporate bond needs an outstanding size of \$500 for inclusion in the LQD, this represents only 500,000 bonds, a small size compared to the minimum of 7 million shares outstanding required for a stock to underlie a security future.

Futures On Bond ETFs

As the basis of a security future is the interest rate cost of carry less the future value of the expected dividends, and the dividend on a bond ETF is based on the coupon payments of the constituent bonds, any future on a bond ETF will trade at a substantial and variable discount to the ETF in the present low short-term interest rate environment. Moreover, the monthly dividend payments on bond ETFs are highly irregular. The SHY, IEF and TLT have only eight, seven and 16 constituent bonds, respectively, each paying on a semiannual schedule, which makes the dividend payout schedule somewhat lumpy. The LQD is designed to have 100 bonds, but some issuing corporations have multiple bonds represented therein.



The dividend payout schedule for the LQD has some unique risks related to the inclusion criteria for each bond. If, for example, a bond is called, its credit rating falls below BBB- by S&P or below Baa3 by Moody's, or if its credit spread relative to the index widens to more than 250 basis points greater than the average spread in the LQD for six days, or if its daily par asset swap spread volatility is more than 2.57σ outside of the LQD's mean, the bond can be dropped from the index. Its coupon will disappear from the dividend as well, and the replacement bond's coupon will be unknown.

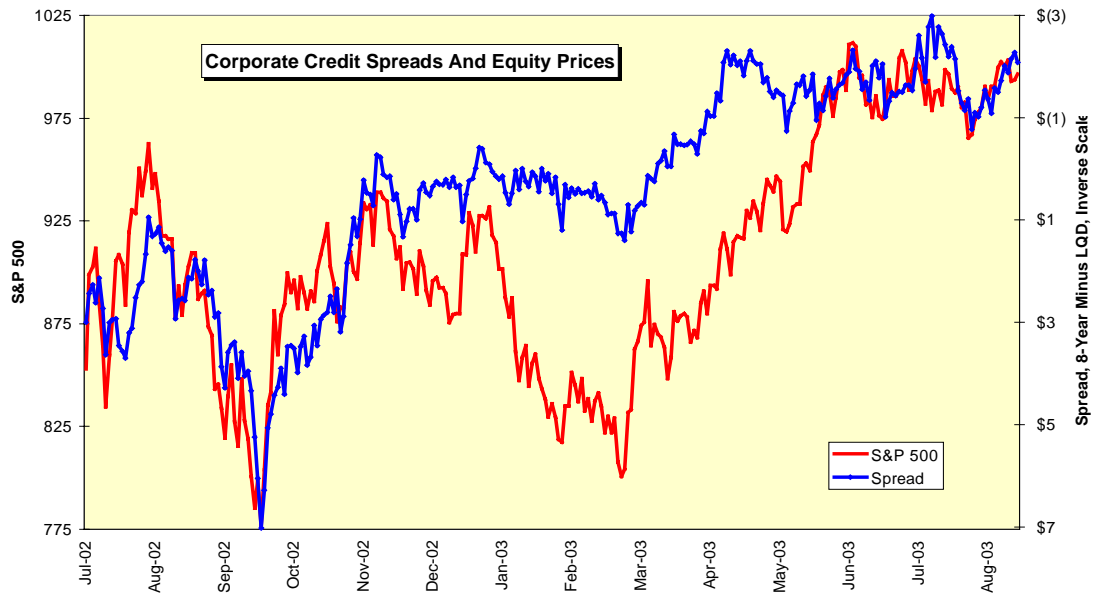
Any future based on the LQD will have to account for this stochastic dividend risk. A trader can hedge this risk using intermonth spreads; the spread of being long the near month and short the distant month is a bet on unexpected dividend increases, and vice-versa.

The new tax law places bond interest at a tax disadvantage to stock dividends (see "The World Turned Upside Down," August 2003). Don't get mad, get even: A long position in a fifth-quarter future on a bond ETF will reflect the accumulated coupons in its basis discount. This discount will be taxed at the 15% long-term capital gain rate if the position is profitable. This will reduce the effective tax rate on bond ETF coupons, now a 35% maximum rate, by as much as [35%-15%], or 20%, of the underlying income stream.

The short position will receive no such advantages. Not only will the short be borrowing money at the ETF's dividend yield less the short-term interest rate, but the position will be taxed at the short-term capital gains rate as well.

LQD Trading Considerations

The modified duration, or expected price change for a percentage change in yield, of the LQD with its 5.3% dividend yield is fairly short, 6.57. This is very close to the modified duration of the on-the-run 8-year Treasury, the 5% due August 15, 2011. The spread between these two bonds is a reflection of investor willingness to acquire high-quality corporate credit risk. As such, we should expect it to mirror the movements of the stock market closely, and indeed this has been the case. The persistent strength of the spread prior to the start of the Iraq war this past winter may have been a tipoff of the rally that followed.



The static comparison between the 8-year note and the LQD at the present matched duration is a short-lived phenomenon. As time advances and as yields change at both the long and short ends of the yield curve, the two duration sets will change significantly, as seen in the table below for \$10 million par value LQD position.

LQD: Rolling With The Changes

		<u>Initial Value</u>	<u>Modified Duration</u>	<u>Convexity</u>	<u>Value of One Basis Pt.</u>	<u>Yield</u>	<u>Total Return</u>
Current Market	\$	10,720,165	6.57	0.75	\$ 6,932	5.08%	
Horizon Value: T+90 Days (Includes Reinvestment)							
Short End							
-50 bp	\$	10,856,119	6.41	0.72	\$ 6,769	5.03%	5.18%
-25 bp	\$	10,814,535	6.40	0.72	\$ 6,730	5.12%	3.59%
0 bp	\$	10,773,249	6.39	0.72	\$ 6,692	5.20%	2.01%
25 bp	\$	10,732,260	6.38	0.72	\$ 6,655	5.29%	0.46%
50 bp	\$	10,691,565	6.37	0.71	\$ 6,618	5.37%	-1.08%
Long End							
-100 bp	\$	11,313,094	6.88	0.79	\$ 7,351	4.55%	23.07%
-50 bp	\$	11,036,124	6.53	0.75	\$ 7,008	4.88%	12.14%
0 bp	\$	10,772,909	6.39	0.72	\$ 6,692	5.20%	2.00%
50 bp	\$	10,522,360	6.26	0.69	\$ 6,399	5.52%	-7.41%
100 bp	\$	10,283,495	6.14	0.65	\$ 6,128	5.85%	-16.17%

If the nuances of an instrument create its trading opportunities, security futures on bond ETFs should not starve, and the prospect of options on such futures should lead to a complexity overload. Please pass the turducken.