

Name _____

Finance II (441)

Professor Eisfeldt/Petersen/Sapienza

Corporate Finance Final: Spring 2001

- 1) Time limit: you have two hours to complete the exam.
- 2) The exam is closed book/closed note. You may not use any outside materials. I highly recommend you use a calculator. Potentially useful formulas have been included on the last page of the exam.
- 3) Point totals for each question are specified in parentheses. These are an indication of how hard I believe the question is. There are 240 total points.
- 4) Circle your numerical answers. This makes it easier for me to find them. If you get stuck on the math, tell me what the correct answer should be based on your intuition.
- 5) Unless the question specifies otherwise, there are no taxes or transaction costs.
- 6) As always, I expect you to abide by the honor code. I trust that no one will give or receive assistance which gives them an unfair advantage over other students.
- 7) Stereotypic economist answers (completely accurate but totally irrelevant) will not raise your score. Statements which are false will lower your score.

Question	Points
1 (55)	
2 (30)	
3 (80)	
4 (75)	
Final Exam	
Midterm Exam	
Face card and homework	
Total	

Please put my exam in my mailbox (circle one):

First year

Second year

Exchange student

Downtown

- 1) Irish Petroleum (IP) is a privately held firm which extracts and sells oil. Due to operational considerations, next year's production is already fixed at 100K barrels of oil. The cost of extraction is 80 Irish Punts (P) per barrel which is payable today. After paying the extraction cost, IP will have 3,000K in cash remaining. Selling the oil is IP's only source of revenue next year. The expected price of oil will either be 50P or 150P with equal probability. IP will use this revenue to pay off the 6,000K of interest and principal which is due next year. The β of oil price risk is 1.3 and the current one year risk free rate is 1%.
- A) If Irish Petroleum decided to lock in their revenues with a forward contract, what would their expected revenue be next year? Explain. Round your answer to the nearest punt.(10)
- B) Irish Petroleum's bank requires that they hedge enough of their risk to make the debt risk free. Assume for the moment that Irish Petroleum has no additional investments or operations. If IP sold 100K barrels of oil through the forward market, would the debt be risk free? Explain. Hint: What is the cash flow available for debt repayment in each state? (10)

- C) IP has the option to develop additional oil fields next year, but the investment is only profitable at prices above 100/barrel. The cost of development will be between 7,000K and 8,000K but the exact amount will not be known until next year. Assume that as a private firm, IP will not be able raise additional capital from the debt or equity market next year. If the bank let the firm hedge by purchasing puts instead of selling forwards, which should IP choose? Explain. Assume the strike price on the put is the same as the forward price you derived in A) and that both the forward and the option are correctly priced. (25)
- D) You believe that the market is over estimating the idiosyncratic volatility of oil prices. How does this affect your choice of how to manage your oil price risk (forward or options). Explain. (10)

2) Short Discussion Questions.

A) The larger the expected costs of financial distress, the lower is the expected return on the portfolio of all the firm's assets. True, False or Uncertain. Explain. (10)

B) When managers issue equity, the market price of their stock often falls. This is evidence of managers pursuing their own interests? True, False, or Uncertain. Explain. (10)

C) When the Internet bubble burst, the equity value of levered web hosting firms dropped more than the equity value of all equity web hosting firms. This difference is due to the cost of financial distress. True, False or Uncertain? Explain. (10)

- 3) Sapien is a web firm which designs, implements, and maintains a cutting-edge Internet presence for its clients. The value of its current assets (investments it has already made) depends upon the growth of the web and total demand for e-commerce support. The firm can expand its business for an additional investment of \$800K. The net present value of this project is reported below. The risk free rate is 5 percent. Probabilities of each state occurring are also given in the table. Initially assume Sapien can only issue equity and the manager maximize the wealth of old shareholders.

	State 1	State 2	State 3	Expected
Probabilities	40%	20%	40%	
Assets in Place	1600	1200	400	
Investment Cost	800	800	800	
NPV[Expansion]	200	-400	200	
Firm (Asset)Value				

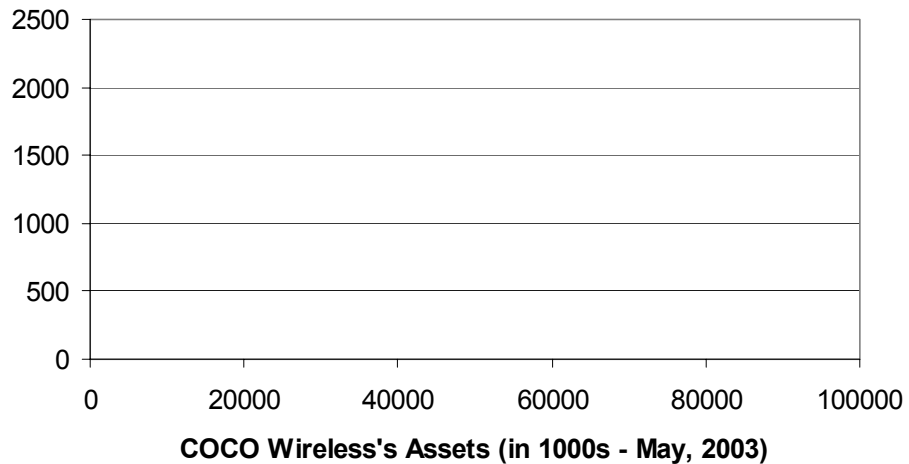
- A) If Sapien's manager always maximizes shareholders wealth and both the manager and the market know the true state of the world when the decision to raise money and invest is made, what investment decision will be made in each of the three states? Explain (10)
- B) Now assume that the manager knows the true state, but the market does not. The manager can use her information to choose whether to invest but does not use her knowledge to time equity issues, what percentage of the equity will the market require in exchange for the market's \$800K investment? (15)

- C) If the manager is maximizing the wealth of old shareholders and can sell equity at the terms you described in B), does she have an incentive to use her knowledge of the true state when deciding whether to issue equity and invest? Explain. (20)
- D) Instead of selling equity, the firm can borrow \$800K for one year. Based on the value of Sapient's existing assets, the debt is risk free no matter which state occurs. However, lenders cannot assess the value of existing assets. As a consequence, the bond market is demanding a coupon rate of 8% as a condition for lending Sapient the \$800K. One of the advantages of issuing debt is that this will create tax shields. Based on a 34% corporate tax rate, calculate the NPV of financing in this case. Assume there are no costs of financial distress. (20)
- E) Based on the NPV of financing for debt in which states should the manager borrow to finance the expansion project? Explain. (15)

- 4) John McClain was contemplating the future of his business: COCO Wireless. He owns 23% of the one million shares outstanding. The firm has no debt. COCO's goal is to be the leading provider of wireless devices to elderly care facilities. The market is projected to be worth up to \$1B a year in revenues. To fend off potential competitors, COCO Wireless needs to raise a significant amount of capital today and Mr. McClain is considering issuing preferred equity. Like bonds, preferred equity has a specified liquidation value (like the face value) and a dividend rate (like the coupon rate). The security recommended by his bankers: Turbo Charged Preferred (TCP) has two parts. It is preferred equity which can be converted into 25 shares of COCO stock in two years (May 2003). The liquidation value for the TCP is \$1000 and the dividend rate is zero. In addition, each TCP has 25 warrants attached to it. Each warrant gives the owner the right to purchase an additional share of COCO for a fixed price in two years. To exercise the warrants, the owner must pay the fixed price to the firm and would receive a share of stock in return. COCO plans to sell 20,000 TCPs for a price of \$1000 each. If COCO issued ordinary preferred (i.e. no conversion features), the dividend rate would have to be 7% for it to sell for par (\$1000). The current risk free rate is 5%.
- A) What is the conversion price of the convertible preferred at maturity? Explain. When you convert the preferred equity into common equity, you do not give up the warrants. (10)
- B) If the strike price for the warrants attached to the TCP is \$40, what is the implied value of a single warrant? Explain. (20).
- C) Describe the circumstances under which the owner of the TCP would choose to convert the preferred equity into common equity, but not exercise the warrants which are attached to it. Explain. Assume you have no inside information and the TCP can be bought or sold for their true value. (10)

- D) Draw the payoff diagram to one TCP as a function of the value of the firm's assets the day before the preferred matures (i.e. tomorrow owners of the TCP will receive the liquidation value or shares). Make sure your diagram is clearly labeled. (25)

Payoff to Turbo Charged Preferred



- E) Mr. McClain is concerned about diluting his ownership percentage and thus control of COCO. If he issued a convertible bond with a face value of \$1000, a coupon rate of zero and a conversion ratio of 50, would this change the dilution of control that he faces? Explain completely. (10)

Equations and Facts

Risk premiums:

$$\begin{aligned} E[r_{\text{market}} - r_{\text{riskfree}}] &= 8.5\% \\ E[r_{\text{long government bond}} - r_{\text{riskfree}}] &= 1.1\% \end{aligned}$$

Payoff to a Call Option:

$$\text{Payoff} = \text{Max}\{ 0, \text{Stock price} - \text{Strike price} \}$$

Payoff to a Put Option:

$$\text{Payoff} = \text{Max}\{ \text{Strike price} - \text{Stock price}, 0 \}$$

Expected rate of return on equity:

$$r_{\text{equity}} = r_{\text{assets}} + \frac{D}{E} (r_{\text{asset}} - r_{\text{debt}})$$

NPV of a project:

$$\text{NPV[Project | Capital Structure is Irrelevant]} + \text{NPV[Financing]}$$

Weighted Average Cost of Capital

$$r_{\text{WACC}} = r_E \frac{E}{D + E} + r_D (1 - \tau) \frac{D}{D + E}$$

NPV of a Futures Contract:

$$\frac{\text{Futures Price}_0 - E_0 [\text{Commodity Value}_1] \left(\frac{1 + r_{\text{riskfree}}}{1 + r_{\text{commodity value}}} \right)}{1 + r_{\text{risk free}}} = 0$$

Corporate Finance Final Exam Answers – Spring 2001

1) Hedging Irish Petroleum.

- A) Given a β of oil, the expected return on oil would be 12.1 percent. Given a barrel of oil is expected to be worth 100P next year (50P or 150P with equal probability), this implies the futures price for oil (set today but for settlement next year) is 90.14.

$$\begin{aligned} \text{Futures Price}_{0,1} &= E_0 [\text{Commodity Value}_1] \left(\frac{1 + r_{\text{riskfree}}}{1 + r_{\text{commodity value}}} \right) \\ &= 100 \left(\frac{1 + 0.01}{1 + 0.01 + 1.3(0.085)} \right) \\ &= 100 \left(\frac{1 + 0.01}{1 + 0.121} \right) = 90.14 \end{aligned}$$

Given total production of 100K, total revenues (expected and actual) is 9,014K punt.

- B) Since the hedged revenue is always 9,014K punts (your answer to A) and the promised debt payment is 6,000K, the debt can always be repaid. The debt is risk free. The cash flow after debt repayments is 3,000K if IP hedged with the forward contract.¹
- C) Futures versus Options. In this case, buying the put is better than selling the forward. The payoff to shorting the futures and to buying the put are the same if the oil price is less than 90/barrel (see Table I). This is true as long as the strike price on the put is the same as the forward price. The payoff to both the for shorting the forward and buying the put is 4,000K (100K [90 - 50]). Thus the difference isn't that you get money when oil prices are low. Both derivatives do this

Table I	$P_{\text{Oil}} = 50$		$P_{\text{Oil}} = 150$	
Derivative	Forward	Put	Forward	Put
Revenues	5,000	5,000	15,000	15,000
Debt repayment	-6,000	-6,000	-6,000	-6,000
Derivative	4,000	4,000	-6,000	0
Available for Investment (ignoring cash)	3,000	3,000	3,000	9,000

The difference is when you pay for this cash flow. With the futures contract, you pay nothing today but you pay 6,000 (100 (90 - 150)) when oil prices are high (see Table I).

¹ If you wanted to include the cash you have today (3,000K), you needed to move it to next year in some way. If you had invested it in T-bills it would be worth 3,030K next year (at 1%). Since the debt is already risk free, this doesn't change your answer.

With the put, you pay the premium today and nothing next year if oil prices are high.

Which is better depends upon when you have 'extra' cash. Today you have 3,000 in cash, but no investment projects. Next year you have an investment project, but only when oil prices are high. When oil price are high, is when you need cash to invest. With the forward you will have 3,000K next year plus the proceeds of investing the current cash today (3,000). This will be a little over 6,000K if you invest the cash in T-bills, which is not enough to fund the investment project which costs 7,000-8,000K. If instead you used the 3,000K to purchase puts today, next year you will have 9,000 after debt repayments. This is more than sufficient to fund the positive NPV project when oil prices are high. Thus the put is better than the forward. It takes money away when you have 'extra' cash – today opposed to next year when oil prices are high.²

Looking at Table I, it seems like the put is better than the forward, b/c the expected cash flows are higher if you buy the put. This ignores the fact that you pay for the put but the up front cost of the forward is zero. Remember, both are correctly priced. So if the put has a higher expected cash flow, it must have a higher price.

- D) If the market is over estimating the volatility of oil prices, this has no effect on the forward contract. However, it means the price of the put is greater than the value. Thus buying the put is a negative NPV. This makes the put a less desirable hedge. If the mispricing is bad enough, you might even switch to the forward contract. How mispriced the put must be before you switch to the forward, depends upon how much more valuable money is next year when oil prices are 150 (when the forward takes money away) relative to the value of money today (when the put takes money away).

2) Short Discussion Questions.

- A) Uncertain. The expected return on the assets will probably rise. The expected return on the assets depends upon the β of the assets. Thus to answer this question you need to think about how the covariance of the firm's total assets with the market changes as costs of financial distress increase. Since the costs are more likely to occur in recessions (this is when the firm's cash flows are probably low and thus they are unable to pay their debt), increases in the costs of financial distress will likely increase the β of assets. In recessions the assets fall more when there are costs of financial distress than when there are no costs of financial distress. The only time costs of financial distress will not increase the β of the firm's assets is when their occurrence is uncorrelated with the market return. This will only happen when the β of the firm's real assets is zero.

² The question didn't ask, but some of you asked after the exam, how to price the put. Since oil prices can take on only one of two values next year, we can price the puts by constructing a replicating portfolio (see the supplementary exercises for Lecture 4). By investing money in t-bills (at 1%) and shorting oil, we can create a portfolio that has exactly the same payoff as a put. The price of this portfolio is therefore the price of the put. We need to find the number of dollars to invest in t-bills (B) and the number of barrels of oil to short (X), which replicates the payoff to the put.

$$\begin{aligned} \text{Put}(X=90, P_{\text{oil}}=50) &= B(1 + .01) - X \cdot 50 = 90 - 40 = 40 \\ \text{Put}(X=90, P_{\text{oil}}=150) &= B(1 + .01) - X \cdot 150 = 0 \end{aligned} \tag{9}$$

Solving for X and B, implies that we need to purchase 59.4 of t-bills and short 0.4 barrels of oil. Given a current price of oil of 100/barrel, means that one put costs 19.4 punts ($59.4 - 0.4 \cdot 100$) and 100K punts would cost 1940K punts.

It is also true that the costs of financial distress will lower the future value of the firm (since sometimes they have to pay these costs). This will lower the expected future value and thus the value today. This isn't sufficient to tell us how the expected return will change. Whether the expected return on the firm's total assets rises or falls depends upon how these costs covary with the market.

- B) Uncertain. This may be consistent with manager's maximizing shareholder wealth. The manager may be raising equity now for future investment projects. If the manager expects the equity to be less mispriced now than it will be next year and the firm may have positive NPV projects next year, this can be good for shareholders – even though the stock price falls. The stock price falls because bad information is released to the market (the stock is over valued by the market). This will come out eventually. Thus whether value is created or destroyed for shareholders depends upon the types of projects the manager's select.
- C) Uncertain. Even in an M&M world where the costs of financial distress are zero, the value of equity will fall more for a levered firm than an unlevered firm. Debt in the capital structure means the value of the equity rises faster when the assets value rises and falls faster when the asset value falls. Financial distress will cause the value of the assets – and thus the equity to fall more – in bad states of the world. Thus the situation described could arise with costs of financial distress or without costs of financial distress.
- 3) Sapien Web Design.
- A) Since the market knows the true state of the world, the equity is always correctly priced – i.e. the NPV of financing is zero. This is a M&M world. Thus to maximize the wealth of the old shareholders, the manager invests only in positive NPV projects. She invests only in states 1 and 3.
- B) If manager does not use her information to time equity issue, they will issue and invest only when the project has a positive NPV on a stand-alone basis (i.e. not including the NPV of financing). In this case the manager will sell equity in state 1 and 3 (as we said in A). The market will know that the true state is state 1 or 3, but not which one. When the market sees the firm issue equity the probability of state 1 and 3 is 50 percent each (conditional on knowing the state is 1 or 3, the probability of each state is 50%). The expected value of the firm (including the contribution of the new equity holders) will be thus be 2000. In exchange for \$800K of cash, the new shareholders will require \$800K of equity or 40% of the equity ($0.40 * 2000 = 800$).

	State 1	State 2	State 3	Expected
Probabilities	50%	0%	50%	
Assets in Place	1600	1200	400	1000
Investment Cost	800	800	800	800
NPV[Expansion]	200	-400	200	200
Firm (Asset)Value	2600	–	1400	2000

In state 2, I had the firm not issue equity since the expansion project is a negative NPV investment. How would the answer change if you assumed they issued equity? If the manager issues equity and invest in the negative NPV project, this lowers old shareholders wealth. If they don't invest then old shareholders wealth is 1200; if they do invest old shareholders wealth is 800 (1200-400). Thus if you have the manager issue equity, you have to figure out where to put the cash. Since the expansion project is a negative NPV projects, they would put the money in the bank or buy T-bills. These are zero NPV projects and are always available. In this case, the firm will be worth 2000 post issue (1200 + 800 + 0). So assuming the manager issues equity in state 2, would not have changed your answer. You would still have gotten 40%.

- C) The manager will have an incentive to use her information to time equity issues and will thus not issue and invest when the NPV of financing (due to mispriced equity is sufficiently negative). This will occur when the firm's assets and equity are worth sufficiently more than the market's estimate. This occurs in state 1. The market's estimate of the value of the firm's equity (and assets) is \$2000K, but in state 1 they are actually worth \$2600K. Thus the APV of the investment project is:

$$\begin{aligned} \text{NPV[Project]} &= \text{NPV[Project | CSI]} + \text{NPV[Financing]} \\ &= 200 + [800 - 0.40 (2600)] \\ &= 200 - [240] = -40 \end{aligned} \quad (9)$$

Since this is negative, the manager will choose not to invest in state 1. She will only invest in state 3.

Another way to answer this question is to look at the old shareholders' wealth if the firm issues equity and invest in state 1 versus their wealth if the firm does not issue equity and invest in state 1. If the firm does issue and invest, the firm's assets are worth \$2600K. Old shareholders now own 60 percent of the firm, so their wealth is \$1560K. If the firm does not issue and invest, the old shareholders' wealth is \$1600K, the value of the assets in place. Old shareholders are better off not issuing equity and not taking the positive NPV project, as their wealth is higher by \$40K.

- D) The NPV of financing is non-zero unless we are in an M&M world. In this case, the NPV of financing is non-zero for two reasons. First the debt creates a tax shield – this is a benefit of debt. Secondly, the debt is mispriced – which is a cost of debt in this case. The NPV of is therefore:

$$\begin{aligned} \text{NPV[Financing]} &= \text{PV[TaxShield]} + \text{NPV[Debt issue]} \\ &= \frac{0.34 (0.08) 800}{1 + 0.05} + \left[800 - \frac{800 (1 + 0.08)}{1 + 0.05} \right] \\ &= 20.72 - 22.86 = -2.14 \end{aligned} \quad (10)$$

Notice which rates are in the numerator and denominator of the tax shield. Since the debt is risk free, so is the tax shield. Thus the correct discount rate is the riskfree rate (5%). In the numerator, we want the expected tax savings, this depends upon the expected return on the debt. When we borrow 800, we promise to pay back 864, which means the promised return is 8% – just like the coupon rate. Since the debt is riskfree, the expected rate of return is equal to the promised rate of return. Thus we want 8% in the numerator. The expected rate

of return on the debt is not equal to the discount rate in this case, since the debt is mispriced. The expected rate of return is equal to the discount rate only when the debt is correctly priced. In this example, the tax shield is worth more than normal, but this advantage is more than wiped out by the mispricing of the debt.

- E) In state 1, the manager should borrow and invest. In state 1, the NPV of debt financing is negative but less negative than the NPV of equity financing (see your answer to C). Thus debt is 'cheaper' than equity financing. In addition, although the NPV of debt financing is negative, it does not completely eliminate the NPV of the expansion project. The APV of the expansion project with debt financing is positive ($200 - 2.14 = 197.86$), so debt financing is preferred.

In State 3, the NPV of the project is also 200, but in this state equity is cheaper than debt, so the manager's should not borrow to finance the project. Since the market can predict that the market will only issue equity in state 3, the equity will be priced conditional on the true state being state 3.³ Thus the NPV of equity financing is zero and the NPV of debt financing is negative (-2.14). The project will be financed with debt in state 1 and equity in state 3.

4) COCO Wireless.⁴

- A) At maturity, the equity will pay the liquidation value (1000) if it is not converted or 25 shares if it is converted. Thus the conversion price is \$40/share. Since the warrants are kept independent of whether the preferred is converted, we can ignore them for this calculation.
- B) The price of the entire security is \$1000. This consists of the straight preferred (like a straight bond) plus the conversion features. The TCP can be viewed as a straight preferred (with a zero dividend rate) plus 50 warrants. The strike price for all 50 warrants is \$40 each. The only difference between the warrants is the strike price on the first 25 are paid for by relinquishing the preferred equity (value \$1000) and the strike price on the next 25 warrants (these are ones that are attached) must be paid for in cash. The value of the two are thus equal. Since the TCP is worth \$1000 and the straight preferred portion of the TCP is worth \$873, this implies the 50 warrants are worth \$127. A single warrant is therefore worth \$2.20 ($127/50$).

$$\begin{aligned}
 V_{TCP} &= V_{\text{Zero rate preferred}} + 50 \text{ Warrants}(X=40) \\
 &= \frac{1000}{(1 + 0.07)^2} + 50 \text{ Warrants}(X=40) = 1000 \\
 &= 873 + 50 \text{ Warrants}(X=40) = 1000 \\
 &\rightarrow \text{Warrant}(X=40) = 2.54
 \end{aligned}
 \tag{11}$$

³ Since the market will realize it is state 3 if the firm announces an equity issue, the market will demand 57% of the equity ($800/1400$) for \$800K in cash.

⁴ This is the firm's second foray into wireless devices for the elderly. Their first product was a device which could be used to turn appliances such as lights on and off using sound waves. Thus by clapping, you could turn a light on or off. This is the origin of the firm's name (Clap On Clap Off). Out of curiosity, does anyone read the footnotes?

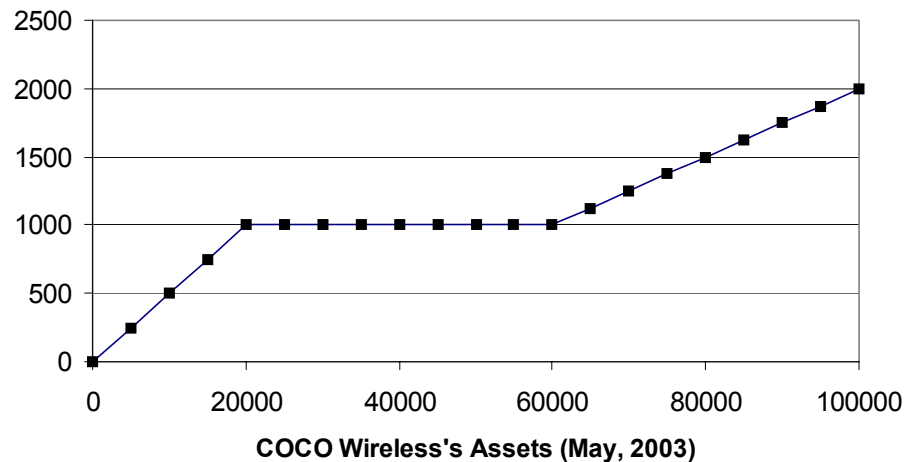
- C) The conversion value on the convertible equity is \$40 per share. Thus if the market price of stock higher than \$40 in two years, the owner of the TCP will convert his preferred into common stock. Since the strike price on the attached warrants, the decision rule for exercising the warrants is the same as for converting the preferred. If the owner does one, they will do the other. It is true that conversion of the warrants requires cash, but this should be easy to secure given the certain nature of the payoff to the warrants. If you don't have the cash, you can always sell the warrants to someone with the cash and they will convert.
- D) The first part of the payoff diagram looks like a standard convertible bond. The total liquidation value (promised payment) on the 20,000 bonds is \$20M. Thus the value of the firm's assets goes solely to the preferred owners as long as the firm value is below \$20M. The value of each TCP rises from zero (when total firm assets are worth zero) to \$1000 (when total firm assets are worth \$20M).

The next kink in the diagram comes when the equity price has risen to \$40 per share (the conversion value). Assuming the preferred has converted into common, this implies there will be 1.5M shares tomorrow (1M initial shares plus 20K * 25 – I am temporarily assuming the warrants are not being exercised, I will show in a minute why this is ok). Thus the total common equity value – and the total asset value the day before maturity – is 40 * 1.5M or \$60M. If the warrants had been converted, then the number of shares (tomorrow) would actually be 2M. However, when the warrants are converted, an additional \$20M will be paid into the firm tomorrow (20K * 25 * 40). Thus if the assets are \$60M today, they will be \$80M tomorrow. Given there will be 2M shares tomorrow, the common stock price is \$40 – and the payoff to the TCP is \$1000.

The last step is to draw the payoff for asset values above \$60M. Once the asset value rises above \$60M, both the preferred will be converted into common equity and the warrants will be exercised. Take the case where the assets (prior to maturity are \$100M. Then the day after maturity (when the warrants are exercised), the value of the assets and the value of common equity will be \$120M. Given there will be 2M shares, the stock price will be \$60 per share. Since the convertible preferred and the warrants exercised, then the payoff to the TCP will be:

$$\begin{aligned}\text{Payoff}_{\text{TCP}} &= 25 P_{\text{COCO}} + 25 (P_{\text{COCO}} - 40) \\ &= 25 (60) + 25 (60 - 40) = 2000\end{aligned}\tag{12}$$

Payoff to Turbo Charged Preferred



One last observation. Normally, the second kink point occurs (when there is no other debt or preferred) where the fraction of the equity into which the convertible converts times the value of the assets is equal to the total payment on the debt or preferred. That works here is you assume that the convertible owners will own one third of the equity ($0.5M/1.5M$). Then the slope of the line beyond the conversion point (\$40/share) is the fraction of the firm owned by the new equity holders. Thus as the value of the firms assets rises from \$60M to 100M (or by \$40M), the total payoff to the new equity holders rises by \$20M ($1000 * 20K$ TCPs), or half of the total. In this case, the new equity holders will own half of the firm ($1.0/2.0$). The reason these two ratios don't match is in the case of warrants, additional money is paid into the firm – in this case the extra money is worth \$20M.

- E) This will raise the probability that Mr. McClain's ownerships will be diluted. Even though the security seems the same (same face value, same coupon rate, and both when 'converted' turn into 50 shares), they are not the same. In this case, you give up only the preferred liquidation value (\$1000) in exchange for the 50 shares – not the liquidation value plus another \$1000 of cash. Thus the conversion price for the convertible preferred with a conversion ratio of 50, would be only 20. Since the conversion price is lower, conversion is more likely. The probability that Mr. McClain's voting control will shrink is therefore much more likely.