

Fixed Income Arbitrage Case

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13 June 2016

Summary

Wang et al. 2013



References

If the yield on the 10.627% 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?

Key Words	Abstracted In
100% Satisfaction Guarantee 24/7 Customer Support 100% Refund Policy 100% Satisfaction Guarantee 100% Satisfaction Guarantee	100% Satisfaction Guarantee 100% Satisfaction Guarantee 100% Satisfaction Guarantee 100% Satisfaction Guarantee 100% Satisfaction Guarantee

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

Notes: 18.625% bond is yielding 3.61%
4.25% bond is yielding 3.20%

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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%)

[illegible]

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.

[illegible][illegible]

Assume that the yield on the 14.42% bond immediately rose equal to the current yield on the 6.25% bond.

How could he exit the trade and have made good
would he make?

What is his return on initial invested capital?

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

[illegible]

Fixed Income Arbitrage Case

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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 of 10.625% 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: $\$1441.96 \times 0.35\% / 2 \times 5.14 + 1267.60 / 0.35\% / 2 \times 5.84 = 26$

arbitrage return: $26 / 1441.96 = 1.80\%$

Buy (higher yield bond)

Face value: 100

Yield: 3.61%

Coupon rate: 10.625%

Price: 141.8281

Val01: 0.0741

Mod Duration: 5.14

Maturity: August 2015

Sell (lower yield bond)

Face value: 100

Yield: 3.26%

Coupon rate: 4.25%

Price: 105.9688

Val01: 0.0625

Mod Duration: 5.84

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	D
2					
3					
4	1	Exhibit 1 Terms for United States Treasury Bonds 10.625% and 4.25% due August 2015			
5	2	Coupon	10.625%	4.25%	
6	3	Coupon Frequency	Semi-annual	Semi-annual	
7	4	Coupon Type	Fixed	Fixed	
8	5	Day count	Act/Act	Act/Act	
9	6	Issue date	August 15 1985	August 15 2005	
10	7	Maturity date	August 15 2015	August 15 2015	
12	8	Amount issued	\$7.15 billion	\$32.47 billion	
13	9	Amount outstanding (Nov '08)	\$4.02 billion	\$32.47 billion	
14	10	YTM	3.910%	3.260%	
15	11	Settlement date	11/5/08		
16	12	Maturity date	8/15/15		
18	13				
19	14	Clean Price	139.628	105.972	
20	15	last coupon date	8/15/08	8/15/08	
21	16	next coupon date	2/15/09	2/15/09	
22	17	accrued interest days	82	82	
23	18	days in period	184	184	
24	19	interest payment	5.3125	2.125	
26	20	accrued interest	2.3675	0.9470	
27	21	Dirty Price	141.995686	106.919284	
28	22	Dirty Price	\$ 1,419.96	\$ 1,069.19	
29	23				
30	24	Original Dirty Price	1441.96	1069.19	
31	25				
32	26				

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%)