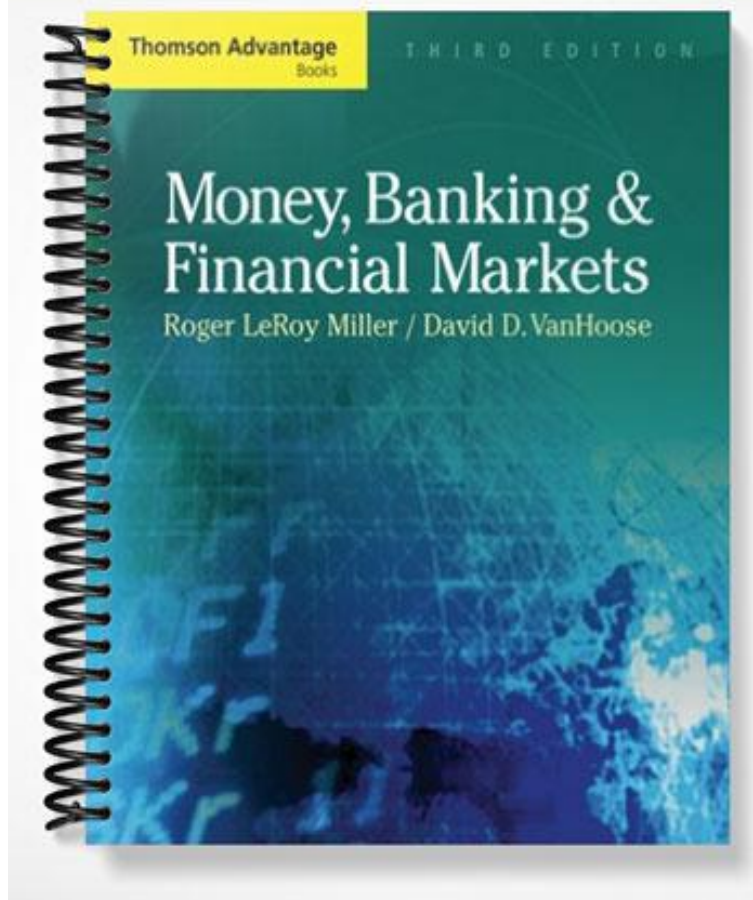
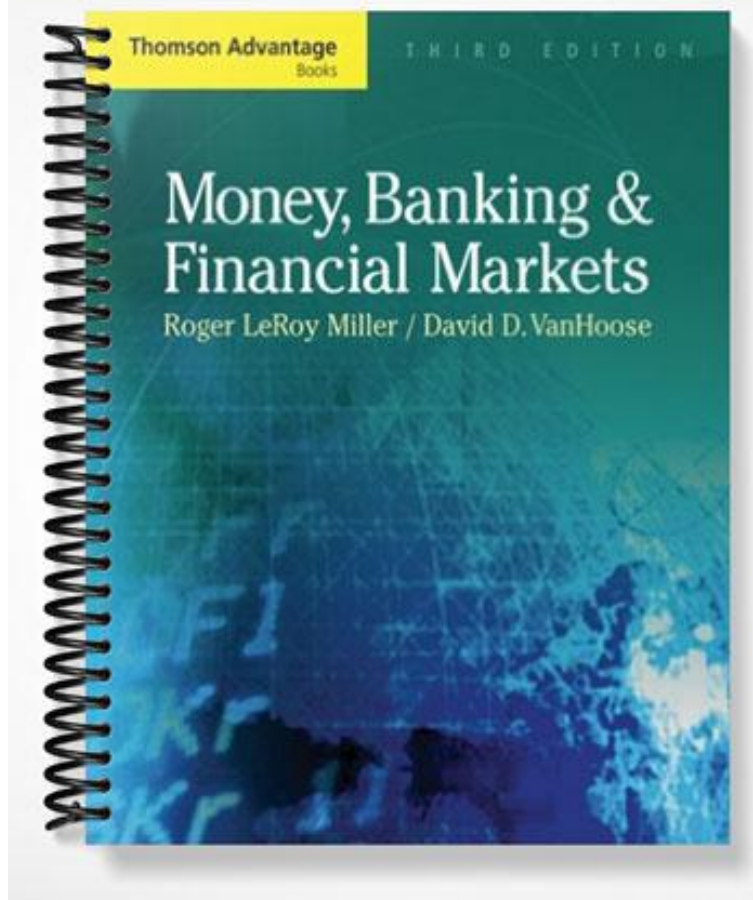


SOLUTIONS MANUAL



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Chapter

2

Banking in the Digital Age

Chapter Overview

This chapter introduces different forms and various uses of electronic money or digital cash. It further discusses the security issue of digital cash versus physical cash. Finally, the chapter discusses the implications of digital cash for the banking industry and monetary policy.

Chapter Outline

- I. Fundamental Issues
- II. E-Cash: The Future is Now
 - a. Stored Value and Debit-Card Systems
 - b. Smart Cards and Digital Cash
 - c. Online Banking
- III. Regulatory Issues of Electronic Banking
 - a. The Security of Digital Cash
 - b. Bank Fraud: An Old Problem with a New Face
 - c. Regulating Cyberbanking
- IV. Electronic Money and Monetary Policy
 - a. Real Money Versus Virtual Money—Does it Matter?
 - b. The Big Issue: Who will Issue Digital Cash?
- V. Chapter Summary
- VI. Questions and Problems
- VII. Before the Test
- VIII. Online Application
- IX. Selected References and Future Reading

Guides to Critical Analysis

Management Focus: Why McDonald's Wants Your Card, Not Your Cash

The student should respond with the idea that the electronic payment systems promote efficiency in the long run. The use of electronic payments reduces the cost that McDonald's has to incur in depositing customers' cash payments regularly into its bank.

What Happens When You Swipe Your Debit Card?

The student should respond with the idea that because of the time lag between the swiping of a debit card and the offline settlement of funds between banks, the amount of transaction is not deducted from the customer's bank account until a settlement occurs between the customer's bank and the retailer's bank. In this sense, the customer receives an interest-free "loan".

Cyber Focus: Physical Checks Become Digital Images

The student should respond with the idea that it takes more time to clear a physical check than swiping a debit card. The time lag represents interest earnings for the bank deposit that remains at the check writer's bank account. Since the deduction occurs almost instantaneously with the use of a debit card, interest earnings as a result of this time lag are eliminated.

Management Focus: Smart Cards Have Caught On in Europe

The student should respond with the idea that smart cards are more expensive than other payment methods but are less subject to payment fraud. U.S. banks have been relatively more successful in protecting consumers from payment fraud than banks in other countries. Adoption of the more secure smart cards has been slower in the U.S. than in other countries because of the lower incentive for the switch.

Management Focus: Banks Figure Out How to Induce Customers to Go Online

The student should respond with the idea that online banking increases efficiency and reduces many costs involved in traditional bank transaction activities. Even if banks do not charge a fee

for using online-banking facilities, the cost savings would lead to higher profits.

Policy Focus: What Happens When People Will Accept Currency, but Machines Will Not?

The student should respond with the idea that people do not always accept new currency. To avoid the risk that a new currency is not accepted by the general public, the Treasury has introduced new currency gradually, rather than all at once.

Solutions to End-of-Chapter Questions and Problems

1. This would have been a closed system, because the card could be used only for state-related payments, but it would entail using smart cards, because the cards would contain microprocessors that could communicate with other computers.
2. In principle, the New Jersey government could indeed use data stored on the cards' microprocessors to obtain detailed information about how people used the cards. Each student must justify a position about the normative implications.
3. Because smart cards have microprocessors that can communicate with programmable devices, they can be used to perform a wider variety of functions as compared with stored-value cards, just as electronic cash registers with point-of-sale connectivity and programmability can be used to perform more functions (for instance, compiling inventory reports and automatic re-ordering) than nonelectronic cash registers.
4. Digital cash can be used as anonymously as physical cash but can be transferred over great distances, so certainly there is the potential for people to contemplate using digital cash on smart cards to avoid reporting funds transfers in an effort to hide transactions from tax authorities. Whether this is a significant social concern is a normative issue that each student must contemplate.
5. There are a number of cost issues that arise when considering e-money versus physical currency and checks as alternative means of retail payment. As documented in this chapter, there is a significant flow of cost savings that might be realized from adopting digital-cash systems; at the same time, there would be sizable fixed costs entailed in developing an infrastructure to make such systems feasible. At present, issues that remain to be decided are how efficiently digital-cash systems would function on a day-to-day basis and how much trust people could place in such systems. Thus, the Fed economist certainly has a point, and the merits of this argument will be sorted out in the

marketplace for alternative retail payment processes.

6. Bank fraud will be easier to perpetrate in situations where online banking technologies simplify the task of hiding or disguising unauthorized transfers of funds. In particular, tasks that in the past required considerable paperwork and higher-level authorization but which have been streamlined so that online-banking methods can bring about cost savings will be areas in which fraudulent activities are more likely to occur.
7. The key advantage is that digital cash can be transmitted across distances with much less likelihood of loss or theft. As long as electronic systems function smoothly, the transaction costs of using digital cash also may be lower.
8. Digital cash on smart cards or other portable computing devices is no more or less secure than physical cash in billfolds or handbags. In principle, however, thieves could steal digital cash by diverting online transfers. Furthermore, system failures or computer viruses could cause people to incur losses that they would not face if they were to use physical cash instead.
9. Increased competition in providing means of payment would push the price of making payments close to the per-unit cost of each transfer, thereby ensuring that resources are allocated to their highest-valued uses in society.
10. Increased competition in providing means of payment could complicate monetary policy in two ways. First, during a transition to new means of payment, it could become more difficult for the Fed to determine which means of payment should be included in monetary aggregates, thereby complicating the task of measurement of the quantity of money in circulation. Second, if greater competition arises because financial institutions or nonfinancial companies begin issuing means of payment, then the Fed's task of measuring and regulating the quantity of money in circulation would be complicated even further.

Additional Review Questions

1. What is the major difference between stored-value cards and smart cards?
2. In what ways can digital cash be less secure than physical cash?
3. What are the major rationales for regulating cyberbanking?
4. How does e-money affect monetary policy?