

Financial Modeling

– Certification Quiz Questions

Module 15 – Credit Analysis and Convertible Bonds

1. A company has issued a \$1.5 billion Convertible Bond with a 1.5% coupon rate, a 45% conversion premium, and a 7-year maturity.

The Diluted Shares, Interest, and Amortization of the Convertible Bond Discount in the “Base Case” scenario are shown below:

Convertible Bond Accounting Assumptions:

Average Annual Share Price Change:	
Base	10.0%
Upside	15.0%
Downside	(5.0%)
Extreme Downside	(10.0%)
Selected:	10.0%

Convertible Bond Information:	
Dollar Amount:	\$ 1,500.0
Interest Rate:	1.5%
Maturity:	2026-12-31
Conversion Premium at Launch:	45.0%
Conversion Price:	\$ 641.58
Par Value:	\$ 1,000.0
Conversion Ratio:	1.5586
# Convertible Bonds (Millions):	1.5000
# Coupons per Year:	2

Company Share Price and Convertible Bond Status:	Projected							
	FY20	FY21	FY22	FY23	FY24	FY25	FY26	
Average Share Price:	\$ 442.47	\$ 486.72	\$ 535.39	\$ 588.93	\$ 647.82	\$ 712.60	\$ 783.86	\$ 862.25
Have the Convertible Bonds Matured?	No	No	No	No	No	No	No	No
Diluted Shares from Convertible Bonds:	-	-	-	2.3	2.3	2.3	2.3	2.3
Convertible Bonds Converted This Year:	No	No	No	Yes	No	No	No	No
Amortization of Convertible Bond Discount:	(50.8)	(50.8)	(50.8)	-	-	-	-	-
Convertible Future Interest Payments:	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Future Principal Repayments:	-	-	-	-	-	-	-	1,500.0
Coupon Rate on Equivalent Non-Convertible Debt:	5.650%							
Fair Market Value of Convertible Bond at Issuance:	1,500.0			Tenor of Convertible Bonds:		7.0		
(-) Fair Market Value of Liability Component:	(1,144.2)			Annual Discount to Be Amortized:		50.8		
Fair Market Value of Equity Component:	\$ 355.8							

Based on this schedule, which of the following conclusions can you draw about the company’s financial statements?

- a. The issuance becomes more accretive (or less dilutive) to the company's EPS starting in Year 4 because the Amortization disappears.
 - b. The Equity Component of the Convertible Bond on the Balance Sheet increases from Year 1 through Year 3 before disappearing in Year 4, when the conversion happens.
 - c. Right before the conversion happens in Year 4, the Liability Component of the Convertible Bond plus the Equity Component equal the \$1.5 billion Face Value of this Convertible Bond.
 - d. All of the above.
 - e. Only statements 1 and 3.
 - f. Only statements 2 and 3.
 - g. None of the above.
2. A distressed company recently issued a bond with a Par Value (Face Value) of \$500 million, and a hedge fund just purchased the entire issuance at a 30% discount to Par Value (i.e., they paid \$350 million rather than \$500 million for the bond).

This bond matures in just over two years, but the company is currently restructuring and will not be able to repay or refinance it.

Therefore, the company asks the hedge fund for a 2-year extension, so that the bond matures in Year 4 (on September 15, 2024).

To compensate the hedge fund investors for this 2-year extension, the company offers to pay a coupon rate of 10% rather than 8%, along with Redemption Prices that scale from 103 down to 100 on the official maturity date.

It also offers to grant the hedge fund investors between 10% and 30% of its shares upon maturity or early repayment. The Yield to Exit, Modified Duration, and other metrics for the existing bond and the proposed new bond are shown below:

Distressed Company - Refinancing Analysis

(\$ USD in Millions Except Per Share Amounts in USD as Stated)

Bond Yield and Pricing Assumptions:

Assumptions and Calculations:	EXISTING Bond:	NEW Bond:								
Bond Principal or Par Value: \$ 500.0	Bond Coupon Rate: 8.000%	Coupon Rate: 10.000%								
Trading Price @ Settlement: 70.0%	Bond Maturity Date: 2022-09-15	Maturity Date: 2024-09-15								
"Clean" Bond Price @ Settlement: \$ 350.0	Current Yield: 11.429%	Current Yield: 14.286%								
(+) Accrued Interest: 10.1	Yield to Maturity (YTM): 26.505%	Yield to Maturity (YTM): 20.988%								
"Dirty" Bond Price: 360.1	Approximate Yield to Maturity: 27.059%	Approximate Yield to Maturity: 20.588%								
# of Interest Coupons per Year: 2	Yield to Assumed Exit: 24.966%	Yield to Assumed Exit: 25.922%								
Settlement Date: 2020-06-15	Modified Duration: 1.78	Modified Duration: 2.98								
Last Coupon Date Before Settlement: 2020-03-15										
Date:	2020-09-15	2021-03-15	2021-09-15	2022-03-15	2022-09-15	2023-03-15	2023-09-15	2024-03-15	2024-09-15	2025-03-15
Early Bond Redemption Allowed?	No	No	No	No	No	Yes	Yes	Yes	Yes	No
Bond Redemption Value % Par Value:	N/A	N/A	N/A	N/A	N/A	103.0	102.0	101.0	100.0	N/A
% Equity to Investors:	N/A	N/A	N/A	N/A	N/A	10.0%	20.0%	25.0%	30.0%	N/A
Company's Estimated Equity Value:	N/A	N/A	N/A	N/A	N/A	\$ 250.0	\$ 350.0	\$ 450.0	\$ 550.0	N/A
Equity Granted to Investors:	N/A	N/A	N/A	N/A	N/A	25.0	70.0	112.5	165.0	N/A
Yield to Exit:	N/A	N/A	N/A	N/A	N/A	27.201%	26.784%	26.188%	25.922%	N/A

Which of the following statements describe(s) a POTENTIAL PROBLEM that might cause the hedge fund to object to this proposal?

- For the extra risk and additional duration, the additional Yield to Exit is too low to compensate the investors.
- The assumed growth in the company's Equity Value is very aggressive, and if it does not reach those targets, the Yield to Exit will be significantly below the figures shown here.
- The % Equity Granted to Investors should be highest in the beginning and lowest at the end, so that the company is incentivized to wait until maturity and not repay the bond early.
- All of the above.
- Statements 1 and 2.
- Statements 2 and 3.

g. Statements 1 and 3.

3. Consider a company that currently has an Interest Coverage Ratio of 7.0x, an Operating Margin of 15.0%, and a Leverage Ratio of 2.5x. The company has a credit rating of “Baa2” from Moody’s, and its credit stats and ratios are in-line with those of other companies in the Baa2 category.

The company plans to issue a zero-coupon, 10-year Convertible Bond to raise additional funds for its international expansion, and it anticipates a credit rating downgrade shortly after the issuance.

If the company’s credit rating drops from Baa2 (“lower medium grade”) to Ba2 (“non-investment grade speculative”), which of the following factors is the MOST PLAUSIBLE one that could explain this downgrade, in which the company’s rating falls by an entire category?

- a. After the issuance, the company’s Interest Coverage Ratio falls from 7.0x to 4.0x.
- b. After the issuance, the company’s Leverage Ratio increases from 2.5x to 3.5x.
- c. After the issuance, the company’s Operating Margin declines to 10.0% because of the additional spending for the international expansion.
- d. After the issuance, new companies enter the market, and large companies in the space start building similar products/services with their internal teams.