ACF 302 - Week 19

Workshop: Working capital management and short-term financing
Mergers and Acquisitions part I

Berk and DeMarzo Chapters 26 – 27 - 28

(This session is being recorded!)

Lancaster University Management School

Outline of the session

- We're revising theoretical questions of ST financing

- Get started with M&A (will complete M&A in workshop Week 20).
  - MCQs (1 – 6)
  - Exercise (1)

1) The term 5/10 net 30 means:

A. If the invoice is paid within 10 days a 5% discount can be taken. If the invoice is paid between 11 and 29 days a 1% discount can be taken. After 30 days the full invoice is due.

B. If the invoice is paid within 5 days a 10% discount can be taken, otherwise the full invoice is due in 30 days.

C. If the invoice is paid within 2 days a 10% discount can be taken, otherwise a 2% discount can be taken if the invoice is paid in 30 days.

D. If the invoice is paid within 10 days a 5% discount can be taken, otherwise the full invoice is due in 30 days.

Answer: D

8) Which of the following statements is FALSE?

- A) A firm should always pay on the latest day allowed.
- B) The lower the discount percentage offered, the greater the cost of forgoing the discount and using trade credit.
- C) A firm should choose to borrow using accounts payable only if trade credit is the cheapest source of funding.
- D) A firm should strive to keep its money working for it as long as possible without developing a bad relationship with its suppliers or engaging in unethical practices.

Answer: B. If the discount is low, then the cost of forgoing the discount is low.

Exercise 9

Occasionally, a company will encounter circumstances in which cash flows are temporarily negative for an unexpected reason. We refer to such a situation as:

a) a liquidity shock.

b) a negative cash flow shock.

c) a negative liquidity shock.

d) a cash crunch.

Answer: B

10) Which of the following statements is FALSE?

A. Firms with seasonal cash flows may find themselves with a surplus of cash during some months that is sufficient to compensate for a shortfall during other months. However, because of timing differences, such firms often have short-term financing needs.

B. A company forecasts its cash flows to determine whether it will have surplus cash or a cash deficit for each period.

C. Like seasonalities, positive cash flow shocks can create short-term financing needs.

D. When sales are concentrated during a few months, sources and uses of cash are also likely to be seasonal.

Answer: C. Positive cash flow shocks do not create short term financing needs but excess of cash that needs to be reinvested.

11) Which of the following statements is FALSE?

A. If a company anticipates an ongoing surplus of cash, it may choose to increase its dividend payout.

B. Seasonal sales can create large short-term cash flow deficits and surpluses.

C. The first step in short-term financial planning is to forecast the company's future net working capital.

D. Deficits resulting from investments in long-term projects are often financed using long-term sources of capital, such as equity or long-term bonds.

Answer: C. The first step in short-term financial planning is to forecast the company's future cash flows.

12) A written, legally binding agreement that obliges the bank to lend a firm any amount up to a stated maximum, regardless of the financial condition of the firm (unless the firm is bankrupt) as long as the firm satisfies any restrictions in the agreement is called:

A. a bridge loan.

B. a single, end-of-period-payment loan.

C. a short-term mortgage loan.

D. a committed line of credit.

Answer: D

13) Which of the following statements is FALSE?

A. The matching principle indicates that the firm should finance permanent working capital with short-term sources of funds.

B. Following the matching principle should, in the long run, help minimize a firm's transaction costs.

C. In a perfect capital market, the choice of financing is irrelevant; thus, how the firm chooses to finance its short-term cash needs cannot affect value.

D. A portion of a firm's investment in its accounts receivable and inventory is temporary and results from seasonal fluctuations in the firm's business or unanticipated shocks.

Answer: A. The matching principle indicates that the firm should finance permanent working capital with long-term sources of funds.

(Remember from the lecture)27.2 The Matching Principle

- Matching Principle
  - States that a firm's short-term needs should be financed with short-term debt and long-term needs should be financed with long-term sources of funds

14) Which of the following statements is FALSE?

A. Because investment in permanent working capital is required so long as the firm remains in business, it constitutes a long-term investment.

B. Because temporary working capital represents a short-term need, the firm should finance this portion of its investment with short-term financing.

C. Temporary working capital is the difference between the lowest level of investment in short-term assets and the permanent working capital investment.

D. The matching principle states that short-term needs should be financed with short-term debt and long-term needs should be financed with long-term sources of funds.

Answer: C. Temporary working capital is the difference between the actual level of investment in short-term assets and the permanent working capital investment.

17) Which of the following is NOT a specific financing option for temporary working capital?

A) Treasury bills

B) Secured financing

C) Bank loans

D) Commercial paper

Answer A

20) Which of the following statements is FALSE?

A. If a factoring arrangement is with recourse, the factor will pay the firm the amount due regardless of whether the factor receives payment from the firm's customers.

B. In a factoring of accounts receivable arrangement, the firm sells receivables to the lender (i.e., the factor), and the lender agrees to pay the firm the amount due from its customers at the end of the firm's payment period.

C. Businesses can also obtain short-term financing by using secured loans, which are loans collateralized with short-term assets—most typically the firm's accounts receivables or inventory.

D. Both the interest rate and the factor's fee vary depending on such issues as the size of the borrowing firm and the dollar volume of its receivables.

A) If a factoring arrangement is without recourse, the factor will pay the firm the amount due regardless of whether the factor receives payment from the firm's customers.

21) Which of the following statements is FALSE?

A. A public warehouse is a business that exists for the sole purpose of storing and tracking the inflow and outflow of the inventory.

B. A warehouse arrangement is the riskiest collateral arrangement from the standpoint of the lender.

C. Because the warehouser is a professional at inventory control, there is likely to be little loss due to damaged goods or theft, which in turn lowers insurance costs.

D. A field warehouse is operated by a third party, but is set up on the borrower's premises in a separate area so that the inventory collateralizing the loan is kept apart from the borrower's main plant.

- Answer: B) A warehouse arrangement is the least risky collateral arrangement from the standpoint of the lender.

Mergers and Acquisitions

- MCQs (1 – 6)

- Exercises (1 – 3)

1) Fill in the blank in the following sentence:

In a _________ merger, the target and the acquirer operate in unrelated industries.

A. Conglomerate

B. Vertical

C. Horizontal

D. Diagonal

Answer: A

2) Which of the following statements is FALSE?

A) Cost-reduction synergies are hard to predict and achieve and rarely argued as a reason to pursue a merger or acquisition.

B) Small firms are often able to react in timely way to changes in the economic environment.

C) Synergies usually fall into two categories: cost reductions and revenue enhancements.

D) There may also be costs associated with size of the merged firm.

- Answer A: Cost reductions is the MOST common reason argued to justify an M&A.

Question 3)

- **When target shareholders exchange their old stock for new stock in the acquiring firm, this is known as a(n):**

A)exchange swap.

B)stock swap

C)term swap.

D)stock exchange.

Answer B

4) Which of the following statements regarding monopoly mergers is FALSE?

A. It is often argued that merging with or acquiring a major rival enables a firm to substantially reduce competition within the industry and thereby increase profits.

B. Financial researchers have found that the share prices of other firms in the same industry did not significantly increase following the announcement of a merger within the industry.

C. While only the merging company benefits when competition is reduced, all companies in an industry pay the associated costs.

D. Society as a whole bears the cost of monopoly strategies, so most countries have antitrust laws that limit such activity.

Answer: C. While all companies in an industry benefit when competition is reduced, only the merging company pays the associated

Question 5

Which of the following statements regarding risk arbitrage is FALSE?

A. Once a tender offer is announced, the uncertainty about whether the takeover will succeed reduces the volatility of the stock price. This uncertainty creates an opportunity for investors to speculate on the outcome of the deal without bearing the risk of volatility.

B. Traders known as risk-arbitrageurs, who believe that they can predict the outcome of a deal, take positions based on their beliefs.

C. A potential profit arises from the difference between the target's stock price and the implied offer price, and is referred to as the merger-arbitrage spread.

D. It is not true arbitrage because there is a risk that the deal will not go through. If the takeover did not ultimately succeed, the risk-arbitrageur would eventually have to unwind his position at whatever market prices prevailed.

- Answer: A) Once a tender offer is announced, the uncertainty about whether the takeover will succeed **adds volatility to the** stock.

Question 6

Which of the following statements is FALSE?

A) The takeover market is also characterized by merger waves—peaks of heavy activity followed by quiet troughs of few transactions.

B) Merger activity is greater during economic contractions than during expansions.

C) There are two primary mechanisms by which ownership and control of a public corporation can change: Either another corporation or group of individuals can acquire the target firm, or the target firm can merge with another firm.

D)Mergers and acquisitions are part of what is often referred to as "the market for corporate control.“

- B) Merger activity is greater during economic **expansions** than during contractions.

1) Consider two firms, Alpha Corporation and Omega Company. Both corporations will either make £10,000 or lose £4,000 every year with equal probability. The firms' profits are perfectly negatively correlated. If the corporate tax rate is 45%, what are the total expected after-tax profits of both firms when they are two separate firms, assuming no tax-loss carryforwards or carrybacks?

a) Calculate the Expected earnings if the two companies are run as a combined (merged) entity.

b) Consider the same information provided for Alpha and Omega in point ii), but with positively correlated firm's profits. Calculate the total earnings if they are run separately.

c) Calculate the total earnings if they are merged when they have positively correlated profits.

1-a) Expected profits of the combined entity (negative correlation):

- Two states: s1 and s2 with probability p(0.5) of happening.
- Negative correlation means that:
  - In s1 Alpha makes profits (10000) and Omega makes losses (-4000).
  - In s2 Alpha makes losses (-4000) and Omega makes profits (10000)

E(earnings) = 0.5 x (10000 – 4000) x (1-0.45) + 0.5 x (-4000 + 10000) x (1 – 0.45)

= (10000 – 4000) x (1-0.45)

= 3300

1-b) Expected profits of the combined entity (positive correlation):

- Two states: s1 and s2 with probability p (0.5).
- Positive correlation means that:
  - In s1 Alpha makes profits (10000) and Omega makes also profits 10000).
  - In s2 Alpha makes losses (-4000) and Omega makes losses (-4000)

E(earnings) = 0.5 x (10000 + 10000) x (1-0.45) + 0.5 x (-4000 -4000)

= 0.5 x (20000) x (1-0.45) – 0.5*8000

= 1500

1-C) Expected profits of the two separated entities (positive correlation):

- Two states: s1 and s2 with probability p (0.5).
- Positive correlation means that:
  - In s1 Alpha makes profits (10000) and Omega makes also profits 10000).
  - In s2 Alpha makes losses (-4000) and Omega makes losses (-4000)

E(earnings)_Alpha = 0.5 x (10000) x (1-0.45) + 0.5 x (-4000) = 750

E(earnings)_Omega= 0.5 x (10000) x (1-0.45) + 0.5 x (-4000) = 750

Total earning of running the two entities separated: £1500

Question 2) Motives to acquire

Your company has earnings per share of £4. It has 1 million shares outstanding, each of which has a price of £40. You are thinking of buying WhiteDot, which has earnings per share of £2, 1 million shares outstanding, and a price per share of £25. You will pay for WhiteDot by issuing new shares. <u>There are no expected synergies from the transaction.</u>

a) If you pay no premium to buy WhiteDot, what will your earnings per share be after the merger?

b) Suppose you offer an exchange ratio such that, at current preannouncement share prices for both firms, the offer represents a 20% premium to buy WhiteDot. What will your earnings per share be after the merger?

c) What explains the change in earnings per share in part (a)? Are your shareholders any better or worse off?

d) What will your price-earnings ratio be after the merger (if you pay no premium)? How does this compare to your P/E ratio before the merger? How does this compare to WhiteDot premerger P/E ratio?

Question 2 – a) No premium. Stock swap.

	EPS	Shares	Price per share
Acquirer	£4	1 million	£40
Target	£2	1 million	£25

You will have to issue 25/40 = 5/8 = 0.625 shares per share of TargetCo to buy it.
→ (5/8) × 1 million = 625,000 new shares.

Total Earnings = EPS x number of shares
Total Earnings acquirer = £4 x 1,000,000 = £4 million
Total Earnings target = £2 x 1,000,000 = £2 million
Total Earnings after the merger = £4 million + £2 million = £6 million

Total shares outstanding = shares of the acquirer + shares issued to buy the target
= 1,000,000 + 625,000 = 1,625,000

EPS after the merger = Total Earnings after the merger / Total shares outstanding after merger
= £6 million / 1,625,000
= £3.69

Question 2 – b) 20% premium

A 20% premium means that you will have to pay £25 × 1.20 = £30 per share to buy TargetCo

Exchange ratio = £30/£40 = 0.75 of your shares per share of TargetCo

New shares to issue = exchange ratio x number of shares target

= 0.75 x 1,000,000 = 750,000 shares

<u>After merger:</u>

EPS = £6 million / 1,750,000 = £3.43.

Question 2 –c) Change in EPS

- In part (a), the change in the EPS simply came from combining the two companies, one of which was earning £4 per share and the other was earning £2 per share.
- However, you will notice that even though TargetCo has half your EPS, it is trading for more than half your value. That is possible if TargetCo's earnings are less risky or if they are expected to grow more in the future.
- Thus, although your shareholders end up with lower EPS after the transaction, they have paid a fair price, exchanging their £4 per share before the transaction for either lower, but safer, EPS after the transaction, or lower EPS that are expected to grow more in the future.
- Either way, focusing on EPS alone cannot tell you whether shareholders are better or worse off.

Question 2 – d) P/E ratios

- If you simply combine the two companies **without** any indicated synergies and paying no premium:
- Total value of the company = £40 million + £25 million = £65 million.
- Total earnings totaling £6 million
- Consolidated firm P/E ratio = £65/£6 = 10.83.
- Acquirer P/E ratio before the merger was £40/£4 = 10
- TargetCo's P/E ratio = £25/£2 = 12.5.
- You can see that by buying TargetCo for its market price and creating no synergies, the transaction simply ends up with a company whose P/E ratio is between the P/E ratios of the two companies going into the transaction.
- Again, simply focusing on metrics like P/E does not tell you whether you are better or worse off. (Your P/E went up from 10 to 10.83, but your shareholders are no better or worse off. The merger has not created any value.)

Question 3)

- **Sol has earnings per share (EPS) of £2.70, 3.8 million shares outstanding, and a share price of £31. Sol is considering buying Luna Industries, which has earnings per share of £2.20, 1.8 million shares outstanding, and a share price of £18.5. Sol will pay for Luna by issuing new shares. There are no expected synergies from the transaction. Assume that Sol pays no premium to acquire Luna.**

  a) Calculate Sol's price-earnings (P/E) ratio pre-merger.

  b) Calculate Sol's total number of shares in the new merged firm.

  c) Calculate the total earnings of the merged firm.

  d) Calculate the EPS of the merged firm.

  e) Calculate the price-earning (P/E) ratio post-merger

Question 3)

	EPS	#shares	price share
Acquirer	2.7	3800000	31
Target	2.2	1800000	18.5

A) Acquirer’s pre merger P/E ratio = 31/2.7 = 11.48

B) Number of shares of the acquirer after the merger

shares acquirer needs to issue = Target firm value / Acquirer’s stock price

= (18.5 x 1.8 million) / 31 = 1,074,194

C) Total earnings of the merged firm

Earnings = EPS x shares

Earnings Acquirer = 2.7 x 3.8 million = 10.26 million

Earnings Target = 2.2 x 1.8 million = 3.96 million

Total Earnings combined company = 10.26 + 3.96 = 14.22 million

D) EPS merged firm = 14.22 / (3.8 + 1.074) = 2.9174

E) P/E ratio post-merger = 31 / 2.9174 = 10.63