

12



LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- 12.1 Define the functions of money.
- 12.2 Explain what "backs" the Canadian dollar.
- 12.3 Describe the various definitions of the money supply.
- 12.4 Describe the Canadian financial system.

Money and the Banking System

Several years ago, Argentina's government made a startling announcement. It was, it said, thinking about scrapping the nation's currency, the peso. Furthermore, it might not even replace the peso with a new national money. Instead, the government might declare U.S. dollars to be the legal money of Argentina. Meanwhile, 16 European Union (EU) member states have adopted the single euro currency as their sole legal tender. In Canada, some economists have floated a plan for dropping the Canadian dollar in favour of the U.S. dollar. Why would a country think about giving up its own national currency? Before you can consider this question, you must learn about the functions of money. You must also understand how economists measure the total quantity of money in circulation. These are key topics in this chapter.



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DID YOU KNOW THAT...?

The typical dollar coin changes hands 50 times a year. Cash, of course, is not the only thing we use as money. As you will see in this chapter, our definition of money is much broader. Money has been important to society for thousands of years. In 300 B.C., Aristotle claimed that everything had to "be accessed in money, for this enables men always to exchange their services, and so makes society possible." Money is, indeed, a part of our everyday existence. We have to be careful, though, when we talk about money because it means two different things. Most of the time when people say "I wish I had more money," they

mean that they want more income. Thus, the normal use of the term *money* implies the ability to purchase goods and services. In this chapter, in contrast, you will use the term *money* to mean anything that people generally accept in exchange for goods and services. Most people think of money as the paper bills and coins that they carry. But the concept of money is normally more inclusive. Table 12-1 provides a list of some items that various civilizations have used as money. The best way to understand how those items served this purpose is to examine the functions of money.

Iron	Boar tusk	Playing cards
Copper	Red woodpecker scalps	Leather
Brass	Feathers	Gold
Wine	Glass	Silver
Corn	Polished beads (wampum)	Knives
Salt	Rum	Pots
Horses	Molasses	Boats
Sheep	Tobacco	Pitch
Goats	Agricultural implements	Rice
Tortoise shells	Round stones with centres removed	Cows
Porpoise teeth	Crystal salt bars	Paper
Whale teeth	Snail shells	Cigarettes

TABLE 12-1

Types of Money

This is a partial list of items that have been used as money. Native Canadians used wampum, beads made from shells. Fijians used whale teeth. The early colonists in North America used tobacco. And cigarettes were used in prisoner-of-war camps during World War II and in post-World War II Germany.

Source: Roger LeRoy Miller and David D. VanHoose, *Money, Banking and Financial Markets*, 3rd ed. Cincinnati, Ohio: South Western, 2007, p. 7.

12.1 The Functions of Money

Money is what money does. **Money** traditionally serves three functions. The one that most people are familiar with is money's function as a *medium of exchange*. Money also serves as a *unit of account*, and a *store of value* or *purchasing power*. Anything that serves these three functions is money. Anything that could serve these three functions could be considered money.

Money as a Medium of Exchange

When we say that money serves as a **medium of exchange**, what we mean is that sellers will accept it as payment in market transactions. Without some generally accepted medium of exchange, we would have to resort to barter. In fact, before money was used, transactions took place by means of barter. **Barter** is simply a direct exchange—no intermediary good called money is used. In a barter economy, the shoemaker who wants to obtain a dozen water glasses must seek out a glassmaker who at exactly the same time is interested in obtaining a pair of shoes. For this to occur, there has to be a *double coincidence of wants*.

If it does not exist, the shoemaker must go through several trades in order to obtain the desired dozen glasses—perhaps first trading shoes for jewellery, then jewellery for some pots and pans, and then the pots and pans for the desired glasses. See Examples 12-1 and 12-2 for more discussion of bartering.

Money facilitates exchange by reducing the transaction costs associated with means-of-payment uncertainty—that is, with regard to goods that the partners in any exchange are

Money Anything that people generally accept in exchange for goods and services.

3 requirements of money

①

Medium of exchange Any asset that sellers will accept as payment in market transactions.

Barter A direct exchange—no intermediary good called money is used.





Why are many Canadians in favour of taking pennies out of circulation?

willing to accept. The existence of money means that individuals no longer have to hold a diverse collection of goods as an exchange inventory. As a medium of exchange, money allows individuals to specialize in any area in which they have a comparative advantage and to receive money payments for their labour. Money payments can then be exchanged for the fruits of other people's labour. The use of money as a medium of exchange permits more specialization and the inherent economic efficiencies that come with it (and hence greater economic growth). Money is even more important when used for large amounts of trade.

EXAMPLE 12-1 Cash-Squeezed Small Businesses Resort to Barter

During the recession of 2008–2009, many small businesses found that customers paid their bills much more slowly. In addition, small businesses had difficulty obtaining loans from banks hit hard by the financial troubles of their own. Consequently, many small firms found themselves strapped for cash.

Indeed, so many small businesses were so low on cash that some resorted to bartering goods and services. For instance, a small accounting firm might provide its services to a small advertising agency in exchange for advertising services. In many cases, small businesses also allowed their customers pinched for cash and behind on paying their bills to provide goods and services instead. A company with past-due bills from a sandwich shop, for example, might accept payment from the shop in the form of catered lunches. One U.S. estimate indicated that during 2008 and 2009, small companies conducted barter transactions worth \$25 billion.

For critical analysis: Why do you suppose that during the recession, many small businesses utilized the services of “barter companies” that specialize in matching parties interested in barter transactions—typically in exchange for fees paid in cash?

EXAMPLE 12-2 Spooked Savers Choose Precious Metals as Stores of Value over National Moneys

During the financial crisis of 2008–2009, many savers fretted that the U.S. dollar, the British pound, and the European euro might lose much of their future values in terms of goods and services. Some of these worried savers bought precious metals such as gold and silver as standby stores of value. Some purchased them indirectly by buying shares in exchange-traded funds (ETFs) that track the market value of a metal. Thus, when the world price of the precious metal increases, the value of an ETF share rises in equal proportion.

Other savers opted to own a precious metal as a store of value that they could see with their own eyes and hold in their own hands, typically in the form of coins or bars offered for sale by national governments or private mints. A few savers were so eager to obtain alternative stores of value to government-issued moneys that they were willing to pay significant transportation, storage, and insurance costs to obtain these coins or bars. One resident of Idaho, for instance, paid \$3000 to have 100 000 ounces of silver transported from New York by armored truck. Thus, although some people feel more secure holding precious metals as stores of value instead of national moneys, doing so can be a relatively costly endeavour.

For critical analysis: Are precious metals more or less easy to use as mediums of exchange than national moneys such as dollars, pounds, or euros? Explain briefly.

12.2 Monetary Standards, or What Backs Money

Fiduciary monetary system

A system in which the value of the payments rests on the public's confidence that such payments can be exchanged for goods and services.

Fiat money Money that is widely accepted because it is declared by government to be legal tender.

↓
worthless

· your confidence
in the "dollar
bill"

Today, in Canada, everyone accepts coins, paper currency, and cheques in exchange for items sold, including labour services. The question remains, why are we willing to accept as payment something that has no intrinsic value? After all, you could not sell cheques to anybody for use as a raw material in manufacturing. The reason is that in this country, the payments arise from a **fiduciary monetary system**, which means that the value of the payments rests on the public's confidence that such payments can be exchanged for goods and services. *Fiduciary* comes from the Latin *fiducia*, which means "trust" or "confidence." In our fiduciary monetary system, money—in the form of currency or chequing accounts—is not convertible to a fixed quantity of gold, silver, or some other precious commodity. This **fiat money** is widely accepted because it is declared by government to be *legal tender*, which means that it must be accepted in the payment of a debt. In other words, fiat money is money because the government says it is. In addition, currency and deposit accounts perform the functions of money because of their acceptability and predictability of value.

Acceptability

Currency and demand deposits are money because they are accepted in exchange for goods and services. They are accepted because people have confidence that they can later be exchanged for other goods and services. This confidence is based on the knowledge that such exchanges have occurred in the past without problems. Even during a period of relatively rapid inflation, we would still be inclined to accept money in exchange for goods and services because it is so useful. Barter is a costly and time-consuming alternative. Gold (which has served as a medium of exchange in the past) is also an inconvenient alternative. For further discussion about the present-day use of gold, see Examples 12-3 and 12-4.

EXAMPLE 12-3 E-Gold-Backed E-Money

The Internet has served as a breeding ground for various forms of electronic money, known as e-money. One example is a throwback to the days of commodity money. This e-money, called "e-gold," is available at the website www.e-gold.com. At this site, an individual can open an account by purchasing e-gold that is fully backed by gold bars stored in repositories certified by the London Bullion Market Association. An account holder purchases an amount of e-gold based on the weight of actual gold backing the e-money. The site's online system allows an account holder to arrange to make a payment equal to, say, 20 troy ounces worth of e-gold to another authorized user located anywhere in the world. For those who prefer to keep track of their e-gold in dollars, euros, or six other national monies, the system also automatically permits denomination of e-gold payments in these currencies as well. Hence, this e-gold-backed e-money effectively provides measures of the purchasing power, in terms of gold, of several major world currencies.

For critical analysis: How is e-gold's medium-of-exchange function somewhat limited?

Always remember that money is socially defined. Acceptability is not something that you can necessarily predict. For example, you will probably have trouble spending Canadian currency in most businesses in the United States. Unless they are close to the Canadian border and deal frequently with Canadians, Americans do not have faith in Canadian money and therefore will not accept it in payment for goods and services.

EXAMPLE 12-4 Is Gold Worth Its Weight?

For centuries, gold has been precious because it has been scarce. Today, however, this glittering metal may be overabundant, especially for international agencies, governments, and central banks. Gold accounts for more than a third of the official international reserves of a number of developed nations. Combined gold holdings of the International Monetary Fund (IMF) and the world's central banks exceed 30 000 tonnes, or the equivalent of about a dozen years of global mining output. All this gold is very expensive to move around. For this reason, it typically just sits unused, in sturdy vaults surrounded by armed guards. This is an expensive use for a metal. Moreover, from 1970 to 2005, gold turned out to be a poor store of value. Returns on relatively low-risk bonds were much higher than the rate of return from holding gold. Switzerland, for instance, determined that the cost of interest forgone by holding gold, rather than U.S. Treasury bonds, was about \$400 a year per Swiss household.

For some governments, gold is losing its lustre. The government of Switzerland began selling off half its 2600 tonnes of gold reserves, third-largest in the world behind the United States and the European Monetary Union. More recently, the IMF has auctioned off some of its gold holdings to finance debt relief for poor countries. The European System of Central Banks, which began the new century with 30 percent of its reserves in the form of gold, decided to reduce this fraction to 15 percent.

Official gold sales until late 1999 contributed to depressing world price of gold, thereby worsening the return to holding gold. This led companies operating gold mines in the United States to lobby their representatives and senators, who successfully pushed through a law threatening a reduction of U.S. funding of the IMF unless it agreed to scale back the gold sales it had planned for the early 2000s. It did so, and the central banks also agreed to stop selling gold.

For critical analysis: It appeared that the central banks' portfolios were weighted too heavily in favour of gold. Under what circumstances might the central banks again determine that huge stocks of gold are worth holding?

Predictability of Value

The purchasing power of the dollar (its value) varies inversely with the price level. The more rapid the rate of increase of some price level index, such as the Consumer Price Index, the more rapid is the decrease in the value, or purchasing power, of a dollar. Money still retains its usefulness even if its value—its purchasing power—is declining year in and year out, as in periods of inflation, because it still retains the characteristic of predictability of value. If you believe that the inflation rate is going to be around 10 percent next year, you know that any dollar you receive a year from now will have a purchasing power equal to 10 percent less than that same dollar this year. Thus, you will not necessarily refuse to use money or accept it in exchange, simply because you know that its value will decline by the rate of inflation next year.

12.3 Defining the Canadian Money Supply

Money is important. Changes in the total **money supply**—the amount of money in circulation—and changes in the rate at which the money supply increases or decreases affect important economic variables, such as the rate of inflation, interest rates, employment, and the equilibrium level of real national income. Although there is widespread agreement among economists that money is, indeed, important, they have never agreed precisely on how to define or measure it. Therefore, we have several measures of the money supply.

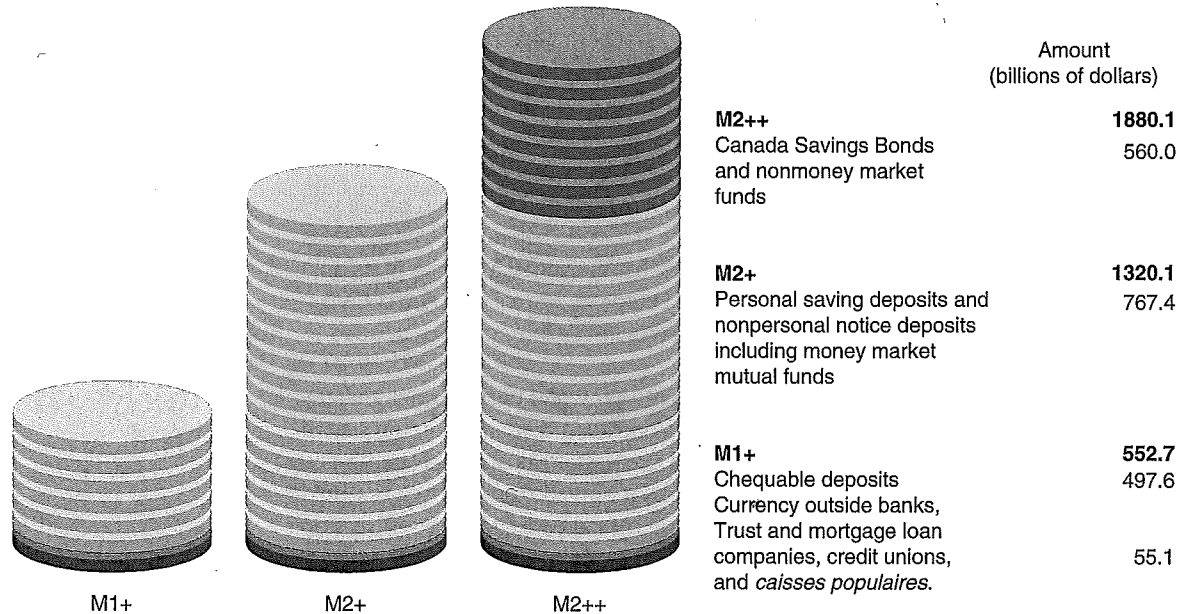
Money supply The amount of money in circulation.

FIGURE 12-2
Composition of the M1+, M2+, and M2++ Money Supply, 2009

This diagram shows the M1+ money supply, the larger component of which is chequable deposits (about 90 percent). M2+ consists of M1+ plus personal savings deposits and non-personal notice deposits including money market mutual funds

at the chartered banks, trust and mortgage-loan companies, credit unions, and *caisses populaires* (about 58 percent). M2++ consists of M2+ plus Canada Savings bonds and non-money market mutual funds.

Source: Bank of Canada, *Weekly Financial Statistics*, June 18, 2010, pp. 11–12.



The Narrowest Measure: M1+

One measure of the money supply consists of the following:

1. Currency outside bank, trust, and mortgage-loan companies, credit unions, and *caisses populaires*
2. Chequable deposits

M1+ The money supply, taken as the total value of currency plus demand deposits in chartered banks.

The narrowest official designation of the money supply, including currency outside banks and near banks and chequable deposits, is **M1+**—the money supply, taken as the total value of currency plus chequable deposits in chartered banks, trust and mortgage-loan companies, credit unions, and *caisses populaires*. The two elements of M1+ for a typical year are presented in Figure 12-2. M1+ is sometimes referred to as the transactions approach to measuring money, which stresses the role of money as a medium of exchange.

CURRENCY. Currency includes Canadian coins and paper currency, usually in the form of bank notes, issued by the Bank of Canada (see Example 12-5 for a discussion of increased Canadian coin use). Although not nearly as important as chequable deposits as a percentage of the money supply, currency has increased in significance in Canada. One of the major reasons for the increased use of currency in the Canadian economy is the growing number of illegal transactions, including under-the-table work agreements and the drug trade. McDonald's, on the other hand, is hoping its customers will stop using cash to make their purchases, as discussed in Example 12-6.

EXAMPLE 12-5 Eliminating the \$1 and \$2 Bills

Since 1990, the federal government has replaced our \$1 and \$2 bills with coins—the “loonie” and the “toonie.” What drove the government to weigh down our pockets and purses with heavy money? There are three reasons, all related to government revenue: coins last longer than bills, coins are quite inexpensive to produce, and the government makes a tidy profit on the replacement of bills with coins.

Coins Are Durable. You have probably been given in change a \$5 bill that looks as if it is about to fall apart. This is due to the wear and tear on paper currency as it circulates in the economy. As paper currency wears out, banks and other financial institutions return it to the Bank of Canada. The Bank then arranges for new replacement bills. A coin like the toonie, however, does not wear out quickly and has to be replaced much less frequently. A loonie or a toonie has a 20-year life span, while a paper note will last for just one year. The government saves about \$12.5 million per year just on production costs of the \$1 and \$2 coins.

Coins Are Cheap to Produce. The government buys its coins from the Royal Canadian Mint, located in Winnipeg, at a price that includes the cost of production and a margin of profit for the Mint. While the government does not make money purchasing pennies at 1.4¢ each and nickels at 5¢ each, it makes a profit on the other coins. For example, it costs 4¢ to produce a dime, 8¢ to produce a quarter, 13¢ to produce a \$1 coin, and only 16¢ to turn out a \$2 coin.

Coins Earn a Profit for the Government. In 1996, the Mint turned out about 14 new coins per second, 24 hours per day, to meet the government's target of putting about 300 million \$2 coins into circulation by 1997. Each time the Bank of Canada sent a \$2 coin to a chartered bank in exchange for a used \$2 bill, the Bank earned \$1.84 in profit—after all, the chartered bank paid \$2 for the coin, which cost 16¢ to make. This profit amounted to about \$500 million during the first two years of toonie production.

Will we see the replacement of our \$5 and \$10 bills with coins in the near future? Probably not, as those bills do not circulate as quickly and therefore do not wear out as quickly.

For critical analysis: If the government decided to replace the \$20 bill with a coin, what would happen to the amount of seigniorage—the profit it makes from producing our currency—that it would earn?

EXAMPLE 12-6 Why McDonald's Wants Your Card, Not Your Cash

Fast-food giant McDonald's has equipped virtually every restaurant to accept credit- and debit-card payments. Some restaurants have also begun offering radio frequency payment tags that allow customers to wave a card across a scanning device. Equipping each restaurant has entailed a one-time system installation cost of about \$2500 and a \$100 monthly telecommunications expense. Processing a typical bank card transaction requires a McDonald's restaurant to pay a fee of nearly 2 percent of the transaction's dollar value. For years, McDonald's resisted accepting payment cards.

The time customers spent providing verification signatures slowed lines and made it harder for restaurants to serve their fast food fast. Banks were also unwilling to process very small denomination transactions, such as the purchase of a \$1.25 soft drink. In recent years, however, banks have switched to debit-card systems that no longer require customer signatures and that process even the tiniest transactions.

McDonald's card-processing systems can complete a transaction in four to seven seconds, which is several seconds speedier than a cash exchange. This makes serving fast food even faster and, consequently, more cost-efficient for McDonald's restaurants.

For critical analysis: Why might McDonald's anticipate that promoting cashless payments could increase its overall profitability even though the company incurred large costs for the equipment to process these payments?

Chequable deposits Any deposits in a chartered bank or a near bank on which a cheque may be written.

Near bank Financial institutions, such as trust companies, credit unions, and *caisses populaires*, that offer most of the same services as chartered banks.

CHEQUABLE DEPOSITS. Most major transactions today are done with debit cards and cheques. The convenience and safety of using debit cards and cheques has made chequing accounts the most important component of the money supply. For example, it is estimated that in 1997, currency transactions accounted for only about 0.5 percent of the *dollar* amount of all transactions. The rest (excluding barter) involved debit cards and cheques. Debit and chequing transactions are a way of transferring the ownership of deposits in financial institutions. They are normally acceptable as a medium of exchange. The financial institutions that offer **chequable deposits**—any deposits in a chartered bank or a near bank on which a cheque may be written—are numerous and include virtually all **near banks**—financial institutions, such as trust companies, credit unions, and *caisses populaires*, that offer most of the same services as chartered banks.

What about Credit Cards and Debit Cards?

Even though a large percentage of transactions are accomplished by using a plastic credit card, we do not consider the credit card itself money. Remember the functions of money. A credit card is not a unit of account or a store of value. The use of your credit card is really a loan to you by the issuer of the card, be it a bank, a retail store, or a gas company. The proceeds of the loan are paid to the business that sold you something. You must pay back the loan to the issuer of the credit card, either when you get your statement or with interest throughout the year if you do not pay off your balance. (We ignore those with credit card debt that they cannot repay.) It is not a store of value. Credit cards *defer*, rather than complete, transactions that ultimately involve the use of money. Refer to Example 12-7 for insight into the use of credit cards in Canada and Example 12-8 for a discussion of digital cash and stored value cards.

A newer transaction vehicle, the *debit card* automatically withdraws money from your bank account. When you use your debit card to purchase something, you are giving an instruction to your bank to transfer money directly from your bank account to the store's bank account. If the store in which you are shopping has a direct electronic link to the bank, that transfer may be made instantaneously. Use of a debit card does not create a loan. A debit card is, therefore, not a new type of "money."

EXAMPLE 12-7 Credit Cards and Canadians

Canadians hold more than 60 million credit cards of all types: gasoline cards, retail store cards, and all-purpose cards, such as Visa, MasterCard, and American Express.

Since the early 1990s, credit card use has grown by almost 60 percent in spite of slow average real income growth of about 1 percent over the same time period. Outstanding balances on Visa and MasterCard have continued to grow, boosting total consumer bank loans in the economy. These are expensive loans, however, for the average credit card interest rate is more than 10 percent above bank rates.

At these high rates, what induces consumers to buy on credit? First, the convenience of purchasing now without waiting for payday is a big attraction. Second, consumers are attracted by competition between bank card companies. Some cards award credit toward purchase of an automobile. Other cards give frequent flyer miles based on card use. Consumers have shown they find these offers hard to resist.

For critical analysis: What effect will these nonmoney transactions have on aggregate demand in the economy?

EXAMPLE 12-8 What Will Digital Cash Replace?

If people start to use smart cards, stored value cards, personal computers, and cellular phones to store and transmit digital cash, presumably they will have less desire to use other forms of money. To understand why, consider Table 12-2, which lists the key characteristics of cheques, government-issued currency, and digital cash.

Feature	Cheques	Currency	Digital Cash
Security	High	Low	High(?)
Per-Transfer Cost	High	Medium	Low
Payment Final, Face-to-face	No	Yes	Yes
Payment Final, Non-Face-to-Face	No	No	Yes
Anonymity	No	Yes	Yes
Acceptability	Restricted	Wide	Uncertain at present

TABLE 12-2**Features of Alternative Forms of Money**

Digital cash tends to overshadow government-issued currency.

Source: Aleksander Berentsen, "Monetary policy implications of digital money," *Kyklos* 51 (1998), p. 92.

In deciding whether to use currency or cheques, people must trade off features that each offers. Cheques promise greater security, because if a thief steals a woman's handbag containing cash and cheques, she can contact her depository institution to halt payment on all cheques in the handbag. Currency payments are final, however, and so the thief can spend all the cash he has taken from her. She can also send cheques through the mail, but using currency requires face-to-face contact. In addition, currency transactions are anonymous, which may be desirable under some circumstances. Nevertheless, not everyone will accept a cheque in payment for a transaction, and a cheque payment is not final until the cheque clears. Cheque transactions are also more expensive. After evaluating these features of currency and cheques, people typically choose to hold both payment instruments.

People will likewise compare the features that digital cash offers with the features currently offered by government-provided currency and chequing accounts available from depository institutions. As Table 12-2 indicates, the acceptability of digital cash is uncertain at present. Nonetheless, people are more and more inclined to accept a variety of payment options and in such an environment, digital cash would be nearly as acceptable as government-provided currency. But digital cash held on smart cards without special security features, such as personal identification numbers, will be as susceptible to theft as government currency. Some digital cash, however, may be held on devices, such as laptop computers or even wristwatches, requiring an access code before a microchip containing digital cash can be accessed. Overall, therefore, digital cash is likely to be somewhat more secure than government-provided currency, though not as secure as cheque transactions.

Digital cash transactions are likely to be less costly than currency transactions. People will also be able to access digital cash at home on their personal computers. In addition, they will be able to send digital cash from remote locations using the Internet, and digital cash transactions will be instantaneously final. Unlike transactions using currency, therefore, digital cash transactions need not be conducted face to face. Like currency transactions, however, most digital cash transfers will be anonymous.

In many respects, therefore, digital cash looks like a better means of payment than government-provided currency. Certainly, for some time to come, a number of items—canned beverages and candy in vending machines, for example—will be easiest to purchase using government-provided currency. Many economists, however, believe that widespread adoption of privately issued digital cash will ultimately tend to crowd out government-provided currency. The Federal Deposit Insurance Corporation (FDIC) in the United States has issued a proposed rule that suggests that under several conditions, stored value cards would qualify as "deposits," and that they view this rule as "evolutionary." On many college campuses, vending machines already accept stored value cards. Eventually, vending machines on street corners are likely to have smart card readers.

For critical analysis: Explain which functions of money stored value or digital cash fulfills. What forms of money will digital cash replace?