

LO.a: Describe primary and secondary sources of liquidity and factors that influence a company's liquidity position.

1. Which action is *least likely* considered a secondary source of liquidity?
 - A. Filing for bankruptcy protection.
 - B. Increasing the efficiency of cash flow management.
 - C. Renegotiating current debt contracts to lower interest payments.
2. Which of the following is *least likely* a secondary source of liquidity?
 - A. Negotiating debt contracts.
 - B. Filing for bankruptcy protection and reorganization.
 - C. Cash flow management
3. Which of the following is *least likely* considered a primary source of liquidity?
 - A. Centralized cash management system.
 - B. Debt contract.
 - C. Trade credit.
4. Which of the following is *most likely* considered a 'drag' on liquidity?
 - A. Obsolete inventory.
 - B. Reduced credit limits.
 - C. Making early payments.

LO.b: Compare a company's liquidity measures with those of peer companies.

The following information relates to Questions 5-7

Ahmed Rashid is evaluating companies in the agricultural pesticides industry and has compiled the following information:

Company	2012		2013	
	Credit Sales	Average Receivables Balance (\$)	Credit Sales	Average Receivables Balance (\$)
Bayer Corp.	\$6.0 million	2.0 million	7.0 million	2.2 million
Excel Corp.	\$4.0 million	2.2 million	5.0 million	2.5 million
Insecticides.	\$3.5 million	1.8 million	4.0 million	2.0 million
Phyto Corp.	\$1.5 million	1.1 million	1.6 million	1.2 million
Industry	26.0 million	6.0 million	29.0 million	6.4 million

5. Which of the following companies had the highest number of days of receivables for the year 2012?
 - A. Bayer Corp.
 - B. Insecticides.
 - C. Phyto Corp.
6. Which of the companies has the lowest accounts receivables turnover in the year 2013?
 - A. Insecticides.

- B. Excel Corp.
- C. Phyto Corp.

7. The industry average receivables collection period:
- A. Increased from 2012 to 2013.
 - B. Decreased from 2012 to 2013.
 - C. Did not change from 2012 to 2013.

LO.c: Evaluate working capital effectiveness of a company based on its operating and cash conversion cycles, and compare the company's effectiveness with that of peer companies.

8. The following information is available for a company and the industry in which it operates:

	Company	Industry
Accounts receivable turnover	4.7 times	5.4 times
Inventory turnover	3.3 times	3.2 times
Number of days of payables	21 days	29 days

Relative to the industry, the company's operating cycle:

- A. and cash conversion cycle are both longer.
 - B. is longer, but its cash conversion cycle is shorter.
 - C. is shorter, but its cash conversion cycle is longer.
9. The following information is available for a company:

	In Millions (€)
Credit sales	20,000
Cost of goods sold	15,000
Accounts receivable	2,000
Inventory	1,800
Accounts payable	2,600
Purchases	15,300

The net operating cycle of this company is *closest* to:

- A. 18.3 days.
 - B. 22.4 days.
 - C. 9.8 days.
10. Given the following financial statement data, calculate the operating cycle for Alpha Corporation.

Account	In Millions(\$)
Credit sales	60,000
Cost of goods sold	48,000
Account receivable	6,000
Inventory	5,500
Account payable	4,000

The operating cycle for this company is *closest* to:

- A. 45.20 days.
- B. 49.75 days.
- C. 78.32 days.

11. Given the following financial statement data, calculate the net operating cycle for Beta Electronics Ltd.

Account	In Millions(\$)
Credit sales	100,000
Cost of goods sold	75,000
Account receivable	7,500
Inventory – Ending balance	5,000
Days of payables	49.50

The net operating cycle for this company is *closest* to:

- A. 2.2 days.
- B. 25.0 days.
- C. 51.7 days.

12. A company's largest supplier has decided to tighten credit terms. Earlier the company could make payments within 20 days of purchase. Now the company is being asked to pay within 10 days of purchase. The *most likely* effect of this change is a (an):
- A. decrease in the company's operating cycle.
 - B. increase in the company's net operating cycle.
 - C. increase in the company's operating cycle.

LO.d: Describe how different types of cash flows affect a company's net daily cash position.

13. Paragon, a shoe manufacturer, wants to maintain an adequate net daily cash position. Which of the following actions will the company *least likely* take?
- A. Monitor access to borrowing facilities.
 - B. Predict the business cycles and seasonal effects.
 - C. Forecast depreciation and accruals.
14. A company manages its treasury function to exactly maintain its minimum daily balance requirement. The following events occurred for the company on the same day:

	\$ millions
Funds transfer to subsidiaries	100
Maturing investments	75
Issues a stock dividend	15
Debt repayments	50
Minimum daily cash balance	25

The Treasurer would *most likely* need to increase borrowing for the day by:

- A. \$50 million.

- B. \$75 million.
- C. \$100 million.

LO.e: Calculate and interpret comparable yields on various securities, compare portfolio returns against a standard benchmark, and evaluate a company's short-term investment policy guidelines.

15. For a 90-day U.S. Treasury bill selling at a discount, which of the following methods *most likely* results in the highest yield?
 - A. Bond equivalent yield.
 - B. Discount-basis yield.
 - C. Money market yield.
16. For a 90-day U.S. Treasury bill selling at a discount, which of the following *most likely* results in the lowest yield?
 - A. Bond equivalent yield.
 - B. Discount-basis yield.
 - C. Money market yield.
17. A 30-day \$1,000 U.S. Treasury bill sells for \$984.10. The discount-basis yield (%) is *closest* to:
 - A. 12.57%.
 - B. 16.45%.
 - C. 19.08%.
18. The bond equivalent yield for a 180-day U.S. Treasury Bill that has a price of 9,875 per \$10,000 face value is *closest* to:
 - A. 2.57%.
 - B. 2.77%.
 - C. 2.34%.
19. For a 91-day \$100,000 T-bill which is being sold at a discounted rate of 6.79%, the money market yield is *closest* to:
 - A. 6.79%.
 - B. 6.88%.
 - C. 6.91%.
20. The Money market yield for a 182-days U.S treasury bill that has a price \$8,500 per \$10,000 face value is closest to:
 - A. 34.91%.
 - B. 35.55%.
 - C. 45.50%.
21. A 270-day \$1,000,000 security is currently selling for \$987,025. The discount basis yield of the security is *closest* to:
 - A. 1.73%.

- B. 1.75%.
- C. 1.77%.

LO.f: Evaluate a company's management of accounts receivable, inventory, and accounts payable over time and compared to peer companies.

22. Assume a 365-day year and the following information for a company:

	Current year	Previous year
Sales	\$18,000	\$20,000
Cost of goods sold	\$9,000	\$9,500
Inventory	\$1,500	\$1,600
Accounts payable	\$700	\$700

The firm's days in payables for the current year is *closest to*:

- A. 28.08.
 - B. 28.71.
 - C. 29.21.
23. A company uses trade credit terms of 3/10 net 40. If the account is paid on the 30th day, the cost of trade credit is closest to:
- A. 27.9.
 - B. 44.6.
 - C. 74.3.
24. Elixir Ltd. has a current ratio of 5 times and quick ratio of 3 times. If the company's current liabilities are \$50 million, the amount of inventories is *closest to*:
- A. \$100 million.
 - B. \$200 million.
 - C. \$150 million.
25. Galaxy Chemicals Ltd. is increasing its credit terms for customers from 1/12, net 20 to 1/12, net 50. The company will *most likely* experience:
- A. an increase in cash on hand.
 - B. an increase in the average collection period.
 - C. a higher level of uncollectible accounts.
26. Suppose Casio Electronics uses trade credit with terms of 1/10, net 60. If the company pays its account on the 60th day, the effective borrowing cost of skipping the discount on day 10 is *closest to*:
- A. 15.5%.
 - B. 7.61%.
 - C. 21.3%.
27. A company uses trade credit terms of 1/10 net 30. If the account is paid on the 30th day, the effective borrowing cost of failing to take the discount is *closest to*:
- A. 22%.
 - B. 20%.

C. 24%.

LO.g: Evaluate the choices of short-term funding available to a company and recommend a financing method.

28. Which of the following is *most likely* the best offer for borrowing \$1,000,000 for one month?
 - A. Drawing down on a line of credit at 6% with a $\frac{1}{2}$ % commitment fee on the full amount with no compensating balances.
 - B. A banker's acceptance at 6.25%, an all-inclusive rate.
 - C. Commercial paper at 5.65% with a dealer's commission of $\frac{1}{4}$ % and a backup line cost of $\frac{1}{3}$ %, both of which would be assessed on the \$1 million of commercial paper issued.
29. The cost of borrowing \$3,000,000 for one month through a banker's acceptance at a rate of 6.5%, an all-inclusive rate is *closest* to:
 - A. 5.65%.
 - B. 6.34%.
 - C. 6.54%.
30. The effective annualized cost (%) of a banker's acceptance that has an all-inclusive annual rate of 10.5% for a one-month loan of \$4,000,000 is *closest* to:
 - A. 10.59.
 - B. 10.76.
 - C. 11.08.
31. A treasury manager in a company has to borrow \$8,000,000 for a month to meet an unforeseen short-term expense. Which of the following borrowing alternatives available to him will have the *lowest* effective annual cost?
 - A. Line of credit at 6.8% with a 0.5% annual commitment fee.
 - B. A banker's acceptance at 7.25%, an all-inclusive rate.
 - C. Commercial paper at 7% with an annual dealer's commission of \$2,500 and an annual backup line cost of \$4,200.

Solutions

1. B is correct. Increasing the efficiency of cash flow management falls under primary sources of liquidity.
2. C is correct. Cash flow management is a primary source of liquidity.
3. B is correct. Debt contract system is a secondary source of liquidity.
4. A is correct. Drags on liquidity include uncollected receivables, obsolete inventory and tight credit.
5. C is correct.

$$\text{Number of days of receivables} = \frac{\text{Accounts receivable}}{\frac{\text{Credit sales}}{365}}$$

$$\text{Bayer Corp: } \frac{\$2 \text{ million}}{\frac{\$6 \text{ million}}{365}} = 121.67 \text{ days}$$

$$\text{Excel Corp: } \frac{\$2.2 \text{ million}}{\frac{\$4 \text{ million}}{365}} = 201 \text{ days}$$

$$\text{Insectisides: } \frac{\$1.8 \text{ million}}{\frac{\$3.5 \text{ million}}{365}} = 188 \text{ days}$$

$$\text{Phyto Corp: } \frac{\$1.1 \text{ million}}{\frac{\$1.5 \text{ million}}{365}} = 268 \text{ days}$$

6. C is correct.

$$\text{Receivables turnover} = \frac{\text{Credit sales}}{\text{Average receivables}}$$

$$\text{Bayer Corp: } \frac{\$7.0 \text{ million}}{\frac{\$2.2 \text{ million}}{365}} = 3.182$$

$$\text{Excel Corp: } \frac{\$5.0 \text{ million}}{\frac{\$2.5 \text{ million}}{365}} = 2.0$$

$$\text{Insectisides: } \frac{\$4.0 \text{ million}}{\frac{\$2.0 \text{ million}}{365}} = 2.0$$

$$\text{Phyto Corp: } \frac{\$1.6 \text{ million}}{\frac{\$1.2 \text{ million}}{365}} = 1.33$$

7. B is correct.

Industry average in 2012: 84.23 days

Industry average in 2013: 80.55 days

8. A is correct.

Operating cycle = Number of days of inventory + Number of days of receivables.

Cash conversion cycle = Operating cycle – Number of days of payables.

	Company	Industry
Number of days receivables	365/4.7 = 78 days	365/5.4 = 68 days
Number of days inventory	365/3.3 = 111 days	365/3.2 = 114 days

Operating cycles	78 + 111 = 189 Longer	68 + 114 = 182
Cash conversion cycle	189 - 21 = 168 Longer	182 - 29 = 153

Therefore, the operating cycle and cash conversion cycle are both longer for the company.

9. A is correct. Number of days of inventory = $\frac{1,800}{15,000/365} = 43.80$ days

Number of days of receivables = $\frac{2,000}{20,000/365} = 36.50$ days

Purchases = €15,300

Number of days of payables = $\frac{2,600}{15,300/365} = 62.03$ days

Net operating cycle is $43.80 + 36.50 - 62.03 = 18.27$ days

10. C is correct.

Number of days of inventory = $\frac{5500}{48,000/365} = 41.82$ days

Number of days of receivables = $\frac{6000}{60,000/365} = 36.50$ days

Operating cycle = Average days in inventory + Average days in receivables
= $41.82 + 36.50 = 78.32$ days

11. A is correct.

Number of days of inventory = $\frac{5000}{75,000/365} = 24.33$ days

Number of days of receivables = $\frac{7500}{100,000/365} = 27.38$ days

Number of days of payables = 49.50

Net operating cycle/ Cash conversion cycle = $24.33 + 27.38 - 49.50 = 2.21$ days

12. B is correct. The operating cycle is equal to the number of days of inventory plus the number of days of receivables. Hence the operating cycle is not impacted by a change in the number of days of payables. The net operating cycle is equal to the operating cycle minus the number of days of payables. If the number of days of payables decreases the net operating cycle will increase.

13. C is correct. Accruals are paid at a later date, and depreciation is a noncash expense.

14. B is correct. The change in the net daily cash position (in millions) is calculated as below and would require additional borrowing of \$75 million:

Opening cash balance		\$25
Fund transfer to subsidiaries	(100)	
Maturing investments	75	
Debt repayments	(50)	
Change in cash for the day	(75)	
Borrowing required	75	
Closing cash balance		\$25

15. A is correct. Note that the face value is greater than the purchase price because the T-bill sells at a discount:

$$DBY = \frac{\text{Face value} - \text{Purchase price}}{\text{Face value}} * \left(\frac{360}{\text{Days to maturity}} \right)$$

$$MMY = \frac{\text{Face value} - \text{Purchase price}}{\text{Purchase price}} * \left(\frac{360}{\text{Days to maturity}} \right)$$

$$BEY = \frac{\text{Face value} - \text{Purchase price}}{\text{Purchase price}} * \left(\frac{365}{\text{Days to maturity}} \right)$$

$$BEY > MMY > DBY$$

16. B is correct. Note that the face value is greater than the purchase price because the T-bill sells at a discount:

$$DBY = \frac{\text{Face value} - \text{Purchase price}}{\text{Face value}} * \left(\frac{360}{\text{Days to maturity}} \right)$$

$$MMY = \frac{(\text{Face value} - \text{Purchase price})}{\text{Purchase price}} * \left(\frac{360}{\text{Days to maturity}} \right)$$

$$BEY = \frac{(\text{Face value} - \text{Purchase price})}{\text{Purchase price}} * \left(\frac{360}{\text{Days to maturity}} \right)$$

$$BEY > MMY > DBY$$

17. C is correct. The face value is greater than the purchase price because the T-bill sells at a discount.

$$DBY = \frac{\text{Face value} - \text{Purchase price}}{\text{Face value}} * \frac{360}{\text{Days to maturity}}$$

$$DBY = \left(\frac{1000 - 984.10}{1000} \right) * \frac{360}{30} = 19.08\%$$

18. A is correct.

$$\text{Bond - equivalent yield} = \frac{\text{Face value} - \text{Purchase price}}{\text{Purchase price}} * \left(\frac{365}{\text{Number of days to maturity}} \right)$$

$$= \frac{10000 - 9875}{9875} * \frac{365}{180} = 2.57\%$$

19. C is correct. Money- market yield = $\frac{\text{Face value} - \text{Purchase price}}{\text{Purchase price}} * \left(\frac{360}{\text{days to maturity}} \right)$

$$\text{Purchase price} = 100,000 - \left[0.0679 * \left(\frac{91}{360} \right) * 100,000 \right] = \$98,283.639$$

Therefore,

$$\text{Money market yield} = \left[\frac{100,000 - 98,283.639}{98,283.639} \right] * \left(\frac{360}{91} \right) = 6.91\%$$

20. A is correct.

$$\text{Money market yield} = [(\$10,000 - \$8,500)/\$8,500] * (360/182) = 34.91\%$$

21. A is correct.

$$\text{Discount basis yield} = \left[\frac{\text{Face value} - \text{Price}}{\text{Face value}} \right] \left[\frac{360}{\text{days}} \right]$$

$$\text{Discount basis yield} = \left[\frac{1,000,000 - 987,025}{1,000,000} \right] \left[\frac{360}{270} \right] = 1.73\%$$

22. B is correct. Days in payables = $\frac{\text{Accounts payable}}{\frac{\text{Purchases}}{365}}$

$$= \frac{\text{Accounts payable}}{\frac{[(\text{Change in inventory}) + (\text{Cost of goods sold})]}{365}}$$

$$= \frac{700}{\frac{1,500 - 1,600 + 9,000}{365}}$$

$$= 28.71$$

23. C is correct. Cost of trade credit =

$$\left(\left(1 + \frac{\text{Discount}}{1 - \text{Discount}} \right)^{\frac{365}{\text{Days beyond discount period}}} \right) - 1$$

$$= \left(\left(1 + \left(\frac{0.03}{1 - 0.03} \right)^{\frac{365}{30 - 10}} \right) \right) - 1 = 74.3\%$$

24. A is correct.

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current Liabilities}} = \text{Current assets}/\$50 = 5$$

Therefore, current assets = \$250 million

$$\text{Quick ratio} = (\text{Current assets} - \text{Inventory}) / \text{Current Liabilities} = 3$$

$$\text{Quick ratio} = \frac{\$250 - \text{Inv}}{\$50} = 3; \text{ therefore Inventory} = \$100 \text{ million}$$

25. B is correct. A higher level of uncollectible accounts may occur, but a longer average collection period will certainly occur.

26. B is correct. Cost = $(1 + 0.01/0.99)^{(365/50)} - 1 = 7.61\%$

27. B is correct.

Cost of trade credit =

$$= \left(\left(1 + \frac{\text{Discount}}{1 - \text{Discount}} \right)^{\frac{365}{\text{Days beyond discount period}}} \right) - 1$$

$$= \left(1 + \left(\frac{0.01}{1 - 0.01} \right)^{\frac{365}{30 - 10}} \right) - 1 = 20.13\%$$

28. C is correct. Evaluate the choices of short-term funding available to a company and recommend a financing method.

$$\text{Line of credit cost} = \left[\frac{\text{Interest} + \text{Commitment fee}}{\text{Usable loan amount}} \right] * 12$$

$$\text{Line cost} = \left(\left(0.06 * \$1,000,000 * \frac{1}{12} \right) + \left(0.005 * \$1,000,000 * \frac{1}{12} \right) \right) * 12 / \$1,000,000$$

$$= 6.5\%$$

$$\text{Banker's acceptance cost} = \left(\frac{\text{Interest}}{\text{Net proceeds}} \right) * 12$$

$$\text{BA Cost} = \frac{\left(0.0625 * \$1,000,000 * \frac{1}{12} \right)}{\$1,000,000 - \left(0.0625 * \$1,000,000 * \frac{1}{12} \right)} * 12$$

$$= 6.28\%$$

$$\text{Commercial paper cost} = \left[\frac{\text{Interest} + \text{dealer's commissions} + \text{backup costs}}{\text{Net proceeds}} \right] * 12$$

$$\text{CP Cost} =$$

$$\frac{\left[\left(0.0565 * 1,000,000 * \frac{1}{12} \right) + \left(0.0025 * 1,000,000 * \frac{1}{12} \right) + \left(0.0033 * 1,000,000 * \frac{1}{12} \right) \right]}{\$1,000,000 - \left(0.0565 * 1,000,000 * \frac{1}{12} \right)}$$

- 12 = 6.26%

29. C is correct.

$$\text{BA cost} = \frac{3,000,000 * 0.065 * \frac{1}{12}}{3,000,000 - \left(3,000,000 * 0.065 * \frac{1}{12} \right)} * 12 = 6.535\%$$

30. A is correct. Interest for the month = $4,000,000 * 0.105 * \frac{1}{12} = 35,000$

$$\text{Effective annualized cost} = \left(\frac{\text{Interest}}{\text{Net Proceeds}} \right) * 12 = \frac{35,000}{4,000,000 - 35,000} * 12 = 0.1059 = 10.59\%$$

31. C is correct. Line of credit cost = $\left[\frac{\text{Interest} + \text{Commitment fee}}{\text{Usable loan amount}} \right] * 12$

$$\text{Interest} = \left(\frac{0.068}{12} \right) * 8,000,000 = 45,333.33$$

$$\text{Commitment fee} = \left(\frac{0.005}{12} \right) * 8,000,000 = 3,333.33$$

$$\text{Line of credit cost} = \left[\frac{45,333.33 + 3,333.33}{8,000,000} \right] * 12 = 7.30\%$$

$$\text{Banker's acceptance cost} = \left(\frac{\text{Interest}}{\text{Net proceeds}} \right) * 12$$

$$\text{Interest} = \left(\frac{0.0725}{12} \right) * 8,000,000 = 48,333.33$$

$$\text{Net proceeds} = 8,000,000 - 48,333.33 = 7,951,666.67$$

$$\text{Banker's acceptance cost} = \left(\frac{48,333.33}{7,951,666.67} \right) * 12 = 7.29\%$$

$$\text{Commercial paper cost} = \left[\frac{\text{Interest} + \text{dealer's commissions} + \text{backup costs}}{\text{Net proceeds}} \right] * 12$$

$$\text{Interest} = \left(\frac{0.07}{12} \right) * 8,000,000 = 46,666.67$$

$$\text{Dealer's commissions} = \frac{2500}{12} = 208.33$$

$$\text{Backup costs} = \frac{4200}{12} = 350$$

$$\text{Net proceeds} = 8,000,000 - 46,666.67 = 7,953,333.33$$

$$\text{Commercial paper cost} = \left[\frac{46,666.67 + 208.33 + 350}{7,953,333.33} \right] * 12 = 7.13\%$$

Hence, commercial paper is the least expensive source of funding as it has the lowest effective annual cost amongst the three alternatives.