■ Ch. 2 Answers to Review Questions

2-1. Financial institutions are intermediaries that facilitate the flow of individual, business, and government savings into loans and investments. Broadly speaking, net savers (primarily individuals) prefer low risk and easy access to their money while net borrowers (businesses and government) would like to take risk with the funds and tie them up for a longer term. Financial institutions transform loans and investments into forms savers prefer to hold (such as deposits) or help net borrowers issue debt and equity instruments tailored to saver preferences.

2-2 Overall, the same entities that supply funds—individuals, businesses, and governments—also demand them, so these three groups are all financial-institution customers. That said, the key demanders of funds (net borrowers) are businesses and governments while the key suppliers (net savers) are individuals.

2-3 Commercial banks, investment banks, and the shadow-banking system are all financial institutions. Broadly speaking, commercial banks transform the deposits of net savers into loans to net borrowers. Investment banks, in contrast, do not "transform" the liquidity and riskiness of financial assets. Instead, they help "match" demanders and issuers of debt and equity instruments. Specifically, investment banks instruct companies on the best vehicles for raising capital, advise them on mergers/restructuring, and engage in trading and market-making to support their consulting function. Finally, the shadow-banking system performs services for net savers and borrowers similar to commercial banks—but without issuing deposits. By not relying on deposit funding, shadow banks can evade prudential regulation designed to constrain risk-taking by ordinary banks.

2-4. Financial markets facilitate direct interaction of suppliers and demanders of funds. In primary markets, debt and equity instruments are sold the first time—a direct exchange between the firm or government issuing securities and the purchasers. An example is Microsoft Corporation selling new shares of common stock to private investors. In secondary markets, previous issued securities are traded subsequent times; the original issuers receive no new funds. An example is an investor buying a share of outstanding Microsoft common stock from another investor through a broker. Put simply, primary markets feature sales of "new" securities while "used" security transactions take place in secondary markets. Primary and secondary markets have a symbiotic relationship—the easier the resale of a financial asset in a secondary market, the easier the initial sale of that asset in a primary market. Similarly, financial institutions and financial markets are far from independent. Commercial banks, for example, hold large inventories of U.S. Treasury securities to improve the liquidity and risk of their asset portfolio, and strong bank demand makes it easier for the Treasury to sell debt in the first place. Because banks have taken deposits and made loans since the days of goldsmiths in Medieval Europe, they enjoy a comparative advantage in originating and monitoring commercial loans. Aware of this advantage, the capital markets watch bank lending for clues about borrower financial strength. When a commercial bank announces a new loan to a publicly traded firm, that firm's stock price typically rises.

2-5 A private placement is the sale of a new security directly to an investor or a small group of sophisticated investors (such as insurance companies and pension funds). A public offering, in contrast, is the sale of newly issued stock or bonds to the public at large. Firms typically rely on public offerings when they need large sums.

2-6. The money market features trading in short-term, highly marketable debt instruments; "short term" here means an original maturity of one year or less. Money-market instruments typically carry low risk of capital losses. Examples of money-market instruments include U.S. Treasury bills, commercial paper, and negotiable certificates of deposit (issued by large commercial banks). The Eurocurrency market is the international analogue of the U.S. money market. This market features loans of currency held in banks outside the country where it is legal tender. Participants typically use the Eurocurrency market to evade domestic regulations and tax laws. The term stems from the European origin of this market; "Eurocurrency" has nothing to do with the euro *per se* and is no longer specific to Europe.

2-7. The capital market features trading in instruments with original maturities exceeding one year such as bonds and stock (common and preferred). Capital-market instruments are exchanged in broker and dealer markets. In broker markets, a broker coordinates buy and sell orders, executing trades at the midpoint of the bid/ask spread (the highest price a buyer is willing to pay minus the lowest price a seller is willing to accept). The best known broker market is the NYSE, which accounts for more than 25% of stock-market trades. In dealer markets, a market maker executes buy and sell orders using her personal inventory and two distinct trades. For example, an investor might sell the dealer Microsoft stock at the bid price and then, in an independent transaction, another investor would buy Microsoft stock from the dealer at the ask price. "Ask" exceeds "bid," so the dealer's reward for maintaining an inventory of Microsoft stock is the opportunity to "buy low, sell high." The difference, in short, between broker and dealer markets turns on whether traders or dealers provide the liquidity.

2-8 Firms see the capital market as a source of external finance for long-term projects. Put another way, they sell new bonds and stock to raise funds to build factories, launch marketing campaigns, and expand into new markets. Accordingly, they want a liquid market—one "deep" enough to accept newly issued securities at favorable prices. Investors, in contrast, see the capital market as a savings vehicle for long-term needs like retirement. As citizens of the macroeconomy, investors would also like the capital market to steer scarce funds to the most productive uses. To these ends, investors want an efficient capital market—one where securities prices reflect all available information and react swiftly to new information. Capital-market efficiency means investors need not waste time trying to identify over or undervalued securities or exploitable patterns in securities prices. Instead, they can maximize long-term returns by putting their savings in diversified mutual funds (i.e., avoiding countless hours studying individual stocks and bonds). Investors will also enjoy higher aggregate growth of output and employment from the spotlight securities prices shine on firms most able to profitably use their savings.

2-9 The first years of Great Depression featured the worst contraction in American history. Between August 1929 and March 1933, industrial production fell 52%, the Dow Jones Industrial Average tumbled 89%, unemployment soared to nearly 25%, and roughly 9,000 banks failed (37% of those operating in December 1929). Franklin Roosevelt won the 1932 election with a mandate to restore prosperity and prevent future depressions. Much of the U.S. framework for financial and financial-institution regulation stems from the First New Deal (1933–34). This framework addressed specific factors thought to have caused the slump. To protect depositors from losses in bank failures, the Banking Act of 1933 created federal deposit insurance. To prevent failures in the first place, the Act also barred commercial banks from security underwriting, which was thought to pose dangerous additional risks. To head off fraudulent investment schemes like those preceding the stock-market crash of 1929, the Securities Act of 1933 and Securities Exchange Act of 1934 forced companies wishing to issue public securities to disclose information about their financial condition.

2-10 Both Acts required companies wishing to participate in securities markets to disclose significant information to the public. The Securities Act of 1933 focused on the primary market, compelling sellers of new securities provide reasonably accurate portrayals of their firms to prospective investors. The Securities Exchange Act of 1934, in contrast, regulated trading in secondary markets; forcing publicly traded companies to keep investors informed about firm condition on an ongoing basis. The latter Act also created the Securities Exchange Commission to enforce federal securities laws.

2-11 Angel investors and venture capitalists are both sources of private equity. "Angels" are usually wealthy individuals who fund promising start-ups in return for a slice of firm equity. Venture capitalists, in contrast, are businesses that pool contributions from individuals (often institutional investors like university endowments and pension funds) and invest those funds in promising start-ups. In short, angels pick "winners" themselves whereas venture capitalists pick "winners" for their clients.

2-12 Venture capitalists (VCs) are organized as (i) limited partnerships (most common), (ii) small business investment companies (SBICs), (iii) financial funds, and (iv) corporate funds. The principal difference is how the VC was created. The federal government charters SBICs. Financial institutions (usually commercial banks), in contrast, create financial funds as subsidiaries while nonfinancial firms launch corporate funds, sometimes as subsidiaries. Unlike other VC types, limited partnerships are launched by private individuals. All VCs use a legal agreement to specify deal structure and pricing. Deal structure allocates responsibilities between the start-up and VC and may include constraints on the firm to enhance its chance of success and mitigate VC risk. Pricing depends on the (i) value of the start-up, (ii) perceived risk of its business operations, and (iii) amount of funding needed. In general, VCs provide less funding and require a greater ownership stake when the firm is the early stages of development.

2-13 Firms wishing to go public must (i) secure approval from current shareholders, (ii) obtain certification of the accuracy of their financial documents from company auditors and lawyers, (iii) hire an originating investment bank, (iv) file a registration statement with the Securities and Exchange Commission (SEC), (v) participate in roadshows with the investment bank to spark interest among potential investors and learn about a suitable issuing price, (vi) obtain final SEC approval after the investment bank has finalized issue terms and offer price, and (vii) sell the issue to the investment bank at the guarantee price. The investment bank will then assume the risk of placing the issue with primary-market investors.

2-14 Broadly speaking, an investment bank facilitates a firm's issuance of new securities. In a common-stock issue, the bank helps the issuer file a registration statement with the SEC and market the offering to potential investors in a roadshow. The bank also sets the offering price and other terms of the issue. All along the way, the originating investment bank provides advice to help the issuer maximize the volume of funds raised. Finally, the originating bank buys the new securities from the issuer at the guarantee price and then resells the issue to primary-market investors. Sometimes the bank will form a syndicate of other investment banks to share the financial risk of placing the issue.

2-15 Securitization is the process of creating highly liquid marketable securities out of illiquid assets. The first assets securitized on a large scale were residential mortgages—securitizers "pooled" the mortgages and then issued debt claims backed by cash flows from those pools. In other words, the interest and principal on "mortgage-backed" securities (MBSs) paid to investors came from mortgage payments by residential homeowners. Securitization facilitated investment in mortgages by unbundling risk. Lenders might need their funds before the mortgage is repaid or lose money if the homeowner defaults. Securitization allows mortgage originators to earn fees from making the loans but then reduce liquidity and credit risk by selling the mortgage to a securitizer (who, in turn, creates a security with cash flows tailored to the preferences of market investors). Securitizing mortgages promotes efficient risk sharing, which in turn, makes the real-estate sector a more attractive place to invest.

2-16 A mortgage-backed security (MBS) is a debt instrument backed by residential mortgages. "Backed" means principal and interest paid to MBS investors come from payments by residential homeowners with mortgages in the underlying pool. The primary MBS risk is credit risk, the chance homeowners will not make monthly principal and interest payments as stipulated in their mortgage contracts.

2-17 When a home buyer takes out a mortgage, initial equity—the difference between purchase price and mortgage-loan balance—is simply the down payment. Over time, equity will rise as the borrower reduces the mortgage balance with monthly principal and interest payments. Should housing prices rise, the gap between house value and mortgage balance will widen further—that is to say, home equity rises even faster. If a borrower needs to skip a mortgage payment, the lender will typically allow her to tap equity. Rising prices also imply a vibrant housing market, so a borrower permanently unable to make the monthly payments can easily sell her home to pay off the mortgage.

2-18. A large decline in housing prices could push the value of a borrower's home below the mortgage balance. With negative equity, the borrower could hold the loss at the original down payment by allowing the lender to foreclose. The only cost would be the negative impact on the borrower's credit score. But if the decline in housing prices has led many other homeowners to walk away from their mortgages, this borrower may not be too concerned about the blot on her credit report, thinking future lenders will understand the circumstances.

2-19 The Great Recession of 2007–09 illustrates how a financial-sector crisis can metastasize. In the years running up to the recession, securitizers increasingly pooled mortgage loans to borrowers with less-than-stellar credit. At the time, "subprime" loans seemed relatively low risk because of rapidly rising housing prices. Then, when home prices began to level off (and even dip in some markets), mortgage delinquencies and defaults started climbing. With payments on underlying mortgages falling, the value of mortgage-back securities (MBSs) began to fall as well. Large investment banks (like Lehmann Brothers) and commercial banks (like Citibank) held considerable inventories of now-problematic MBSs. To offset rising MBS losses, commercial banks sharply curbed lending, which produced an economy-wide decline in consumer and investment spending. Investment banks, meanwhile, were large players in the money market—Lehmann, for example, routinely sold a large amount of commercial paper (short-term unsecured corporate debt). When the firm collapsed almost overnight (rendering its commercial paper worthless), the money market froze as investors became wary of all unsecured debt. Now, nonfinancial companies that regularly tapped the money market for short-term funding found themselves in squeeze. They responded by slashing costs and hoarding cash, which put even more downward pressure on economy-wide consumer and investment spending.