

22.5 MONITORING AND REVISING INVESTMENT PORTFOLIOS

Choosing the investment portfolio requires the investor to set objectives, acknowledge constraints, determine asset-class proportions, and perform security analysis. Is the process ever finished and behind us? By the time we have completed all of these steps, many of the inputs we have used will be out of date. Moreover, our circumstances as well as our objectives change over time. Therefore, the investment process requires that we continually monitor and update our portfolios. This is the task of rebalancing, part of the feedback process described earlier in Table 22.1 and Figure 22.1.

Moreover, even when circumstances do not change, our portfolios necessarily will. Suppose you currently hold 1,000 shares of ExxonMobil, selling at \$90 a share, and 1,000 shares of Microsoft, selling at \$50. If the price of ExxonMobil falls to \$80 a share, while that of Microsoft rises to \$60, the fractions of your portfolio allocated to each security change without your taking any direct action. The value of your investment in ExxonMobil is now lower, and the value of the Microsoft investment is higher. Unless you are happy with this reallocation of investment proportions, you will need to take some action to restore the portfolio weights to desired levels.

Asset allocation also will change over time, as the investment performance of different asset classes diverges. If the stock market outperforms the bond market, the proportion of your portfolio invested in stocks will increase while the proportion invested in bonds will decrease. If you are uncomfortable with this shift in the asset mix, you must rebalance the portfolio by selling some of the stocks and purchasing bonds.

Therefore, investing is a *dynamic process*, meaning that you must continually update and reevaluate your decisions over time.

- The CFA Institute has developed a systematic framework for the translation of investor goals to investment strategy. Its three main parts are objectives, constraints, and policy. Investor objectives include the return requirement and risk tolerance, reflecting the overriding concern of investment with the risk-return trade-off. Investor constraints include liquidity requirements, investment horizon, regulatory concerns, tax obligations, and the unique needs of various investors. Investment policies specify the portfolio manager's asset allocation and security selection decisions.
- Major institutional investors include pension funds, mutual funds, life insurance companies, non-life-insurance companies, banks, and endowment funds. For individual investors, life-cycle concerns are the most important factor in setting objectives, constraints, and policies.
- Major asset classes include cash (money market assets), fixed-income securities (bonds), stocks, real estate, precious metals, and collectibles. Asset allocation refers to the decision made as to the investment proportion to be allocated to each asset class. An active asset allocation strategy calls for the production of frequent market forecasts and the adjustment of asset allocation according to these forecasts.
- Active security selection requires security analysis and portfolio choice. Analysis of individual securities is required to choose securities that will make up a coherent portfolio and outperform a passive benchmark.
- Perhaps the most important feature of the investment process is that it is dynamic. Portfolios must be continually monitored and updated. The frequency and timing of various decisions are in themselves important decisions. Successful investment management requires management of these dynamic aspects.

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KEY TERMS

equivalents would be considered fairly conventional. A purely passive manager would not depart from these weights in response to forecasts of market performances. The weighting scheme would be adjusted only in response to changes in risk tolerance as age and wealth change over time.

Next consider passive security selection. Imagine that you must choose a portfolio of stocks without access to any special information about security values. This would be the case if you believed that anything you know about a stock is already known by the rest of the investors in the market and therefore is already reflected in the stock price. If you cannot predict which stocks will be winners, you should broadly diversify your portfolio to avoid putting all your eggs in one basket. A natural course of action for such an investor would be to choose a portfolio with "a little bit of everything."

This reasoning leads one to look for a portfolio that is invested across the entire security market. We saw in Chapter 4 that some mutual fund operators have established index funds that follow just such a strategy. These funds hold each stock or bond in proportion to its representation in a particular index, such as the Standard & Poor's 500 stock price index or the Barclays Capital Aggregate Bond Index. Holding an indexed portfolio represents purely passive security selection in that the investor's return simply duplicates the return of the overall market without making a bet on one or another stock or sector of the market.

In contrast to passive strategies, active management assumes an ability to outguess other investors and to identify either securities or asset classes that will shine in the near future. Active security selection for institutional investors typically requires two layers: security analysis and portfolio choice. Security analysts specialize in particular industries and companies and prepare assessments of their particular market niches. The portfolio managers then sift through the reports of many analysts. They use forecasts of market conditions to make asset allocation decisions and use the security analysts' recommendations to choose the particular securities to include within each asset class.

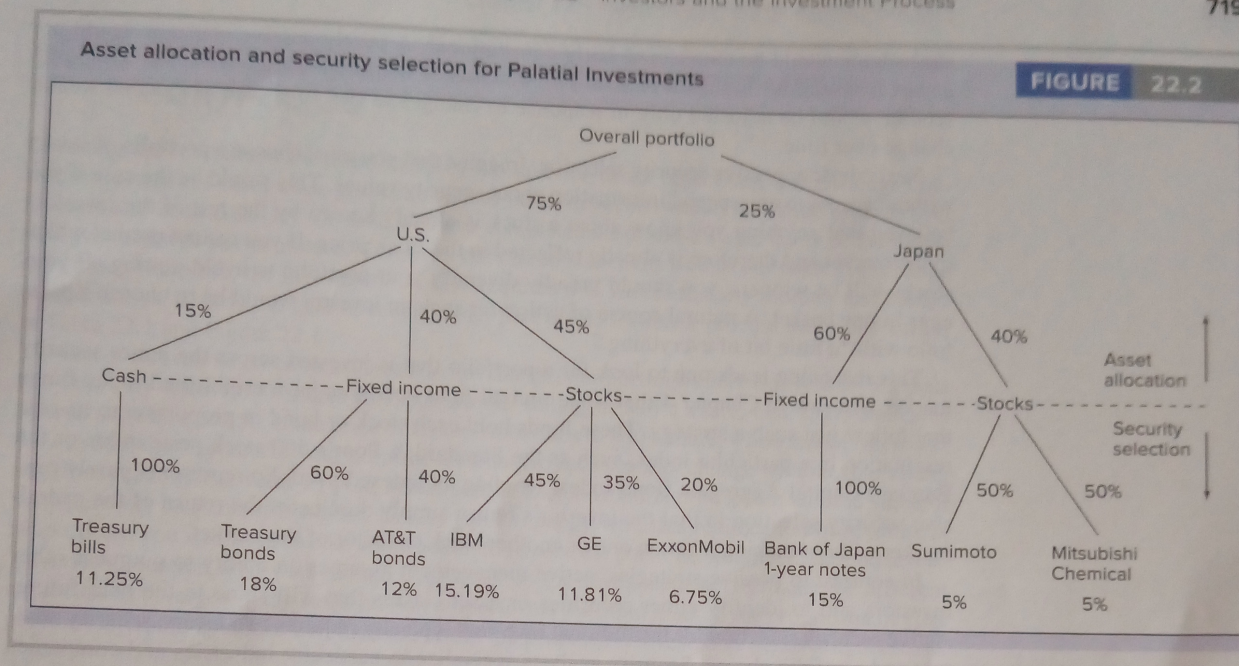
The choice between active and passive strategies need not be all-or-nothing. One can pursue both active security selection and passive asset allocation, for example. In this case, the manager would maintain fixed asset allocation targets but would actively choose the securities within each asset class. Or one could pursue active asset allocation and passive security selection. In this case, the manager might actively shift the allocation between equity and bond components of the portfolio but hold indexed portfolios within each sector. Another mixed approach is called a *passive core* strategy. In this case, the manager indexes *part* of the portfolio, the passive core, and actively manages the rest of the portfolio.

Is active or passive management the better approach? It might seem at first blush that active managers have the edge because active management is necessary to achieve outstanding performance. But remember that active managers start out with some disadvantages as well. They incur significant costs when preparing their analyses of markets and securities and incur heavier trading costs from the more rapid turnover of their portfolios. If they don't uncover information or insights currently unavailable to other investors (not a trivial task in a nearly efficient market), then all of this costly activity will be wasted, and they will underperform a passive strategy. In fact, low-cost passive strategies have performed surprisingly well in the last few decades, as we saw in Chapters 4 and 8.

CONCEPT check 22.3

Classify the following statements according to where each fits in the objective-constraints-policies framework.

- a. Invest 5% in bonds and 95% in stocks.
- b. Do not invest more than 10% of the budget in any one security.
- c. Shoot for an average rate of return of 11%.
- d. Make sure there is \$95,000 in cash in the account on December 31, 2030.
- e. If the market is bearish, reduce the investment in stocks to 80%.
- f. As of next year, we will be in a higher tax bracket.
- g. Our new president believes pension plans should take no risk whatsoever with the pension fund.
- h. Our acquisition plan will require large sums of cash to be available at any time.



These ever-finer decisions determine the proportion of each individual security in the overall portfolio. As an example, consider the determination of the proportion of Palatial's portfolio invested in ExxonMobil, 6.75%. This fraction results from the following decisions: First, the United States receives a weight of 75% of the overall portfolio, and equities comprise 45% of the U.S. component of the portfolio. These are asset allocation choices. ExxonMobil comprises 20% of the U.S. equity component of the portfolio. This is a security selection choice. Therefore, ExxonMobil's weight in the overall portfolio is $.75 \times .45 \times .20 = .0675$, or 6.75%. If the entire portfolio is \$1 billion, \$67,500,000 will be invested in ExxonMobil. If ExxonMobil is selling for \$90 a share, 750,000 shares must be purchased. The bottom line in Figure 22.2 shows the percentage of the overall portfolio held in each asset.

This example illustrates a top-down approach that is consistent with the needs of large organizations. The top managers set the overall policy of the portfolio by specifying asset allocation guidelines. Lower-level portfolio managers fill in the details with their security selection decisions.

Active versus Passive Policies

One choice that must be confronted by all investors, individual as well as institutional, is the degree to which the portfolio will be actively versus passively managed. Recall that passive management is based on the belief that security prices usually are close to "fair" levels. Instead of spending time and other resources attempting to "beat the market," that is, to find mispriced securities with unusually attractive risk-return characteristics, the investor simply assumes that she will be fairly compensated for the risk she is willing to take on and selects a portfolio consistent with her risk tolerance.³

Passive management styles can be applied to both the security selection and the asset allocation decisions. With regard to asset allocation, passive management simply means that the manager does not depart from his or her "normal" asset-class weightings in response to changing expectations about the performance of different markets. Those "normal" weights are based on the investor's risk and return objectives, as discussed earlier. For example, an asset allocation for a 45-year-old investor of 65% equity, 20% bonds, and 15% cash

³We discussed arguments for passive management in previous chapters.

The most important portfolio decision an investor makes is the proportion of the total investment fund allocated to risky as opposed to safe assets. This choice is the most fundamental means of controlling investment risk.

It follows that the first decision an investor must make is the asset allocation decision. Asset allocation refers to the allocation of the portfolio across major asset categories such as:

1. Money market assets (cash equivalents).
2. Fixed-income securities (primarily bonds).
3. Stocks.
4. Non-U.S. stocks and bonds.
5. Real estate.
6. Precious metals and other commodities.

Only after the broad asset classes to be held in the portfolio are determined can one sensibly choose the specific securities to purchase.

Investors who have relatively high degrees of risk tolerance will choose asset allocations more concentrated in higher-risk investment classes, such as equity, to obtain higher expected rates of return. More conservative investors will choose asset allocations with a greater weight in bonds and cash equivalents.

Asset allocation also will depend on expectations for capital market performance in the coming period. (Look back at Figure 22.1 and Table 22.1, and you will see that the CFA Institute classifies this part of the planning process as the formation of "capital market expectations.") Given the risk-return positioning of the investor and the set of expectations, an optimal asset mix may be formed (see step II, Execution, in Table 22.1).

Top-Down Policies for Institutional Investors

Individual investors need not concern themselves with organizational efficiency. But professional investors with large amounts to invest must structure asset allocation activities to decentralize some of the decision making.

A common feature of large organizations is the investment committee and the asset universe. The investment committee includes top management officers, senior portfolio managers, and senior security analysts. The committee determines investment policies and verifies that portfolio managers and security analysts are operating within the bounds of specified policies. A major responsibility of the investment committee is to translate the objectives and constraints of the company into an **asset universe**, an approved list of assets for each of the company's portfolios.

Thus, the investment committee has responsibility for broad asset allocation. While the investment manager might have some leeway to tilt the portfolio toward or away from one or another asset class, the investment committee establishes the benchmark allocation that largely determines the risk characteristics of the portfolio. The task of choosing specific securities from the approved universe is more fully delegated to the investment manager.

Figure 22.2 illustrates the stages of the portfolio choice process for Palatial Investments, a hypothetical firm that invests internationally. The first two stages are asset allocation choices. The broadest choice is in the weighting of the portfolio between U.S. and Japanese securities. Palatial has chosen a weight of 75% in the United States and 25% in Japan. The allocation of the portfolio across asset classes may now be determined. For example, 15% of the U.S. portfolio is invested in cash equivalents, 40% in fixed income, and 45% in equity. The asset-class weights are, in general, a policy decision of the investment committee, although the investment manager might have some authority to alter the asset allocation to limited degrees based on her expectations concerning the investment performance of various asset classes. Finally, security selection within each country is determined by the portfolio manager from the approved universe. For example, 45% of funds held in the U.S. equity market will be placed in IBM, 35% in GE, and 20% in ExxonMobil. (We show only three securities in the figure because of space limitations. Obviously a \$1 billion fund will hold securities of many more firms.)

asset universe

Approved list of assets in which a portfolio manager may invest.

On the MARKET FRONT

DESIRABLE COMPONENTS OF AN INVESTMENT POLICY STATEMENT FOR INDIVIDUAL INVESTORS

SCOPE AND PURPOSE

- Define the context.
- Define the investor.
- Define the structure.

GOVERNANCE

- Specify responsibility for determining investment policy.
- Describe process for review of IPS.

- Describe responsibility for engaging/discharging external advisers.
- Assign responsibility for determination of asset allocation.
- Assign responsibility for risk management.

INVESTMENT, RETURN, AND RISK OBJECTIVES

- Describe overall investment objective.
- State return, distribution, and risk requirements.
- Describe relevant constraints.
- Describe other relevant considerations.

RISK MANAGEMENT

- Establish performance measurement accountabilities.
- Specify appropriate metrics for risk measurement.
- Define a process by which portfolios are rebalanced.

22.4 INVESTMENT POLICIES

Once objectives and constraints are determined, an investment policy that suits the investor can be formulated. That policy must reflect an appropriate risk-return profile as well as needs for liquidity, income generation, and tax positioning. Institutional investors such as pension plans and endowments often must issue formal statements of their investment policy. These policy statements should be based on, and often make explicit, the objectives and constraints of the investment fund.

The investment policy statement serves as a strategic guide to the planning and implementation of an investment program.² When implemented successfully, the IPS anticipates issues related to governance of the investment program, planning for appropriate asset allocation, implementing an investment program with internal and/or external managers, monitoring the results, risk management, and appropriate reporting. The IPS also establishes accountability for the various entities that may work on behalf of an investor. Perhaps, most importantly, the IPS serves as a policy guide that can offer an objective course of action to be followed during periods of disruption when emotional or instinctive responses might otherwise motivate less prudent actions.

The nearby box suggests desirable components of an investment policy statement for use with individual and/or high-net-worth investors. Not every component will be appropriate for every investor or every situation, and there may be other components that are desirable for inclusion reflecting unique investor circumstances.

The following is an example of a portion of a policy statement for a defined benefit pension plan.

The Plan should emphasize production of adequate levels of real return as its primary return objective, giving special attention to the inflation-related aspects of the plan. To the extent consistent with appropriate control of portfolio risk, investment action should seek to maintain or increase the surplus of plan assets relative to benefit liabilities over time. Five-year periods, updated annually, shall be employed in planning for investment decision making; the plan's actuary shall update the benefit liabilities breakdown by country every three years.

The orientation of investment planning shall be long term in nature. In addition, minimal liquidity reserves shall be maintained so long as annual company funding contributions and investment income exceed annual benefit payments to retirees and the operating expenses of the plan. The plan's actuary shall update plan cash flow projections annually. Plan administration shall ensure compliance with all laws and regulations related to maintenance of the plan's tax-exempt status and with all requirements of the Employee Retirement Income Security Act (ERISA).

²This material is adapted from documents of the CFA Institute that were made available to the authors in draft form. They may differ from the final published documents.

TABLE 22.5 Matrix of constraints

Type of Investor	Liquidity	Horizon	Regulatory	Taxes
Individuals and personal trusts	Variable	Life cycle	Prudent investor laws (for trusts)	Variable
Mutual funds	Low	Short	Little	None
Pension funds	Young, low; mature, high	Long	ERISA	None
Endowment funds	Little	Long	Little	None
Life insurance companies	Low	Long	Complex	Yes
Non-life-insurance companies	High	Short	Little	Yes
Banks	Low	Short	Changing	Yes

Other unique needs of individuals often center around their stage in the life cycle, as previously discussed. Retirement, housing, and children's education constitute three major demands for funds, and investment policy will depend in part on the proximity of these expenditures.

Institutional investors also face unique needs. For example, pension funds will differ in their investment policy, depending on the average age of plan participants. Another example of a unique need for an institutional investor would be a university whose trustees allow the administration to use only cash income from the endowment fund. This constraint would translate into a preference for high-dividend-paying assets.

Table 22.5 presents a matrix of constraints for various investors. As you would expect, liquidity and tax constraints for individuals are variable because of wealth and age differentials.

A particular constraint for mutual funds arises from investor response to the fund's performance. When a mutual fund earns an unsatisfactory rate of return, investors often redeem their shares—they withdraw money from the fund. The mutual fund then contracts. The reverse happens when a mutual fund earns an unusually high return: It can become popular with investors overnight, and its asset base will grow dramatically.

Pension funds are heavily regulated by the Employee Retirement Income Security Act of 1974 (ERISA). This law revolutionized savings for retirement in the United States and remains a major piece of social legislation. Thus, for pension funds, regulatory constraints are relatively important. Also, mature pension funds are required to pay out more than young funds and hence need more liquidity.

Endowment funds, on the other hand, usually do not need to liquidate assets, or even use dividend income, to finance payouts. Contributions are expected to exceed payouts and increase the real value of the endowment fund, so liquidity is not an overriding concern.

Life insurance companies are subject to complex regulation. The corporate tax rate, which today is 35% for large firms, also applies to insurance company investment income, so taxes are an important concern.

Property and casualty insurance, like term life insurance, is written on a short-term basis. Most policies must be renewed annually, which means property and casualty insurance companies are subject to short-term horizon constraints.

The short horizon constraint for banks comes from the interest rate risk component of the interest rate spread (i.e., the risk of interest rate increases that banks face when financing long-term assets with short-term liabilities).

**CONCEPT
check****22.2**

- Think about the financial circumstances of your closest relative in your parents' generation (for example, your parents' household if you are fortunate enough to have them around). Write down the objectives and constraints for their investment decisions.
- Now consider the financial situation of your closest friend or relative who is in his or her 30s. Write down the objectives and constraints that would fit his or her investment decision.
- How much of the difference between the two statements is due to the age of the investors?

and commercial paper, where the bid-ask spread is a small fraction of 1%, are the most liquid assets, and real estate is among the least liquid. Office buildings and manufacturing structures in extreme cases can suffer a 50% liquidity discount.

Both individual and institutional investors must consider how likely they are to require cash at short notice. From this likelihood, they establish the minimum level of liquid assets they need in the investment portfolio.

Investment Horizon

This is the *planned* liquidation date of the investment. Examples of an individual's **investment horizon** could be the time to fund a college education or the retirement date for a wage earner. For a university or hospital endowment, an investment horizon could relate to the time to fund a major construction project. Horizon dates must be considered when investors choose between assets of various maturities. For example, the maturity date of a bond might make it a more attractive investment if it coincides with a date on which cash is needed. This idea is analogous to the matching principle from corporate finance: Strive to match financing maturity to the economic life of the financed asset.

investment horizon

The planned liquidation date.

Regulations

Only professional and institutional investors are constrained by regulations. First and foremost is the **prudent investor rule**. That is, professional investors who manage other people's money have a fiduciary responsibility to restrict investment to assets that would have been approved by a prudent investor. The law is purposefully nonspecific. Every professional investor must stand ready to defend an investment policy in a court of law, and interpretation may differ according to the standards of the times.

prudent investor rule

The fiduciary responsibility of a professional investor.

Also, specific regulations apply to various institutional investors. For instance, U.S. mutual funds may not hold more than 5% of the shares of any publicly traded corporation.

Sometimes, "self-imposed" regulations also affect the investment choice. We have noted several times, for example, that mutual funds describe their investment policies in a prospectus. These policy guidelines amount to constraints on the ability to choose portfolios freely.

Tax Considerations

Tax consequences are central to investment decisions. The performance of any investment strategy should be measured by its rate of return *after* taxes. For household and institutional investors who face significant tax rates, tax sheltering and deferral of tax obligations may be pivotal in their investment strategy.

Unique Needs

Virtually every investor faces special circumstances. Imagine husband-and-wife aeronautical engineers holding high-paying jobs in the same aerospace corporation. The entire human capital of that household is tied to a single player in a rather cyclical industry. This couple would need to hedge the risk of a deterioration in the economic well-being of the aerospace industry.

Similar issues would confront an executive on Wall Street who owns an apartment near work. Because the value of the home in that part of Manhattan probably depends on the vitality of the securities industry, the individual is doubly exposed to the vagaries of the stock market. Because both job and home already depend on the fortunes of Wall Street, the purchase of a typical diversified stock portfolio would actually increase the exposure to the stock market.

These examples illustrate that the job, or more generally, human capital, is often an individual's biggest "asset," and the unique risk profile that results from employment can play a big role in determining a suitable investment portfolio.

TABLE 22.4 Matrix of objectives

Type of Investor	Return Requirement	Risk Tolerance
Individual and personal trusts	Life cycle (education, children, retirement)	Life cycle (younger are more risk tolerant)
Mutual funds	Variable	Variable
Pension funds	Assumed actuarial rate	Depends on proximity of payouts
Endowment funds	Determined by current income needs and need for asset growth to maintain real value	Generally conservative
Life insurance companies	Should exceed new money rate by sufficient margin to meet expenses and profit objectives; also actuarial rates important	Conservative
Non-life-insurance companies	No minimum	Conservative
Banks	Interest spread	Variable

**CONCEPT
check****22.1**

Describe several distinguishing characteristics of endowment funds that differentiate them from pension funds.

Table 22.4 summarizes the objectives governing these classes of investors.

22.3 INVESTOR CONSTRAINTS

Even with identical attitudes toward risk, different households and institutions might choose different investment portfolios because of their differing circumstances. These circumstances include tax status, requirements for liquidity or a flow of income from the portfolio, or various regulatory restrictions. These circumstances impose *constraints* on investor choice. Together, objectives and constraints determine investment policy.

As noted, constraints usually have to do with investor circumstances. For example, if a family has children about to enter college, there will be a high demand for liquidity because cash will be needed to pay tuition bills. Other times, however, constraints are imposed externally. For example, banks and trusts are subject to legal limitations on the types of assets they may hold in their portfolios. Finally, some constraints are self-imposed. For example, *social investing* means that investors will not hold shares of firms involved in ethically objectionable activities. Some criteria that have been used to judge firms as ineligible for a portfolio are involvement in countries with human rights abuses, production of tobacco or alcohol, and participation in polluting activities.

Five common types of constraints are described below.

Liquidity**liquidity**

The speed and ease with which an asset can be converted to cash.

Liquidity is the speed and ease with which an asset can be sold and still fetch a fair price, or the price discount necessary to achieve an immediate sale. It is a relationship between the time dimension (how long it will take to sell) and the price dimension (the discount from fair market price) of an investment asset.

When an actual concrete measure of liquidity is necessary, one thinks of the discount when an immediate sale is unavoidable.¹ Cash and money market instruments such as Treasury bills

¹In many cases, it is impossible to know the liquidity of an asset with certainty until it is put up for sale. In more active markets, however, the liquidity of the traded assets can be observed from the bid-ask spread, that is, the difference between the "bid" quote (the lower price available when someone wishes to sell an asset) and the "ask" quote (the higher price a buyer would have to pay to acquire the asset).

in the event of death) according to their changing needs. Furthermore, the interest rate on the cash value component changes with market interest rates. The great advantage of variable and universal life insurance policies is that earnings on the cash value are not taxed until the money is withdrawn.

Non-Life-Insurance Companies

Non-life-insurance companies such as property and casualty insurers have investable funds primarily because they pay claims *after* they collect policy premiums. Typically, they are conservative in their attitude toward risk.

A common thread in the objectives of pension plans and insurance companies is the need to hedge predictable long-term liabilities. Investment strategies typically call for hedging these liabilities with bonds of various maturities.

Banks

Most bank investments are loans to businesses and consumers, and most of their liabilities are accounts of depositors. As investors, banks try to match the risk of assets to liabilities while earning a profitable spread between the lending and borrowing rates.

Most liabilities of banks and thrift institutions are checking accounts, time or savings deposits, and certificates of deposit (CDs). Checking account funds may be withdrawn at any time, so they are of the shortest maturity. Time or savings deposits are of various maturities. Some time deposits may extend as long as seven years, but, on average, they are of fairly short maturity. CDs are bonds of various maturities that the bank issues to investors. While the range of maturities is from 90 days to 10 years, the average is about one year.

In the past, a large part of the loan portfolio of savings and loan (S&L) institutions was in home mortgages, with typical maturities of 15 to 30 years. Today, the bulk of thrifts' portfolios are business loans. The maturities of these loans typically are less than those of mortgages but still generally exceed the maturities of sources of financing. Thus, profits are exposed to interest rate risk. When rates rise, thrifts have to pay higher rates to depositors, while the income from their longer-term investments is relatively fixed.

Banks earn profit from the interest rate spread between loans extended (the bank's assets) and deposits and CDs (the bank's liabilities), as well as from fees for services. Managing bank assets calls for balancing the loan portfolio with the portfolio of deposits and CDs. A bank can increase the interest rate spread by lending to riskier borrowers and by increasing the proportion of longer-term loans. However, both of these policies increase risk. Because bank capital regulations now are risk-based, so higher-risk strategies will elicit higher capital requirements as well as the possibility of greater regulatory interference in the bank's affairs.

As we noted in Chapter 2, most long-term fixed-rate mortgages today are securitized into pass-through certificates and held as securities in the portfolios of mutual funds, pension funds, and other institutional investors. Mortgage originators typically sell a portion of the mortgages they originate to pass-through agencies like Fannie Mae or Freddie Mac rather than holding them in a portfolio. They earn their profits on mortgage origination and servicing fees. The trend away from maintaining portfolio holdings of long-term mortgages also has reduced interest rate risk.

Endowment Funds

Endowment funds are held by organizations chartered to use their money for specific non-profit purposes. They are financed by gifts from one or more sponsors and are typically managed by educational, cultural, and charitable organizations or by independent foundations established solely to carry out the fund's specific purposes. Generally, the investment objectives of an endowment fund are to produce a steady flow of income subject to only a moderate degree of risk. Trustees of an endowment fund, however, can specify other objectives as circumstances dictate.

endowment funds

Portfolios operated for the benefit of a nonprofit entity.

each year of service. A 30-year employee would then receive an annual benefit equal to 60% of his or her final salary. The payments are an obligation of the employer, and the assets in the pension fund provide collateral for the promised benefits. If the investment performance of the assets is poor, the firm is obligated to make up the shortfall by contributing additional assets to the fund. Therefore, in contrast to defined contribution plans, the risk surrounding investment performance in defined benefit plans is borne by the firm.

The pension fund sponsor, the corporation that sets up the fund, appoints a pension fund manager. While its presumed constituency is the group of retirees covered by the fund, the sponsor's management still exerts influence over the fund manager. Between these two entities, asset allocation is hatched. At this point, the pension actuary retained by the fund must sign off on the expected rate of return assumed for the asset portfolio. This is used as the discount rate to compute the present value of fund obligations, which determines whether the pension liabilities are adequately funded or additional funds need to be endowed by the sponsor to meet these liabilities. For example, if the actuary assumes a rate of return of 10%, then the firm must contribute \$385.54 now to fund \$1,000 of pension liabilities that will arise in 10 years, because $\$385.54 \times 1.10^{10} = \$1,000$.

If a pension fund's *actual* rate of return exceeds the actuarial *assumed* rate, the firm's shareholders reap the gain, because the excess return can be used to reduce future contributions. If the plan's actual rate of return falls short of the assumed rate, however, the firm will have to increase future contributions. Because the sponsoring firm's shareholders bear the risk in a defined benefit pension plan, the objective of the plan will be consistent with the objective of the firm's shareholders. Thus, a conflict of interest is created: Although the fund in principle should be run for the benefit of the retirees, because the pension plan manager and actuary are retained and compensated by the sponsor, the interests of shareholders may, in practice, be treated as paramount.

Life Insurance Companies

Life insurance companies generally invest to hedge their liabilities, which are defined by the policies they write. The company can reduce risk by investing in assets that will return more in the event the insurance policy coverage becomes more expensive.

For example, if the company writes a policy that pays a death benefit linked to the consumer price index, then the company is subject to inflation risk. It might search for assets expected to return more when the rate of inflation rises, thus hedging the price-index linkage of the policy.

There are as many objectives as there are distinct types of insurance policies. Until the 1970s, only two types of life insurance policies were available for individuals: whole-life and term.

A *whole-life insurance policy* combines a death benefit with a kind of savings plan that provides for a gradual buildup of cash value that the policyholder can withdraw later in life, usually at age 65. *Term insurance*, on the other hand, provides death benefits only, with no buildup of cash value.

The interest rate embedded in the schedule of cash value accumulation promised under the whole-life policy is a fixed rate. One way life insurance companies try to hedge this liability is by investing in long-term bonds. Often the insured individual has the right to borrow at a prespecified fixed interest rate against the cash value of the policy.

During the high-interest-rate years of the 1970s and early 1980s, many older whole-life policies allowed policyholders to borrow at rates as low as 4% or 5% per year; some holders borrowed heavily against the cash value to invest in assets paying double-digit yields. Other actual and potential policyholders abandoned whole-life policies and took out term insurance, which accounted for more than half the volume of new sales of individual life policies.

In response to these developments, the insurance industry came up with two new policy types: variable life and universal life. A *variable life policy* entitles the insured to a fixed death benefit plus a cash value that can be invested in the policyholder's choice of mutual funds. A *universal life policy* allows policyholders to increase or reduce either the insurance premium (the annual fee paid on the policy) or the death benefit (the cash amount paid to beneficiaries

- 2C. What would you do if the goal were 30 years away?
- Sell
 - Do nothing
 - Buy more
3. The price of your retirement investment jumps 25% a month after you buy it. Again, the fundamentals haven't changed. After you finish gloating, what do you do?
- Sell it and lock in your gains
 - Stay put and hope for more gain
 - Buy more: It could go higher
4. You're investing for retirement, which is 15 years away. Which would you rather do?
- Invest in a money-market fund or guaranteed investment contract, giving up the possibility of major gains, but virtually assuring the safety of your principal
 - Invest in a 50-50 mix of bond funds and stock funds, in hopes of getting some growth, but also giving yourself some protection in the form of steady income
 - Invest in aggressive growth mutual funds whose value will probably fluctuate significantly during the year, but have the potential for impressive gains over five or 10 years
5. You just won a big prize! But which one? It's up to you.
- \$2,000 in cash
 - A 50% chance to win \$5,000
 - A 20% chance to win \$15,000
6. A good investment opportunity just came along. But you have to borrow money to get in. Would you take out a loan?
- Definitely not
 - Perhaps
 - Yes
7. Your company is selling stock to its employees. In three years, management plans to take the company public. Until then, you won't be able to sell your shares and you will get no dividends. But your investment could multiply as much as 10 times when the company goes public. How much money would you invest?
- None
 - Two months' salary
 - Four months' salary

SCORING YOUR RISK TOLERANCE

To score the quiz, add up the number of answers you gave in each category a-c; then multiply as shown to find your score.

- (a) answers _____ \times 1 = _____ points
 (b) answers _____ \times 2 = _____ points
 (c) answers _____ \times 3 = _____ points

YOUR SCORE _____ points

If you scored . . . You may be a:

- 9–14 points Conservative investor
 15–21 points Moderate investor
 22–27 points Aggressive investor

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The return requirement and risk tolerance across mutual funds are highly variable because funds segment the investor market. Various funds appeal to distinct investor groups and will adopt a return requirement and risk tolerance that fit a particular market niche. For example, "income" funds cater to the conservative investor, while "high-growth" funds seek out the more risk-tolerant ones. Tax-free bond funds segment the market by tax bracket.

A mutual fund's objectives are spelled out in its prospectus. We discussed mutual funds in detail in Chapter 4.

PENSION FUNDS There are two basic types of pension plans: *defined contribution* and *defined benefit*. Defined contribution plans are in effect savings accounts established by the firm for its employees. The employer contributes funds to the plan, but the employee bears all the risk of the fund's investment performance. These plans are called defined contribution because the firm's only obligation is to make the stipulated contributions to the employee's retirement account. The employee is responsible for directing the management of the assets, usually by selecting among several investment funds in which the assets can be placed. Investment earnings in these retirement plans are not taxed until the funds are withdrawn, usually after retirement. These plans are discussed in Chapter 21.

In defined benefit plans, by contrast, the employer has an obligation to provide a specified annual retirement benefit. That benefit is defined by a formula that typically takes into account years of service and the level of salary or wages. For example, the employer may pay the retired employee a yearly amount equal to 2% of the employee's final annual salary for

On the MARKET FRONT

TIME FOR INVESTING'S FOUR-LETTER WORD

What four-letter word should pop into mind when the stock market takes a harrowing nose dive?

No, not those. R-I-S-K.

Risk is the potential for realizing low returns or even losing money, possibly preventing you from meeting important objectives, like sending your kids to the college of their choice or having the retirement lifestyle you crave.

Assessing your risk tolerance, however, can be tricky. You must consider not only how much risk you can *afford* to take but also how much risk you can *stand* to take. Determining how much risk you can stand—your temperamental tolerance for risk—is more difficult. It isn't quantifiable.

To that end, many financial advisers, brokerage firms, and mutual fund companies have created risk quizzes to help people determine whether they are conservative, moderate, or aggressive investors. Some firms that offer such quizzes include Merrill Lynch; T. Rowe Price Associates Inc., Baltimore; Zurich Group Inc.'s Scudder Kemper Investments Inc., New York; and Vanguard Group in Malvern, Pa.

Typically, risk questionnaires include 7 to 10 questions about a person's investing experience, financial security, and tendency to make risky or conservative choices.

The benefit of the questionnaires is that they are an objective resource people can use to get at least a rough idea of their risk tolerance. "It's impossible for someone to assess their risk tolerance alone," says Mr. Bernstein. "I may say I don't like risk, yet will take more risk than the average person."

Many experts warn, however, that the questionnaires should be used simply as a first step to assessing risk tolerance. The second

step, many experts agree, is to ask yourself some difficult questions, such as: How much can you stand to lose over the long term?

"Most people can stand to lose a heck of a lot temporarily," says Mr. Schatsky. The real acid test, he says, is how much of your portfolio's value you can stand to lose over months or years.

As it turns out, most people rank as middle-of-the-road risk-takers, say several advisers. "Only about 10% to 15% of my clients are aggressive," says Mr. Roge.

WHAT'S YOUR RISK TOLERANCE?

Circle the letter that corresponds to your answer.

1. Just 60 days after you put money into an investment, its price falls 20%. Assuming none of the fundamentals have changed, what would you do?
 - a. Sell to avoid further worry and try something else.
 - b. Do nothing and wait for the investment to come back.
 - c. Buy more. It was a good investment before; now it's a cheap investment, too.
2. Now look at the previous question another way. Your investment fell 20%, but it's part of a portfolio being used to meet investment goals with three different time horizons.
 - 2A. What would you do if the goal were five years away?
 - a. Sell
 - b. Do nothing
 - c. Buy more
 - 2B. What would you do if the goal were 15 years away?
 - a. Sell
 - b. Do nothing
 - c. Buy more

Professional Investors

Professional investors provide investment management services for a fee. Some are employed directly by wealthy individual investors. Most professional investors, however, either pool the funds of many individual investors and manage them or serve institutional investors.

personal trust

An interest in an asset held by a trustee for the benefit of another person.

PERSONAL TRUSTS A **personal trust** is established when an individual confers legal title to property to another person or institution, which then manages that property for one or more beneficiaries. The holder of the title is called the *trustee*. The trustee is usually a bank, a lawyer, or an investment professional. Investment of a trust is subject to state trust laws and *prudent investor rules* that limit the types of allowable trust investment.

The objectives of personal trusts normally are more limited in scope than those of the individual investor. Because of their fiduciary responsibility, personal trust managers typically are expected to invest with more risk aversion than individual investors. Certain asset classes, such as options and futures contracts, for example, and some strategies, such as short-selling or buying on margin, are ruled out. Short sales and margin purchases were discussed in Chapter 3.

mutual fund

A firm pooling and managing funds of investors.

MUTUAL FUNDS **Mutual funds** are firms that manage pools of individual investor money. They invest in accordance with their objectives and issue shares that entitle investors to a pro rata portion of the income generated by the funds.

On the MARKET FRONT

HOW TO BECOME A CHARTERED FINANCIAL ANALYST

The CFA Institute is a nonprofit international organization with a mission of serving investors by educating investment professionals and setting high standards for ethical practice. The Institute also has established a *Code of Ethics and Standards of Professional Conduct* that lays out guidelines of practice for investment professionals.

The CFA Institute was established in January 1990 through the combination of the previously existing Financial Analysts Federation and the Institute of Chartered Financial Analysts. The CFA Institute administers the program through which an investment professional can be designated as a Chartered Financial Analyst (CFA). This designation has become a progressively more important requirement for a career in institutional money management. About 125,000 investment professionals were members of the CFA Institute in 2015, and the Institute was affiliated with 144 professional societies in 69 countries.

To become a CFA, you must pass a series of three annual examinations that demonstrate knowledge of:

- Valuation principles for fixed-income, equity, and derivative securities.
- Financial statement analysis and corporate finance.
- Industry and company analysis.
- Microeconomic and macroeconomic theory.
- Quantitative methods.
- Principles of portfolio construction and management.
- Capital market theory.
- Financial markets and instruments.
- The CFA Institute Code of Ethics and Standards of Professional Conduct.

Beyond these exams, the candidate must have four years of work experience in money management and must join the CFA Institute and apply for membership in a local CFA member society.

For more information, you can visit the CFA Institute website at www.cfainstitute.org.

level of risk that can be tolerated in the pursuit of higher expected return. Investors also must deal with various constraints on their portfolio choice that derive from considerations such as liquidity needs, regulations, or tax concerns. The second column of Table 22.3 lists the more important constraints.

In the next sections, we explore some of these objectives and constraints.

22.2 INVESTOR OBJECTIVES

Individual Investors

The basic factors affecting an individual investor's objectives usually arise from that investor's stage in the life cycle. The first significant investment decision for most individuals concerns education, which is an investment in "human capital." The major asset most people have during their early working years is the earning power derived from their skills. For these people, the financial risk due to illness or injury is far greater than that associated with the rate of return on their portfolios of financial assets. At this point in the life cycle, the most important financial decisions concern insurance against the possibility of disability or death.

As one ages and accumulates savings to provide for consumption during retirement, the composition of wealth shifts from human capital toward financial capital. At this point, portfolio choices become progressively more important. In middle age, most investors will be willing to take on a meaningful amount of portfolio risk to increase their expected rates of return. As retirement draws near, however, risk tolerance seems to diminish.

Questionnaire results confirm that attitudes shift away from risk tolerance and toward risk aversion as investors near retirement age. (See the questionnaire in the nearby box.) With age, individuals lose the potential to recover from a disastrous investment performance. When they are young, investors can respond to a loss by working harder and saving more of their income. But as retirement approaches, investors realize there will be less time to recover, hence the shift to safe assets.

The task of life-cycle financial planning is formidable for most people. It is not surprising that a whole industry has sprung up to provide personal financial advice.

TABLE 22.1 Components of the investment management process

- I. Planning
 - A. Identifying and specifying the investor's objectives and constraints
 - B. Creating the *investment policy statement* [See Table 22.2]
 - C. Forming capital market expectations
 - D. Creating the strategic asset allocation (Target minimum and maximum class weights)
- II. Execution: Portfolio construction and revision
 - A. Asset allocation (including tactical) and portfolio optimization (combining assets to meet risk and return objectives)
 - B. Security selection
 - C. Implementation and execution
- III. Feedback
 - A. Monitoring (investor, economic, and market input factors)
 - B. Rebalancing
 - C. Performance evaluation

Source: John L. Maginn, Donald L. Tuttle, Dennis W. McLeavey, and Jerald E. Pinto, "The Portfolio Management Process and the Investment Policy Statement," in *Managing Investment Portfolios: A Dynamic Process*, 3rd ed. (CFA Institute, 2007) and correspondence with Tom Robinson, head of educational content.

TABLE 22.2 Components of the investment policy statement (IPS)

1. Brief client description
2. Purpose of establishing policies and guidelines
3. Duties and investment responsibilities of parties involved
4. Statement of investment goals, objectives, and constraints
5. Schedule for review of investment performance and the IPS
6. Performance measures and benchmarks
7. Any considerations in developing strategic asset allocation
8. Investment strategies and investment styles
9. Guidelines for rebalancing

TABLE 22.3 Determination of portfolio policies

Objectives	Constraints
Return requirements	Liquidity
Risk tolerance	Horizon
	Regulations
	Taxes
	Unique needs, such as:
	Ethical concerns
	Specific hedging needs
	Age
	Wealth

The result of this analysis can be summarized in an *investment policy statement* (IPS) addressing the topics specified in Table 22.2. In the next sections we elaborate on the steps leading to an IPS. We start with the planning phase, the top panel of Table 22.1.

Table 22.1 indicates that the management planning process starts off by analyzing one's investment clients—in particular, by considering the objectives and constraints that govern their decisions. Portfolio objectives center on the risk-return trade-off between the expected return the investors need (return requirements in the first column of Table 22.3) and how much risk they are willing to assume (risk tolerance). Investment managers must know the

box describes how to become a CFA charterholder.) Dozens of countries have adopted the CFA Institute's Global Investment Performance Standards. The CFA curriculum thus influences the training of the highest-level and most respected investment managers around the world. Throughout its history, the CFA Institute has maintained rigorous standards, and its curriculum has evolved over the years to keep up with developments in both financial theory and practice.

The CFA Institute has created a framework to help professionals develop and explain financial policy to individual and institutional

clients. This chapter presents the CFA Institute's approach. As you read about it, concentrate on the methodology underlying its design of the investment process.

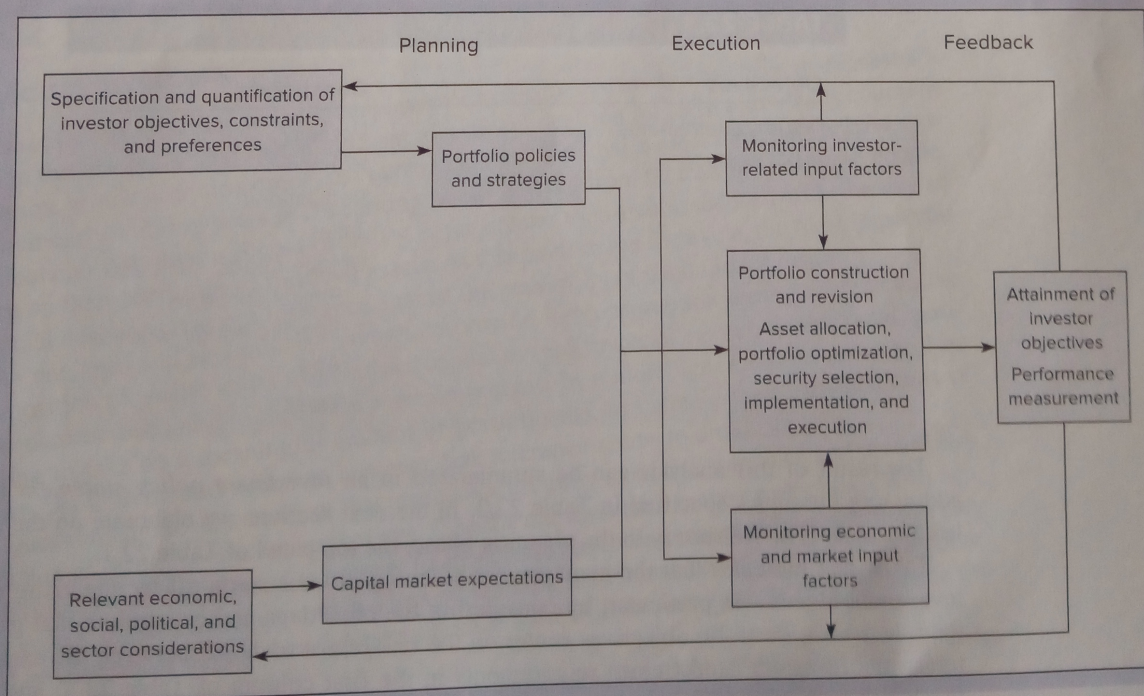
The basic framework divides the investment process into four stages: specifying objectives, specifying constraints, formulating policy, and monitoring and updating the portfolio. We start with a description of major types of investors, both individual and institutional, as well as their special objectives. We turn next to the constraints or circumstances peculiar to each investor class and consider some of the investment policies that each can choose.

22.1 THE INVESTMENT MANAGEMENT PROCESS

The CFA Institute divides the process of investment management into elements that constitute a dynamic feedback loop: planning, execution, and feedback. Figure 22.1 and Table 22.1 describe the steps in that process. *Planning* is focused largely on establishing the inputs necessary for decision making. These include data about the client as well as the capital market, leading to broad policy guidelines (strategic asset allocation). *Execution* fleshes out the details of optimal asset allocation and security selection. Finally, *feedback* is the process of adapting to changes in expectations and objectives as well as to changes in portfolio composition that result from changes in market prices.

CFA Institute investment management process

FIGURE 22.1



Investors and the Investment Process

Learning Objectives

- LO 22-1 Specify investment objectives of individual and institutional investors.
- LO 22-2 Identify constraints on individual and institutional investors.
- LO 22-3 Develop investment policy statements consistent with a client's objectives and constraints.

Translating the aspirations and circumstances of diverse households into appropriate investment decisions is a daunting task. A novice financial consultant often asks: "How do you engage members of a household in financial planning when they do not know what standard deviation is, never studied Economics 101, and have little, if any, quantitative background?" Finance advisers spend most of their time in the trenches doing just that.

The task is equally difficult for institutions, most of which have many stakeholders and often are regulated by various authorities. The investment process is not easily reduced to a simple or mechanical algorithm.

While many principles of investments are quite general and apply to virtually all investors, some issues are peculiar to the specific investor. Tax bracket, age, risk tolerance, wealth, job prospects, and uncertainties make each

investor's circumstances somewhat unique. In this chapter we focus on the process by which investors systematically review their particular objectives, constraints, and circumstances. Along the way, we survey some of the major classes of institutional investors and examine the special issues they must confront.

There is no unique "correct" investment process, but some approaches are better than others. It can be helpful to take one high-quality approach as a useful case study. For this reason, we examine the systematic approach suggested by the CFA Institute. The CFA Institute is one of the most important professional organizations for finance practitioners. It confers the Chartered Financial Analyst designation on those who meet its requirements, which include both work experience and a set of three exams. There are currently around 125,000 CFA charterholders employed in about 150 countries. (The nearby