QUESTIONS AND PROBLEMS

connect

Basic (Questions 1–16)

1. **Changes in the Cash Account** Indicate the impact of the following corporate actions on cash, using the letter *I* for an increase, *D* for a decrease, or *N* when no change occurs.
   - **a.** A dividend is paid with funds received from a sale of debt.
   - **b.** Real estate is purchased and paid for with short-term debt.
   - **c.** Inventory is bought on credit.
   - **d.** A short-term bank loan is repaid.
   - **e.** Next year's taxes are prepaid.
   - **f.** Preferred stock is redeemed.
   - **g.** Sales are made on credit.
   - **h.** Interest on long-term debt is paid.
   - **i.** Payments for previous sales are collected.
   - **j.** The accounts payable balance is reduced.
   - **k.** A dividend is paid.
   - **l.** Production supplies are purchased and paid for with a short-term note.
   - **m.** Utility bills are paid.
   - **n.** Cash is paid for raw materials purchased for inventory.
   - **o.** Marketable securities are sold.
2. **Cash Equation** McConnell Corp. has a book value of equity of $11,640. Long-term debt is $7,100. Net working capital, other than cash, is $2,845. Fixed assets are $14,970. How much cash does the company have? If current liabilities are $1,580, what are current assets?
3. **Changes in the Operating Cycle** Indicate the effect that the following will have on the operating cycle. Use the letter *I* to indicate an increase, the letter *D* for a decrease, and the letter *N* for no change.
   - **a.** Receivables average goes up.
   - **b.** Credit repayment times for customers are increased.
   - **c.** Inventory turnover goes from 3 times to 6 times.
   - **d.** Payables turnover goes from 6 times to 11 times.
   - **e.** Receivables turnover goes from 7 times to 9 times.
   - **f.** Payments to suppliers are accelerated.
4. **Changes in Cycles** Indicate the impact of the following on the cash and operating cycles, respectively. Use the letter *I* to indicate an increase, the letter *D* for a decrease, and the letter *N* for no change.
   - **a.** The terms of cash discounts offered to customers are made less favorable.
   - **b.** The cash discounts offered by suppliers are increased; thus, payments are made earlier.
   - **c.** An increased number of customers begin to pay in cash instead of with credit.
   - **d.** Fewer raw materials than usual are purchased.
   - **e.** A greater percentage of raw material purchases are paid for with credit.
   - **f.** More finished goods are produced for inventory instead of for order.

5. Calculating Cash Collections The Litzenberger Company has projected the following quarterly sales amounts for the coming year:

	Q1	Q2	Q3	Q4
Sales	$690	$740	$705	$780

PROSPECTUS PICC

200,000 shares

PEST INVESTIGATION CONTROL CORPORATION

Of the shares being offered hereby, all 200,000 are being sold by the Pest Investigation Control Corporation, Inc. ("the Company"). Before the offering there has been no public market for the shares of PICC, and no guarantee can be given that any such market will develop.

These securities have not been approved or disapproved by the SEC nor has the commission passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

	PRICE TO PUBLIC	UNDERWRITING DISCOUNT	PROCEEDS TO COMPANY*
Per share	$11.00	$1.10	$9.90
Total	$2,200,000	$220,000	$1,980,000

*Before deducting expenses estimated at $27,000 and payable by the Company.

This is an initial public offering. The common shares are being offered, subject to prior sale, when, as, and if delivered to and accepted by the Underwriters and subject to approval of certain legal matters by their Counsel and by Counsel for the Company The Underwriters reserve the right to withdraw, cancel, or modify such offer and to reject offers in whole or in part.

Erlanger and Ritter, Investment Bankers
July 12, 2017

Prospectus Summary

The Company	The Pest Investigation Control Corporation (PICC) breeds and markets toads and tree frogs as ecologically safe insect-control mechanisms.
The Offering	200,000 shares of common stock, no par value.
Listing	The Company will seek listing on NASDAQ and will trade over the counter.
Shares Outstanding	As of June 30, 2017, 400,000 shares of common stock were outstanding. After the offering, 600,000 shares of common stock will be outstanding.
Use of Proceeds	To finance expansion of inventory and receivables and general working capital, and to pay for country club memberships for certain finance professors.

Selected Financial Information
(amounts in thousands except per-share data)

FISCAL YEAR ENDED JUNE 30			AS OF JUNE 30, 2017
2015	2016	2017	ACTUAL

						AS ADJUSTED FOR THIS OFFERING
Revenues	$60.00	$120.00	$240.00	Working capital	$ 8	$1,961
Net earnings	3.80	15.90	36.10	Total assets	511	2,464
Earnings per share	.01	.04	.09	Stockholders' equity	423	2,376

QUESTIONS AND PROBLEMS

Basic (Questions 1–8)

1. **Rights Offerings** Sheary, Inc., is proposing a rights offering. Presently, there are 375,000 shares outstanding at $60 each. There will be 65,000 new shares offered at $57 each.

   a. What is the new market value of the company?

   b. How many rights are associated with one of the new shares?

   c. What is the ex-rights price?

What is the value of a right? page 615

e. Why might a company have a rights offering rather than a general cash offer?

2. **Rights Offering** The Clifford Corporation has announced a rights offer to raise $45 million for a new journal, the *Journal of Financial Excess.* This journal will review potential articles after the author pays a nonrefundable reviewing fee of $5,000 per page. The stock currently sells for $34 per share, and there are 2.7 million shares outstanding.

   a. What is the maximum possible subscription price? What is the minimum?
   b. If the subscription price is set at $31 per share, how many shares must be sold? How many rights will it take to buy one share?
   c. What is the ex-rights price? What is the value of a right?
   d. Show how a shareholder with 1,000 shares before the offering and no desire (or money) to buy additional shares is not harmed by the rights offer.

3. **Rights** Blue Shoe Co. has concluded that additional equity financing will be needed to expand operations and that the needed funds will be best obtained through a rights offering. It has correctly determined that as a result of the rights offering, the share price will fall from $78 to $74.30 ($78 is the "rights-on" price; $74.30 is the ex-rights price, also known as the *when-issued* price). The company is seeking $12 million in additional funds with a per-share subscription price equal to $50. How many shares are there currently, before the offering? (Assume that the increment to the market value of the equity equals the gross proceeds from the offering.)

4. **IPO Underpricing** The Speith Co. and the McIlroy Co. have both announced IPOs at $30 per share. One of these is undervalued by $8, and the other is overvalued by $5, but you have no way of knowing which is which. You plan on buying 1,000 shares of each issue. If an issue is underpriced, it will be rationed, and only half your order will be filled. If you *could* get 1,000 shares in Speith and 1,000 shares in McIlroy, what would your profit be? What profit do you actually expect? What principle have you illustrated?

5. **Calculating Flotation Costs** The Hagelin Corporation needs to raise $50 million to finance its expansion into new markets. The company will sell new shares of equity via a general cash offering to raise the needed funds. If the offer price is $34 per share and the company's underwriters charge a spread of 7 percent, how many shares need to be sold?

6. **Calculating Flotation Costs** In the previous problem, if the SEC filing fee and associated administrative expenses of the offering are $1.3 million, how many shares need to be sold?

7. **Calculating Flotation Costs** The Westlands Co. has just gone public. Under a firm commitment agreement, the company received $21.39 for each of the 12 million shares sold. The initial offering price was $23 per share, and the stock rose to $27.85 per share in the first few minutes of trading. The company paid $1,450,000 in direct legal and other costs and $375,000 in indirect costs. What was the flotation cost as a percentage of funds raised?

8. **Price Dilution** Fehr, Inc., has 135,000 shares of stock outstanding. Each share is worth $63, so the company's market value of equity is $8,505,000. Suppose the firm issues 33,750 new shares at the following prices: $63, $60, and $56. What will the effect be of each of these alternative offering prices on the existing price per share?

Intermediate (Questions 9–16)

9. **Dilution** Kessel, Inc., wishes to expand its facilities. The company currently has 3.4 million shares outstanding and no debt. The stock sells for $51 per share, but the book value per share is $18. Net income for the company is currently $7.35 million. The new facility will cost $18 million, and it will increase net income by $690,000.

   a. Assuming a constant price–earnings ratio, what will the effect be of issuing new equity to finance the investment? To answer, calculate the new book value per share, the new total earnings, the new EPS, the new stock price, and the new market-to-book ratio. What is going on here?

   b. What would the new net income for the company have to be for the stock price to remain unchanged?

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International Capital Budgeting Suppose it is your task to evaluate two different investments in new subsidiaries for your company, one in your own country and the other in a foreign country. You calculate the cash flows of both projects to be identical after exchange rate differences. Under what circumstances might you choose to invest in the foreign subsidiary? Give an example of a country where certain factors might influence you to alter this decision and invest at home.

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International Capital Budgeting An investment in a foreign subsidiary is estimated to have a positive NPV after the discount rate used in the calculations is adjusted for political risk and any advantages from diversification. Does this mean the project is acceptable? Why or why not?

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International Borrowing If a U.S. firm raises funds for a foreign subsidiary, what are the disadvantages to borrowing in the United States? How would you overcome them?

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International Investment If financial markets are perfectly competitive and the Eurodollar rate is above that offered in the U.S. loan market, you would immediately want to borrow money in the United States and invest it in Eurodollars. True or false? Explain.

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Eurobonds What distinguishes a Eurobond from a foreign bond? Which particular feature makes the Eurobond more popular than the foreign bond?

QUESTIONS AND PROBLEMS

Basic (Questions 1–13)

1. **Using Exchange Rates** Take a look back at Figure 20.1 to answer the following questions:
   a. If you have $100, how many euros can you get?
   b. How much is one euro worth?
   c. If you have five million euros, how many dollars do you have?
   d. Which is worth more, a New Zealand dollar or a Singapore dollar?
   e. Which is worth more, a Mexican peso or a Chilean peso?
   f. How many Mexican pesos can you get for a euro? What do you call this rate?
   g. Per unit, what is the most valuable currency of those listed? The least valuable?

2. **Using the Cross-Rate** Use the information in Figure 20.1 to answer the following questions:

   a. Which would you rather have, $100 or £100? Why?

   b. Which would you rather have, 100 Swiss francs (Fr) or £100? Why?

   c. What is the cross-rate for Swiss francs in terms of British pounds? For British pounds in terms of Swiss francs?

3. **Forward Exchange Rates** Use the information in Figure 20.1 to answer the following questions:

   a. What is the six-month forward rate for the Japanese yen in yen per U.S. dollar? Is the yen selling at a premium or a discount? Explain.

   b. What is the three-month forward rate for British pounds in U.S. dollars per pound? Is the dollar selling at a premium or a discount? Explain.

   c. What do you think will happen to the value of the dollar relative to the yen and the pound, based on the information in the figure? Explain.

4. **Using Spot and Forward Exchange Rates** Suppose the spot exchange rate for the Canadian dollar is Can$1.09 and the six-month forward rate is Can$1.13.

   a. Which is worth more, a U.S. dollar or a Canadian dollar?

   b. Assuming absolute PPP holds, what is the cost in the United States of an Elkhead beer if the price in Canada is Can$2.49? Why might the beer actually sell at a different price in the United States?

   c. Is the U.S. dollar selling at a premium or a discount relative to the Canadian dollar?

d.

Which currency is expected to appreciate in value? page 641

e. Which country do you think has higher interest rates—the United States or Canada? Explain.

5. **Cross-Rates and Arbitrage** Suppose the Japanese yen exchange rate is ¥115 = $1, and the British pound exchange rate is £1 = $1.54.

   a. What is the cross-rate in terms of yen per pound?

   b. Suppose the cross-rate is ¥175 = £1. Is there an arbitrage opportunity here? If there is, explain how to take advantage of the mispricing.

6. **Interest Rate Parity** Use Figure 20.1 to answer the following questions. Suppose interest rate parity holds, and the current six-month risk-free rate in the United States is 1.4 percent. What must the six-month risk-free rate be in Great Britain? In Japan? In Switzerland?

7. **Interest Rates and Arbitrage** The treasurer of a major U.S. firm has $30 million to invest for three months. The interest rate in the United States is .38 percent per month. The interest rate in Great Britain is .39 percent per month. The spot exchange rate is £.6431, and the three-month forward rate is £.6439. Ignoring transaction costs, in which country would the treasurer want to invest the company's funds? Why?

8. **Inflation and Exchange Rates** Suppose the current exchange rate for the Polish złoty is zł 3.37. The expected exchange rate in three years is zł 3.64. What is the difference in the annual inflation rates for the United States and Poland over this period? Assume that the anticipated rate is constant for both countries. What relationship are you relying on in answering?

9. **Exchange Rate Risk** Suppose your company imports computer motherboards from Singapore. The exchange rate is given in Figure 20.1. You have just placed an order for 30,000 motherboards at a cost to you of 147.80 Singapore dollars each. You will pay for the shipment when it arrives in 90 days. You can sell the motherboards for $121 each. Calculate your profit if the exchange rate goes up or down by 10 percent over the next 90 days. What is the break-even exchange rate? What percentage rise or fall does this represent in terms of the Singapore dollar versus the U.S. dollar?

10. **Exchange Rates and Arbitrage** Suppose the spot and six-month forward rates on the Norwegian krone are Kr 6.95 and Kr 7.03, respectively. The annual risk-free rate in the United States is 3.8 percent, and the annual risk-free rate in Norway is 5.7 percent.

    a. Is there an arbitrage opportunity here? If so, how would you exploit it?

    b. What must the six-month forward rate be to prevent arbitrage?

11. **The International Fisher Effect** You observe that the inflation rate in the United States is 2.5 percent per year and that T-bills currently yield 3.3 percent annually. What do you estimate the inflation rate to be in

    a. Australia, if short-term Australian government securities yield 2.5 percent per year?

    b. Canada, if short-term Canadian government securities yield 3.9 percent per year?

    c. Taiwan, if short-term Taiwanese government securities yield 5.4 percent per year?

12. **Spot versus Forward Rates** Suppose the spot and three-month forward rates for the yen are ¥119.32 and ¥119.18, respectively.

    a. Is the yen expected to get stronger or weaker?

    b. Estimate the difference between the inflation rates of the United States and Japan.

13. **Expected Spot Rates** Suppose the spot exchange rate for the Hungarian forint is HUF 243. Interest rates in the United States are 1.63 percent per year. They are 2.19 percent in Hungary. What do you predict the exchange rate will be in one year? In two years? In five years? What relationship are you using?

Intermediate (Questions 14–16)

14. **Capital Budgeting** Lakonishok Equipment has an investment opportunity in Europe. The project costs €12.2 million and is expected to produce cash flows of €2.7 million in Year 1, €2.9 million in Year 2, and