

# Case study on where

[Business](#), [Company](#)



**Part I: a) Based on the above information, please calculate bond's price today. Bond Face value calculation formula**

F= face value

C= Coupon Payment = F \*contractual interest rate

N= number of payments

i= market interest rate

M= Value at maturity

P= Market price of the bond also known as the fair market value

F= 200000 (face Value) ; C= 200, 000\*5%= 50 ; N= 5; i= 4% ; M= 200, 000

So Bond's Price today is =  $10000((1-1.04^{(-5)})/0.04) + 200,000(1.04)^{(-5)}$  = \$208, 903 so the bond is undervalued. This makes it a great bond to buy for any investor at face value.

**Part I: b) What is the bond's price today if market rate is 6%?**

F= 200000 (face Value) ; C= 200, 000\*5%= 50 ; N= 5; i= 6% ; M= 200, 000

So Bond's Price today is =  $10000((1-1.06^{(-5)})/0.06) + 200,000(1.06)^{(-5)}$  = \$191, 575 so it is selling the bond at a higher value than fair market price. This makes the bond an overvalued one at face value and is not a very good investment option.

Part II : 1 and 2) Would you choose to invest in the Woodside Petroleum Ltd.'s bond as part of your investment portfolio? Why or why not? If so, what sort of strategy would you pursue? Based on your analysis and findings, would you recommend the Woodside Petroleum Ltd.'s bonds to other investors? Please explain your reasoning.

Yes, I will choose to invest in Woodside Petroleum Ltd. bond as part of my investment portfolio and also will encourage my investors to invest as well.

### **There are few reasons why I will do that**

- The basic factor that will drive me is the coupon rate it is offering (4.6%) which for a 10 year bond beats the market rate (average is between 3-3.5% for corporate bonds) to my mind.
- Secondly oil and natural gas is a sector is a big factor in any major market in the world. It often drives the market in upward or downward direction. The problem mainly comes from the political issues between Middle East countries and UK, USA and some other countries. However as an Australian company Woodside is strategically enjoys a more stable demand from those high demand countries which makes it a safe company to bet.
- BBB+ rating of the bonds are very good and it gives a good indication of how stable the company is and there is very little chance of default risk of the company.
- Diversification of portfolio is another factor for me to consider Woodside bonds. Current portfolio do not have Oil and natural gas sector bonds are currently missing from the portfolio and by adding them in the portfolio it minimizes the overall risk in the portfolio of bonds.
- The strategy will be to always look for the market rate changes vs. the fair market value of the bond. If the situation changes in future I will be selling those bonds in the bond market to willing buyers. It will not be difficult to sell Woodside bonds in the market because of its great performance year after year and continuing growth.

## **Risks for investing**

- Default Risk: Companies operations and its profit margin remains one of the best in the industry and continue to grow at a very healthy rate of almost 25%. The company has a very healthy reserve to take care of any problem that comes up as cost overrun in any of its projects. The chances of default are very low.
- Rating Downgrade: Pluto Project: Cost overruns are not very uncommon in big new construction projects in Oil and gas industry. Although S&P has downgraded its outlook but still the Bond rating of BBB+ is not revised or downgraded and which makes it a very good investment grade bond. Pluto project may get delayed but it is a very strategic project for the company and company seems to be focused on completing this project and start delivering from the new LNG facility.
- Price Fluctuations: The market outlook is only getting better from the lows of 2010 and its bouncing back to a more stable framework. The outlook for the market for short to medium term is stable and there is not a huge chance of inflation or high fluctuations in market rate from the current corporate bond average of 3-3. 5%. The coupon rate of 4. 6% for Woodside bonds given the market outlook should be a very good bond for investment.
- Liquidity Risk: Bond market is definitely a much smaller market than equity and always it is not possible to find a buyer of a bond easily. However Woodside bonds should not be that difficult to sell in the market if need comes as they offer better than market rate of return and the company is stable and growing.
- Reinvestment Risk: There is always a chance for the issuing company to

call back the bonds. It generally happens when interest rate falls in the market and the company buys back the bonds and issues other bonds at lower coupon rate commensurate with the interest rate prevailing in the market at that time. However in this case the bond market seems to be stable and the market rate is not slated to fall much in short term future so chances of Woodside calling back the bonds are less.

## **Part II: Is the Woodside Petroleum Ltd.'s bond overvalued or undervalued?**

$F = 700000$  (face Value) ;  $C = 700,000 \times 4.6\% = 50$  ;  $N = 10$  ;  $i = 4\%$  ;  $M = 700,000$

So Bond's Price today is  $= 32200 \left( \frac{1 - 1.04^{-10}}{0.04} \right) + 700,000(1.04)^{-10} = \$734,065$  so it is selling the bond at a discount/undervalued. It is a buy for any bond buyer.

Part II : 3) Does the fluctuation in interest rates impact bond prices? How? To answer question 3, please review your calculations related to bond prices in Part I.

Yes it impacts the bond prices very much. If a bond has a coupon rate of 4% and the market rate expected in 5% then that bond is not a very good proposition to buy at face value. However if the market condition changes and the market return expected goes down to 3% then at the same coupon rate the same bond becomes desirable to buy at face value.

In the example in question 1 when the market rate was 4% and the Coupon rate was 5% then we saw that the fair market value of the bond today is higher than the face value but when the market rate went up to 6% the same bond fair market value went down below the face value .

It shows us how much the bond fair market value is dependent on the market and price fluctuations. It is very important to determine what will be the short term or long term average market rate before buying or selling any bonds.

Part II : 4) What do you perceive you have learnt in Module 4 Case Assignment? Which of the following learning objectives do you feel you have mastered?" Perform basic calculations concerning the bond pricing to make investment decisions" Create investment strategies utilizing fixed income securities" Evaluate key factors in analyzing bond investment risk and valuation

Module 4 gives a great overview of the Bond market. It gives a glimpse of what are the main factors which determines the Bond Fair market value. The main thing to remember in bond market is to see if the market rate is more than the coupon rate or not. If market rate is less

I have mastered the basic calculations concerning the bond pricing to make investment decisions. I have learnt what the fair price of a bond is and based on that value I will be able to decide whether to buy or sell a bond.

Part II gives me exposure to various types of risks like price risk, default risk etc. Also the concept of valuation of a bond not only by looking at its fair market value but also how to weigh that value with different other market factors associated with it.. While answering Part II, I also understood what could be the different investment strategies in the bond market.

## **Please provide your evaluation of the Module 4 Case Assignment in brief.**

The cases given were very well constructed and by solving them the basic understanding of how to calculate bond prices were clear.

The case study relating to Woodside gave me exposure to the bond market and what should be the investment decisions in bond market. It also made me aware of the risks involved in bond market.

Overall the assignments gave me a small but very comprehensive tour of the whole bond market and the strategies one should follow to succeed in that market.

## **References**

- Bond Basics : What are Bonds , Investopedia, <http://www.investopedia.com/university/bonds/bonds1.asp> (13th April, 2013)
- Bond Basics , Sifma , <http://www.investinginbonds.com/learnmore.asp?catid=46&id=4> ( 13th April, 2013)
- Yahoo Finance : <http://finance.yahoo.com/q/hp?s=WPL.AX&a=00&b=29&c=1988&d=03&e=13&f=2013&g=m&z=66&y=0> ( 13th April , 2013)
- Woodside Corporate Website : <http://www.woodside.com.au/Pages/default.aspx> ( 13th April , 2013)
- Woodside bond issue announcement : [http://www.woodside.com.au/Investors-Media/Announcements/Pages/Woodside-to-issue-US\\$700-million-in-corporate-bonds.aspx](http://www.woodside.com.au/Investors-Media/Announcements/Pages/Woodside-to-issue-US$700-million-in-corporate-bonds.aspx) ( 13th April, 2013)
- Woodside Annual report 2012 : <http://www.woodside.com.au/Lists/AnnualReports/2012%20Woodside%20Annual%20Report.pdf> ( 13th

April , 2012)

- Investing in Bonds , Ohio State University , <http://ohioline.osu.edu/mm-fact/0005.html> (13th April , 2013)

- The basics of investing in Bonds , Quick and Dirty Tips,  
<http://winninginvestor.quickanddirtytips.com/investing-in-bonds.aspx> (13th April, 2013)

- The risks of bond investing , about.com , <http://bonds.about.com/od/bonds101/a/bondrisk.htm> (13th April, 2013)