Fixed income arbitrage assignment

Business

The fixedincome arbitrage strategy is based on the Idea that an investor assu mes opposing positions in the market to take advantage of small price discrepancies while limiting interest rate risk. T hese strategies provide relatively small returns and, in some cases, huge losses. During the 1 998 crisis virtually every major investment banking firm reported losses directly related to their positions on fixedincome arbitrage. However, fi xedincome arbitrage has since become one of the most rapidly growing sectors within the hedge fund industry growl ng by more than $9. billion during 2005 totaling in excess of $56. billion. The fixedincome arbitrage strategy is a broad set of marketneutral investmen t strategies intended to exploit valuation differences between various fixedincome securities or contracts. These are th e most widely used fixedincome arbitrage strategies in the market: Swap spread arbitrage (SS), Yield curve arbi trage (YC), Mortgage arbitrage (MA), Volatility arbitrage (VA), and Capital Structure arbitrage (CS).

For purposes oft his report we will focus on SS and YC arbitrage. The Yield Curve Arbitrage strategy includes taking advantage of small misprici ngs within the yield curve through the se of Intellectual Capital, gathered through sophisticated Factor Models. The Yield Curve is assembled with Market Data regarding yields at different maturities. Investors use the Yield Curve to extract implied information concerning Forward and Swap rates as well.

Arbitrageurs, through the factor models, ide ntify mispricings along the curve and exploit them in the following way: Once an actionable mispricing is identified, Arbitrageurs engage in swaps, eith er long or short, with the hopes to profit before the market converges or before the swap expires. For example, if the t ree year market yield is identified as being too high, a

trader will go long in a swap trade and lock in the fixed mark et rate, with the hopes that her variable obligation will be lower, as the model calls for as the market converges or as t he swap nears its expiration.

In order to remain market and factor neutral, the arbitrageur will also take th e opposite short position on the curve to remain cash neutral and immunize against certain factor risks such as interes t rates. To implement the Swap Spread (SS) arbitrage strategy, an investor should foll ow a twostep process. First, an investor nters into a par swap and receives a fixed coupon rate CMS and pays the flo ating threemonth Libor. Secondly, the investor shorts a par Treasury bond (CMT) with the same maturity as the CMS and invests the proceeds on a margin account earning the threemonth general collateral repo rate.

For the cash flo w from the combination of the legs, we have the investor receiving fixed annuity SS CMS CMT and paying floatin g spread S = Libor Repo. Likewise, the opposite strategy will also be implemented. For such, the cash flow is the i nvestor paying fixed annuity SSO = CMS CMT and receiving floating spread So = Libor Repo. In short, the swap spread arbitrage is the bet on whether the fixed annuity (SS) or the floating spread (So) received will be larger than the fl oating spread (S) or the fixed annuity (SSo) paid respectively, on a monthly basis.

If an investor followed these two steps month after month, she would earn an average mean monthly excess returns of 0. 31% to 0. 55%. While most months the returns are positive, occasionally ther e are negative returns. The Shape Ratio iS 0. 597. Annualized that iS 2. 08. Which iS approximately

5x th at of the S&P 500! Following specific trading strategies through time and studying the properties f return indexes generated by these strategies Several advantages Allows us to incorporate transaction costs and hold fixed the effects of levera ge in the analysis 2.

Allows us to study returns over a much longer horizon that would be possible using the limited amount of hedge fund return data available.