Baylor University
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Department of Finance, Insurance & Real Estate

Risk Management
Dr. Garven
Problem Set 9

Name: _____

Show your work and write as legibly as possible. Good luck!

Consider two firms that differ from each other in terms of value and risk of corporate assets, and degree of financial leverage. Firm 1 owns assets worth \$30,000,000, and has issued zero coupon bonds with a face value of \$15,000,000. On the other hand, Firm 2 owns assets worth \$50,000,000 and has issued zero coupon bonds with a face value of \$30,000,000. The standard deviation for Firm 1's assets is $\sigma = 30\%$, whereas the standard deviation for Firm 2's assets is $\sigma = 40\%$. Assume that both firms will be liquidated one year from today and that the rate of interest is 3%.

1. What is the fair market value for the bonds issued by Firm 1? What is the dollar value of Firm 1's limited liability put option? What are the yield to maturity, credit risk premium, and risk neutral probability of default for Firm 1's bonds?

2. What is the fair market value for the bonds issued by Firm 2? What is the dollar value of Firm 2's limited liability put option? What are the yield to maturity, credit risk premium, and risk neutral probability of default for Firm 2's bonds?

3. Suppose an insurer offers credit enhancement schemes to both firms, which ensure that neither firm will default on its debt. Assuming that the credit enhancement market is competitively structured, how much should each firm expect to pay for this service, and what impact will credit enhancement have on the yields to maturity for these bonds?