Fixed Income Arbitrage in a Financial Crisis Harvard Case Solution & Analysis

TheCaseSolutions.com

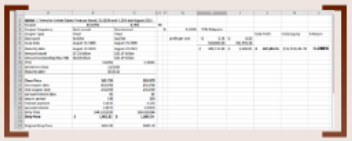
If the yield on the 10.625% bond increases or decreases by 1 basis point immediately after the trade.

How could he exit the trade and how much profit would he make?

What his return on initial invested capital?

Calculate the clean and dirty prices of the two bonds in Exhibit 1 at the existing yields on November 4th, 2000

Note: 10.625% bond is yielding 3.61%
4.25% bond is yielding 3.26%

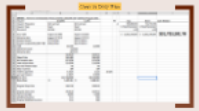


Franey's strategy would eventually be profitable as long as the following risks do not happen:
1. Widening spreads
2. Higher haircuts
3. Increasing rates

On November 4th, assume that James Franey Buys 550,000 ($1,000 face value) of one of the bonds and shorts an equal dollars amount of the other bond (Ignore the annual interest financing charge, 0.15%, and income, 0.10%)

What investment is required from the hedge fund's capital?

Note: Assume a 2% haircut on the long position and a 2% margin requirement on the short position



Assume that the yield on the 10.625% bond immediately rose equal to the one-tick yield to the 4.25% bond.

How could he exit the trade and how much profit would he make?

What is his return on initial invested capital?

Is this trade eventually guaranteed to be profitable? What are the risks?

Fixed Income Arbitrage in a Financial Crisis Harvard Case Solution & Analysis

TheCaseSolutions.com

Explain the exact steps James Franey would take to put on the arbitrage trade

- **buy the bond with higher yield and sell the bond with the lower yield**
- **To create a long-short position portfolio without interest rates risk**
- **Franey bought $ 1000 face amount of10.625% Treasury with 82 days of accrual interest for$1,418.28+$ 23.68 accrual**
- **Sell $1185.60 face amount of the 4.25% for $ 1256.37+$11.23 accrual interest**
- **Short term overnight spread: $ 1441.96= $1418.28+$23.68 and $ 1267.60=$1256.37+$11.23 (174.36)**

In this zero-investment portfolio, Franey would have financed two bonds with 0.15 % short-term borrowing rate and paid his prime broker with 2% haircut for long position 2% for short position.

When yield spread=>0 close the position

PV of the portfolio regardless of interests: $1441.96*0.35%/2*5.14+1267.60/0.35%/2*5.84=26

arbitrage return: 26/1441.96=1.80%

Buy (higher yield bond)	Sell (lower yield bond)
Face value: 100	Face value:100
Yield:3.61%	Yield:3.26%
Coupon rate:10.625%	Coupon rate:4.25%
Price:141.8281	Price:105.9688
Val01:0.0741	Val01:0.0625
Mod Duration:5.14	Mod Duration: 5.84
Maturity:August 2015	Maturity: August 2015

Calculate the clean and dirty prices of the two bonds in Exhibit 1 at the existing yields on November 4th, 2008

Note: 10.625% bond is yielding 3.61%
4.25% bond is yielding 3.26%

		A	B	C
1		**Exhibit** 1 Terms for United States Treasury Bonds 10.625% and 4.25% due August 2015		
2		Coupon	10.625%	4.25%
3		Coupon Frequency	Semi-annual	Semi-annual
4		Coupon Type	Fixed	Fixed
5		Day count	Act/Act	Act/Act
6		Issue date	August 15 1985	August 15 2005
7		Maturity date	August 15 2015	August 15 2015
8		Amount issued	$7.15 billion	$32.47 billion
9		Amount outstanding (Nov '08)	$4.02 billion	$32.47 billion
10		YTM	3.910%	3.260%
11		Settlement date	11/5/08	
12		Maturity date	8/15/15	
13				
14		**Clean Price**	**139.628**	**105.972**
15		last coupon date	8/15/08	8/15/08
16		next coupon date	2/15/09	2/15/09
17		accrued interest days	82	82
18		days in period	184	184
19		interest payment	5.3125	2.125
20		accrued interest	2.3675	0.9470
21		Dirty Price	141.995686	106.919284
22		**Dirty Price**	**$ 1,419.96**	**$ 1,069.19**
23				
24		Original Dirty Price	1441.96	1069.19

On November 4th, assume that James Franey Buys 550,000 ($1,000 face value) of one of the bonds and shorts an equal dollars amount of the other bond (Ignore the annual interest financing charge, 0.15%, and income, 0.10%)