ECON 612: MONEY AND BANKING
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EXAMPLE 8.8 *
SOLUTIONS AND EXPLANATIONS

COLOR LEGEND

❋ HEADINGS

❋ GIVEN/PREVIOUSLY FOUND INFORMATION

❋ CONCEPTS YOU SHOULD ALREADY KNOW

❋ ANSWER

❋ ANNOTATIONS AND
EXTRA EXPLANATIONS

* A COPY OF THE PROBLEMS IS ATTACHED AT
THE END OF THIS DOCUMENT. THERE MAY BE
SOME DIFFERENCES BETWEEN THIS VERSION
AND THE ONE AVAILABLE ON CANVAS.

GIVEN INFORMATION

$D_B = \$250$

$D_S = \$45$

$D_J = \$45$

$S(A) = \$290$

$P(S|A) = 0.6$

$F(A) = \$125$

$P(F|B) = 0.4$

$S(B) = \$340$

$P(S|B) = \frac{1}{3}$

$F(B) = \$25$

$P(F|B) = \frac{2}{3}$

① FINDING ⓐ

ⓐ $= 0.6(250) + 0.4(125)$

ⓐ $= 200$

FINDING ⓒ

ⓒ $= 0.6(40) + 0.4(0)$

ⓒ $= 24$

FINDING ⓔ

ⓔ $= 0.6(0) + 0.4(0)$

ⓔ $= 0$

FINDING ⓑ

ⓑ $= \frac{1}{3}(250) + \frac{2}{3}(25)$

ⓑ $= 100$

FINDING ⓓ

ⓓ $= \frac{1}{3}(45) + \frac{2}{3}(0)$

ⓓ $= 15$

FINDING ⓕ

ⓕ $= \frac{1}{3}(45) + \frac{2}{3}(0)$

ⓕ $= 15$

② CONCLUSION

200 > 100, SO BANK PREFERS A. 24 > 15, SO SENIOR PREFERS A. 0 < 15, SO JUNIOR PREFERS B.

③ CONCLUSION

JUNIOR FOR $45

④ CONCLUSION

FREE-RIDING

⑤ ⓐ GIVEN INFORMATION

BANK BUYS JUNIOR AND SENIOR

FINDING BP

$BP = 200 - 45 - 45 = \$110$

ⓑ GIVEN INFORMATION

BANK DOESN'T BUY ANY DEBT

FINDING BP

$BP = 0.6(290) + 0.4(125) - 45 - 45 = \$134$

Example 8.8

Suppose a firm now has three kinds of debt, in decreasing order of seniority, debt in parentheses: bank ($250), senior bondholder ($45), junior bondholder ($45). It declares bankruptcy and a restructuring is needed. Two plans are under consideration: with outcomes and probabilities in parentheses: Plan A, $290 (3/5), $125 (2/5). Plan B $340 (1/3), $25 (2/3).

(1) Calculate the payoffs under each plan for each participant and put in the table below:

Claimant	Expected Payoff from A	Expected Payoff from B
Bank	(a)	(b)
Senior Bondholder	(c)	(d)
Junior Bondholder	(e)	(f)

(2) Which plan does each claimant prefer?

(3) Which claimant does the bank have to buy out?

(4) Why may the other claimant also ask for a buyout?

(5) Find the bank's payoff after all the buyouts in each of the following cases:

   (a) The bank actually retires the bought-out debt and doesn't inherit the debt.

   (b) The bank doesn't retire the debt and instead inherits the debt, and still acts as a claimant.