
CORPORATE FINANCE

Study Sessions 10 & 11

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| Weight on Exam | 7% |
| SchweserNotes™ Reference | Book 4, Pages 1–111 |

For only 7% of the total exam, there is a lot of material to cover. Don't become too immersed in detail.

STUDY SESSION 10: CORPORATE FINANCE—CORPORATE GOVERNANCE, CAPITAL BUDGETING, AND COST OF CAPITAL

CORPORATE GOVERNANCE AND ESG: AN INTRODUCTION

Cross-Reference to CFA Institute Assigned Reading #34

Corporate governance refers to the internal controls and procedures for managing companies.

Under **shareholder theory**, the primary focus of a system of corporate governance is the interests of the firm's shareholders, which are taken to be the maximization of the market value of the firm's common equity. Under **stakeholder theory**, the focus is broader, considering conflicts among groups such as shareholders, employees, suppliers, and customers.

Stakeholder Groups

- *Shareholders* have an interest in the ongoing profitability and growth of the firm, both of which can increase the value of their ownership shares.
- The *board of directors* has a responsibility to protect the interests of shareholders.
- *Senior managers* have interests that include continued employment and maximizing the total value of their compensation.
- *Employees* have an interest in their rate of pay, opportunities for career advancement, training, and working conditions.
- *Creditors* supply debt capital to the firm. The interests of creditors are protected to varying degrees by covenants in the firm's debt agreements.
- *Suppliers* have an interest preserving an ongoing relationship with the firm, in the profitability of their trade with the firm, and in the growth and ongoing stability of the firm. As they are typically short-term creditors, they also have an interest in the firm's solvency.

Potential Conflicts Among Stakeholder Groups

The **principal-agent conflict** arises because an agent is hired to act in the interest of the principal, but an agent's interests may not coincide exactly with those of the principal. In the context of a corporation, shareholders are the principals (owners), and firm management and board members (directors) are their agents.

Managers and directors may choose a lower level of business risk than shareholders would. This conflict can arise because the risk of company managers and directors is more dependent on firm performance than the risk of shareholders because shareholders may hold diversified portfolios of stocks and are not dependent on the firm for employment.

There is an **information asymmetry** between shareholders and managers because managers have more information about the functioning of the firm and its strategic direction than shareholders do. This decreases the ability of shareholders or non-executive directors to monitor and evaluate whether managers are acting in the best interests of shareholders.

Conflicts between groups of shareholders. A single shareholder or group of shareholders may hold a majority of the votes and act against the interests of the minority shareholders. Some firms have different classes of common stock outstanding, some with more voting power than others. A group of shareholders may have effective control of the company although they have a claim to less than 50% of the earnings and assets of the company.

In an acquisition of the company, controlling shareholders may be in a position to get better terms for themselves relative to minority shareholders. Majority shareholders may cause the company to enter into **related-party transactions** that benefit entities in which they have a financial interest, to the detriment of minority shareholders.

Conflicts between creditors and shareholders. Shareholders may prefer more business risk than creditors do because creditors have a limited upside from good results compared to shareholders. Equity owners could also act against the interests of creditors by issuing new debt that increases the default risk faced by existing debt holders or by the company paying greater dividends to equity holders, thereby increasing creditors' risk of default.

Conflicts between shareholders and other stakeholders. The company may decide to raise prices or reduce product quality to increase profits, to the detriment of customers. The company may employ strategies that significantly reduce the taxes they pay to the government.

Managing Stakeholder Relationships

Management of company relations with stakeholders is based on having a good understanding of stakeholder interests and maintaining effective communication with stakeholders. Managing stakeholder relationships is based on four types of infrastructures:

1. **Legal infrastructure** identifies the laws relevant to and the legal recourse of stakeholders when their rights are violated.
2. **Contractual infrastructure** refers to the contracts between the company and its stakeholders that spell out the rights and responsibilities of the company and the stakeholders.
3. **Organizational infrastructure** refers to a company's corporate governance procedures, including its internal systems and practices that address how it manages its stakeholder relationships.
4. **Governmental infrastructure** comprises the regulations to which companies are subject.

Shareholder Meetings

Corporations typically hold an **annual general meeting** after the end of the firm's fiscal year. A shareholder who does not attend the annual general meeting can vote her shares by **proxy**. A proxy may specify the shareholder's vote on specific issues or leave the vote to the discretion of the person to whom the proxy is assigned.

Ordinary resolutions, such as approval of auditor and the election of directors, require a simple majority of the votes cast. Other resolutions, such as those regarding a merger or takeover, or that require amendment of corporate bylaws, are termed **special resolutions** and may require a supermajority vote for passage, typically two-thirds or three-fourths of the votes cast. Such special resolutions can also be addressed at an **extraordinary general meeting**, which can be called anytime there is a resolution about a matter that requires a vote of the shareholders.

With **majority voting**, the candidate with the most votes for each single board position is elected. With **cumulative voting**, shareholders can cast all their votes (shares times the number of board position elections) for a single board candidate or divide them among board candidates. Cumulative voting can result in greater minority shareholder representation on the board compared to majority voting.

Boards of Directors

In a **one-tier board structure**, a single board of directors includes both internal and external directors. **Internal directors** (also called **executive directors**) are typically senior managers of the firm. **External directors** (also called **non-executive directors**) are those who are not company management.

In a **two-tier board structure**, there is a **supervisory board** that typically excludes executive directors. The supervisory board and the **management board** (made up of executive directors) operate independently. The management board is typically led by the company's CEO.

Non-executive directors who have no other relationship with the company are termed **independent directors**. Employee board representatives may be a significant portion of the non-executive directors. When a **lead independent director** is appointed, he has the ability to call meetings of the independent directors, separate from meetings of the full board.

Currently, the general practice is for all board member elections to be held at the same meeting and each election to be for multiple years. With a **staggered board**, elections for some board positions are held each year. This structure limits the ability of shareholders to replace board members in any one year and is used less now than it has been historically.

The board of directors is not involved in the day-to-day management of the company. The duties of the board include responsibility for:

- Selecting senior management, setting their compensation and bonus structure, evaluating their performance, and replacing them as needed.
- Setting the strategic direction for the company and making sure that management implements the strategy approved by the board.
- Approving capital structure changes, significant acquisitions, and large investment expenditures.
- Reviewing company performance and implementing any necessary corrective steps.
- Planning for continuity of management and the succession of the CEO and other senior managers.
- Establishing, monitoring, and overseeing the firm's internal controls and risk management system.
- Ensuring the quality of the firm's financial reporting and internal audit, as well as oversight of the external auditors.

A board of directors typically has committees made up of board members with particular expertise. These committees report to the board, which retains the overall responsibility for the various board functions. The following are examples of typical board committees.

An **audit committee** oversees the financial reporting function and the implementation of accounting policies, monitors the effectiveness of the company's internal controls and internal audit function, recommends an external auditor, and proposes remedies based on its review of internal and external audits.

A **governance committee** is responsible for overseeing the company's corporate governance code, implementing the company's code of ethics, and monitoring changes in laws and regulations and ensuring that the company is in compliance.

A **nominations committee** proposes qualified candidates for election to the board, manages the search process, and attempts to align the board's composition with the company's corporate governance policies.

A **compensation committee** or **remuneration committee** recommends to the board the amounts and types of compensation to be paid to directors and senior managers. This committee may also be responsible for oversight of employee benefit plans and evaluation of senior managers.

A **risk committee** informs the board about appropriate risk policy and risk tolerance of the organization and oversees its risk management processes. An **investment committee** reviews management proposals for large acquisitions or projects, sale or other disposal of company assets or segments, and the performance of acquired assets and other large capital expenditures. Some companies combine these two functions into one committee.

Factors Affecting Stakeholder Relationships

Activist shareholders pressure companies for changes they believe will increase shareholder value. They may seek representation on the board of directors, propose shareholder resolutions, or initiate shareholder lawsuits.

A group may initiate a **proxy fight**, in which the group seeks the proxies of shareholders to vote in favor of its alternative proposals and policies. An activist group may make a **tender offer** for a specific number of shares of a company to gain enough votes to take over the company.

Senior managers and boards of directors can be replaced by shareholders. The threat of a **hostile takeover** can act as an incentive to influence company managements and boards to pursue policies oriented toward increasing shareholder value. Conflicts of interest arise from anti-takeover measures that serve to protect managers' and directors' jobs. Staggered board elections make a hostile takeover more costly and difficult.

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The legal environment within which a company operates can affect stakeholder relationships. Shareholders' and creditors' interests are considered to be better protected in countries with a **common law system** under which judges' rulings become law in some instances. In a **civil law system**, judges are bound to rule based only on specifically enacted laws. In general, the rights of creditors are more clearly defined than those of shareholders and, therefore, are not as difficult to enforce through the courts.

Media exposure can act as an important incentive for management to pursue policies that are consistent with the interests of shareholders. Overall, an increased focus on the importance of good corporate governance has given rise to a new industry focused on corporate governance, which includes firms that advise funds on proxy voting and corporate governance matters.

Risks of Poor Governance

When corporate governance is weak, the control functions of audits and board oversight may be weak as well. The risk is that some stakeholders can gain an advantage, to the disadvantage of other stakeholders. Accounting fraud, or simply poor recordkeeping, will have negative implications for company performance and value.

Without proper monitoring and oversight, management may have incentive compensation that causes it to pursue its own benefit rather than the company's benefit. If management is allowed to engage in related-party transactions that benefit friends or family, this will decrease company value.

Poor compliance procedures with respect to regulation and reporting can easily lead to legal and reputational risks. Violating stakeholder rights can lead to stakeholder lawsuits. A company's reputation can be damaged by failure to comply with governmental regulations. Failure to manage creditors' rights can lead to debt default and bankruptcy.

Benefits of Effective Governance

Effective governance implies effective control and monitoring. A strong system of controls and compliance with laws and regulations can avoid many legal and regulatory risks.

Formal policies regarding conflicts of interest and related-party transactions can also lead to better operating results. Alignment of management interests with those of shareholders leads to better financial performance and greater company value.

Analysis of Corporate Governance

In analyzing corporate governance, analysts focus on ownership and voting structures, board composition, management remuneration, the composition of shareholders, strength of shareholder rights, and management of long-term risks.

In a **dual class structure**, one class of shares may be entitled to several votes per share, while another class of shares is entitled to one vote per share. Analysts consider what the interests of the controlling shareholders are and how the ownership of the controlling shares is expected to change over time. Companies with a dual-class share structure have traded, on average, at a discount to comparable companies with a single class of shares.

With respect to remuneration, analysts may be concerned if:

- The remuneration plan offers greater incentives to achieve short-term performance goals at the expense of building long-term company value.
- Incentive pay is fairly stable over time, which may indicate that targets are easy to achieve.
- Management remuneration is high relative to that of comparable companies.
- Management incentives are not aligned with current company strategy and objectives.

If a significant portion of a company's outstanding shares are held by an affiliated company and the shareholder company tends to vote with management and support board members with long tenure, it can hinder change by protecting the company from potential hostile takeovers and activist shareholders.

Examples of weak shareholders' rights are anti-takeover provisions in the corporate charter or bylaws, staggered boards, or a class of super voting shares.

Environmental, Social, and Governance (ESG) Investment Considerations

The use of environmental, social, and governance factors in making investment decisions is referred to as **ESG integration** or ESG investing. ESG integration is also termed **sustainable investing** or **responsible investing** and sometimes **socially responsible investing**, although that term has previously referred to investing that integrates ethical or moral concerns into the portfolio selection process.

The most frequently used method of integrating ESG concerns into portfolio construction is **negative screening**, in which certain companies and certain sectors are excluded from portfolios.

In **positive screening**, no specific sectors are excluded from portfolios, but investors attempt to identify the companies with best practices across ESG matters.

Impact investing refers to investing to promote specific social or environmental goals. This can be an investment in a specific company or project. Investors seek to make a profit while, at the same time, having a positive impact on society or the environment.

Thematic investing refers to investing based on a single goal, such as the development of alternative energy sources or clean water resources.

CAPITAL BUDGETING

Cross-Reference to CFA Institute Assigned Reading #35

Capital budgeting is identifying and evaluating projects for which the cash flows extend over a period longer than a year. The process has four steps:

1. Generating ideas.
2. Analyzing project proposals.
3. Creating the firm's capital budget.
4. Monitoring decisions and conducting a post-audit.

Categories of capital budgeting projects include:

- Replacement projects to maintain the business.
- Replacement projects to reduce costs.
- Expansion projects to increase capacity.
- New product or market development.
- Mandatory projects, such as meeting safety or environmental regulations.
- Other projects, including high-risk research and development or management pet projects, are not easily analyzed through the capital budgeting process.

Five Key Principles of Capital Budgeting

1. Decisions are based on *incremental cash flows*. Sunk costs are not considered. Externalities, including *cannibalization* of sales of the firm's current products, should be included in the analysis.
2. Cash flows are based on *opportunity costs*, which are the cash flows the firm will lose by undertaking the project.
3. *Timing* of the cash flows is important.

4. Cash flows are analyzed on an *after-tax basis*.
5. *Financing costs* are reflected in the required rate of return on the project, *not* in the incremental cash flows.

Projects can be *independent* and evaluated separately, or *mutually exclusive*, which means the projects compete with each other and the firm can accept only one of them. In some cases, *project sequencing* requires projects to be undertaken in a certain order, with the accept/reject decision on the second project depending on the profitability of the first project.

A firm with *unlimited funds* can accept all profitable projects. However, when *capital rationing* is necessary, the firm must select the most valuable group of projects that can be funded with the limited capital resources available.

Capital Budgeting Methods

The *payback period* is the number of years it takes to recover the initial cost of the project. You must be given a maximum acceptable payback period for a project. This criterion ignores the time value of money and any cash flows beyond the payback period.

The *discounted payback period* is the number of years it takes to recover the initial investment in present value terms. The discount rate used is the project's cost of capital. This method incorporates the time value of money but ignores any cash flows beyond the discounted payback period.

The *profitability index* is the present value of a project's future cash flows divided by the initial cash outlay. The decision rule is to accept a project if its profitability index is greater than one, which is the same as the $IRR > \text{cost of capital}$ rule and the $NPV > 0$ rule (since $PI = 1 + NPV/\text{Initial Outlay}$).

Net present value for a normal project is the present value of all the expected future cash flows minus the initial cost of the project, using the project's cost of capital. A project that has a positive net present value should be accepted because it is expected to increase the value of the firm (shareholder wealth).

The *internal rate of return* is the discount rate that makes the present value of the expected future cash flows equal to the initial cost of the project. If the IRR is greater than the project's cost of capital, it should be accepted because it is expected to increase firm value. If the IRR is equal to the project's cost of capital, the NPV is zero.

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For an independent project, the criteria for acceptance (NPV > 0 and IRR > project cost of capital) are equivalent and always lead to the same decision.

For mutually exclusive projects, the NPV and IRR decision rules can lead to different rankings because of differences in project size and/or differences in the timing of cash flows. The NPV criterion is theoretically preferred, as it directly estimates the effect of project acceptance on firm value.

Be certain you can calculate all of these measures quickly and accurately with your calculator.

Since inflation is reflected in the WACC (or project cost of capital) calculation, future cash flows must be adjusted upward to reflect positive expected inflation, or some wealth-increasing (positive NPV) projects will be rejected.

Larger firms, public companies, and firms where management has a higher level of education tend to use NPV and IRR analysis. Private companies and European firms tend to rely more on the payback period in capital budgeting decisions.

In theory, a positive NPV project should increase the company's stock price by the project's NPV per share. In reality, stock prices reflect investor expectations about a firm's ability to identify and execute positive NPV projects in the future.

COST OF CAPITAL

Cross-Reference to CFA Institute Assigned Reading #36

Knowing how to calculate the *weighted average cost of capital* (WACC) and all of its components is critical.

$$\text{WACC} = (w_d)[k_d(1 - t)] + (w_{ps})(k_{ps}) + (w_{ce})(k_{cd})$$

Here, the *ws* are the proportions of each type of capital, the *ks* are the current costs of each type of capital (debt, preferred stock, and common stock), and *t* is the firm's *marginal tax rate*.

The proportions used for the three types of capital are target proportions and are calculated using market values. An analyst can use the WACC to compare the after-tax cost of raising capital to the expected after-tax returns on capital investments.

Cost of equity capital. There are three methods. You will likely know which to use by the information given in the problem.

1. CAPM approach: $k_{ce} = RFR + \beta(R_{market} - RFR)$.
2. Discounted cash flow approach: $k_{ce} = (D_1 / P_0) + g$.
3. Bond yield plus risk premium approach: $k_{ce} = \text{current market yield on the firm's long-term debt} + \text{risk premium}$.

Cost of preferred stock is always calculated as follows:

$$k_{ps} = \frac{D_{ps}}{P}$$

Cost of debt is the average market yield on the firm's outstanding debt issues. Since interest is tax deductible, k_d is multiplied by $(1 - t)$.

Firm decisions about which projects to undertake are independent of the decision of how to finance firm assets at minimum cost. The firm will have long-run target weights for the percentages of common equity, preferred stock, and debt used to fund the firm. Investment decisions are based on a WACC that reflects each source of capital at its target weight, regardless of how a particular project will be financed or which capital source was most recently employed.

An analyst calculating a firm's WACC should use the firm's target capital structure if known, or use the firm's current capital structure based on market values as the best indicator of its target capital structure. The analyst can incorporate trends in the company's capital structure into his estimate of the target structure. An alternative would be to apply the industry average capital structure to the firm.

A firm's WACC can increase as it raises larger amounts of capital, which means the firm has an upward sloping *marginal cost of capital curve*. If the firm ranks its potential projects in descending IRR order, the result is a downward sloping *investment opportunity schedule*. The amount of the capital investment required to fund all projects for which the IRR is greater than the marginal cost of capital is the firm's *optimal capital budget*.

A **project beta** can be used to determine the appropriate cost of equity capital for evaluating a project. Using the "pure-play method," the project beta is estimated based on the equity beta of a firm purely engaged in the same business as the project. The pure-play firm's beta must be adjusted for any difference between the

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capital structure (leverage) of the pure-play firm and the capital structure of the company evaluating the project.

For a developing market, the **country risk premium** (CRP) is calculated as:

$$\text{CRP} = [\text{sovereign bond yield} - \text{T-bond yield}] \times \left(\frac{\text{std. dev. of developing country index}}{\text{std. dev. of sovereign bonds in U.S. currency}} \right)$$

The required return on equity securities is then:

$$k_{CE} = RFR + \beta [E(R_{MKT}) - RFR + CRP]$$

A **break-point** refers to a level of total investment beyond which the WACC increases because the cost of one component of the capital structure increases. It is calculated by dividing the amount of funding at which the component cost of capital increases by the target capital structure weight for that source of capital.

When new equity is issued, the **flotation costs** (underwriting costs) should be included as an addition to the initial outlay for the project when calculating NPV or IRR.

STUDY SESSION II: CORPORATE FINANCE—LEVERAGE, DIVIDENDS AND SHARE REPURCHASES, AND WORKING CAPITAL MANAGEMENT

MEASURES OF LEVERAGE

Cross-Reference to CFA Institute Assigned Reading #37

Business Risk vs. Financial Risk

Business risk refers to the risk associated with a firm's operating income and is the result of:

- Sales risk (variability of demand).
- Operating risk (proportion of total costs that are fixed costs).

Financial risk. Additional risk common stockholders have to bear because the firm uses fixed cost sources of financing.

Degree of operating leverage (DOL) is defined as:

$$DOL = \frac{\% \text{ change in EBIT}}{\% \text{ change in sales}}$$

The DOL at a particular level of sales, Q, is calculated as:

$$\begin{aligned} DOL &= \frac{Q(P - V)}{Q(P - V) - F} \\ &= \frac{S - TVC}{S - TVC - F} \end{aligned}$$

One way to help remember this formula is to know that if fixed costs are zero, there is no operating leverage (i.e., DOL = 1).

Degree of financial leverage (DFL) is defined as:

$$DFL = \frac{\% \text{ change in EPS}}{\% \text{ change in EBIT}}$$

The DFL at a particular level of sales is calculated as:

$$DFL = \frac{EBIT}{EBIT - \text{interest expense}}$$

One way to help remember this formula is to know that if interest costs are zero (no fixed-cost financing), there is no financial leverage (i.e., DFL = 1). In this context, we treat preferred dividends as interest.

Degree of total leverage (DTL) is the product of DOL and DFL:

$$DTL = DOL \times DFL$$

$$= \frac{\% \text{ change in EBIT}}{\% \text{ change in sales}} \times \frac{\% \text{ change in EPS}}{\% \text{ change in EBIT}} = \frac{\% \text{ change in EPS}}{\% \text{ change in sales}}$$

$$= \frac{Q(P - V)}{Q(P - V) - F - I} = \frac{S - TVC}{S - TVC - F - I}$$

Breakeven Quantity of Sales

A firm's *break-even point* is the quantity of sales a firm must achieve to just cover its fixed and variable costs. The break-even quantity is calculated as:

$$Q_{BE} = \frac{\text{total fixed costs}}{\text{price} - \text{variable cost per unit}}$$

The *operating break-even quantity* considers only fixed operating costs:

$$Q_{OBE} = \frac{\text{fixed operating costs}}{\text{price} - \text{variable cost per unit}}$$

Effects of Operating Leverage and Financial Leverage

A firm with greater operating leverage (greater fixed costs) will have a higher break-even quantity than an identical firm with less operating leverage. If sales are greater than the break-even quantity, the firm with greater operating leverage will generate larger profit.

Financial leverage reduces net income by the interest cost, but increases return on equity because the (reduced) net income is generated with less equity (and more debt). A firm with greater financial leverage will have a greater risk of default, but will also offer greater potential returns for its stockholders.

DIVIDENDS AND SHARE REPURCHASES: BASICS

Cross-Reference to CFA Institute Assigned Reading #38

Cash dividends transfer cash from the firm to its shareholders. This reduces the company's assets and the market value of its equity. When the dividend is paid, the stock price should drop by the amount of the per share dividend. Therefore, the dividend does not change the shareholder's wealth.

Types of cash dividends:

- *Regular dividend.* A company pays out a portion of its earnings on a schedule.
- *Special dividend.* One-time cash payment to shareholders.
- *Liquidating dividend.* A company goes out of business and distributes the proceeds to shareholders. These are taxed as a return of capital.

Dividend Payment Chronology

- *Declaration date:* board of directors approves the dividend payment.
- *Ex-dividend date:* first day the stock trades without the dividend (two business days before the record date).
- *Holder-of-record date:* date on which shareholders must own the shares in order to receive the dividend.
- *Payment date:* dividend is paid by check or electronic transfer.

Stock Dividends, Stock Splits, and Reverse Stock Splits

These actions change the number of shares outstanding, but the share price changes proportionately, so a shareholder's wealth and ownership stake are not affected.

- *Stock dividend.* Shareholders receive additional shares of stock (e.g., 10% more shares).
- *Stock split.* Each "old" share is replaced by more than one "new" share (e.g., 3:2 or 2:1).
- *Reverse stock split.* Replace "old" shares with a smaller number of "new" shares.

Share Repurchases

A company can buy back shares of its common stock. Since this uses the company's cash, it can be seen as an alternative to a cash dividend. Taxes aside, neither cash dividends nor share repurchases affect the shareholder's wealth.

Three repurchase methods:

1. Buy in the open market.
2. Make a tender offer for a fixed number of shares at a fixed price.

3. Directly negotiate with a large shareholder.

If a firm borrows funds to repurchase its shares, EPS will rise if the after-tax cost of debt is less than the earnings yield (E/P) of its shares.

For a firm that repurchases its shares with retained earnings, the book value of its shares will increase if the price paid for repurchased shares is less than their book value.

WORKING CAPITAL MANAGEMENT

Cross-Reference to CFA Institute Assigned Reading #39

Primary sources of liquidity are a company's normal sources of short-term cash, such as selling goods and services, collecting receivables, or using trade credit and short-term borrowing. **Secondary sources of liquidity** are the measures a company must take to generate cash when its primary sources are inadequate, such as liquidating assets, renegotiating debt, or filing for bankruptcy.

Drags and pulls on liquidity include uncollectable receivables or debts, obsolete inventory, tight short-term credit, and poor payables management.

Liquidity measures include:

- Current ratio.
- Quick ratio.
- Cash ratio.

Measures of working capital effectiveness include:

- Receivables turnover, number of days receivables.
- Inventory turnover, number of days of inventory.
- Payables turnover, number of days of payables.
- Operating cycle, cash conversion cycle.

$$\text{operating cycle} = \text{days of inventory} + \text{days of receivables}$$

$$\text{cash conversion cycle} = \text{days of inventory} + \text{days of receivables} - \text{days of payables}$$

Managing a Company's Net Daily Cash Position

The purpose of managing a firm's daily cash position is to make sure there is sufficient cash (target balance) but to not keep excess cash balances because of the interest foregone by not investing the cash in short-term securities to earn interest. These short-term securities include:

- U.S. Treasury bills.
- Short-term federal agency securities.
- Bank certificates of deposit.
- Banker's acceptances.
- Time deposits.
- Repurchase agreements.
- Commercial paper.
- Money market mutual funds.
- Adjustable-rate preferred stock.

Adjustable-rate preferred stock has a dividend rate that is reset periodically to current market yields (through an auction in the case of auction-rate preferred) and offers corporate holders a tax advantage because a percentage of the dividends received is exempt from federal tax.

Yield measures used to compare different options for investing excess cash balances include:

$$\% \text{ discount from face value} = \left(\frac{\text{face value} - \text{price}}{\text{face value}} \right)$$

$$\begin{aligned} \text{discount-basis yield} &= \left(\frac{\text{face value} - \text{price}}{\text{face value}} \right) \left(\frac{360}{\text{days}} \right) \\ &= \% \text{ discount} \left(\frac{360}{\text{days}} \right) \end{aligned}$$

$$\text{money market yield} = \left(\frac{\text{face value} - \text{price}}{\text{price}} \right) \left(\frac{360}{\text{days to maturity}} \right)$$

$$\begin{aligned} \text{bond equivalent yield} &= \left(\frac{\text{face value} - \text{price}}{\text{price}} \right) \left(\frac{365}{\text{days to maturity}} \right) \\ &= \text{HPY} \left(\frac{365}{\text{days}} \right) \end{aligned}$$

Note that in Quantitative Methods, the bond equivalent yield was defined differently, as two times the effective semiannual holding period yield.

Cash Management Investment Policy

- An investment policy statement typically begins with a statement of the purpose and objective of the investment portfolio and some general guidelines about the strategy to be employed to achieve those objectives and the types of securities that will be used.
- The investment policy statement will also include specific information about who is allowed to purchase securities, who is responsible for complying with company guidelines, and what steps will be taken if the investment guidelines are not followed.
- Finally, the investment policy statement will include limitations on the specific types of securities permitted for investment of short-term funds, limitations on the credit ratings of portfolio securities, and limitations on the proportions of the total short-term securities portfolio that can be invested in the various types of permitted securities.

An investment policy statement should be evaluated on how well the policy can be expected to satisfy the goals and purpose of short-term investments, generating yield without taking on excessive credit or liquidity risk. The policy should not be overly restrictive in the context of meeting the goals of safety and liquidity.

Evaluating Firm Performance in Managing Receivables, Inventory, and Payables

Receivables

The management of accounts receivable begins with calculation of the average days of receivables and comparison of this ratio to a firm's historical performance or to the average ratios for a group of comparable companies.

More detail about accounts receivable performance can be gained by using an aging schedule that shows amounts of receivables by the length of time they have been outstanding.

Presenting the amounts in an aging schedule as percentages of total outstanding receivables can facilitate analysis of how the aging schedule for receivables is changing over time.

Another useful metric for monitoring accounts receivable performance is the *weighted average collection period*, the average days outstanding per dollar of receivables. The weights are the percentages of total receivables in each category of days outstanding, and these are multiplied by the average days to collect accounts within each aging category.

Analysis of the historical trends and significant changes in a firm's aging schedule and weighted average collection days can give a clearer picture of what is driving changes in the simpler metric of average days of receivables.

The company must always evaluate the tradeoff between more strict credit terms and borrower creditworthiness and the ability to make sales. Terms that are too strict will lead to less-than-optimal sales. Terms that are too lenient will increase sales at the cost of longer average days of receivables, which must be funded at some cost and will increase bad accounts, directly affecting profitability.

Inventory

Inventory management involves a tradeoff as well. Inventory levels that are too low will result in lost sales (stock outs), while inventory that is too large will have costs (carrying costs) because the firm's capital is tied up in inventory.

Reducing inventory will free up cash that can be invested in interest-bearing securities or used to reduce debt or equity funding.

Increasing inventory in terms of average days' inventory or a decreasing inventory turnover ratio can both indicate inventory that is too large. A large inventory can lead to greater losses from obsolete items and can also indicate that items that no longer sell well are included in inventory.

Comparison of average days of inventory and inventory turnover ratios between industries, or even between two firms that have different business strategies, can be misleading.

Payables

Payables must be managed well because they represent a source of working capital to the firm. If the firm pays its payables prior to their due dates, cash is unnecessarily used and interest on it is sacrificed. If a firm pays its payables late, it can damage relationships with suppliers and lead to more restrictive credit terms or even the requirement that purchases be made for cash. Late payment can also result in interest charges that are high compared to those of other sources of short-term financing.

- A company with a short payables period (high payables turnover) may simply be taking advantage of discounts for paying early because it has good low-cost funds available to finance its working capital needs.
- A company with a long payables period may be such an important buyer that it can effectively utilize accounts payable as a source of short-term funding with relatively little cost (suppliers will put up with it).

- Monitoring the changes in days' payables outstanding over time for a single firm will, however, aid the analyst and an extension of days' payables may serve as an early warning of deteriorating short-term liquidity.

A discount is often available for early payment of an invoice (for example, "2/10 net 60" is a 2% discount for paying an invoice within 10 days that is due in full after 60 days). Paying the full invoice later instead of taking the discount is a use of trade credit. The **cost of trade credit** can be calculated as:

$$\text{cost of trade credit} = \left(1 + \frac{\text{PD}}{1 - \text{PD}}\right)^{\frac{365}{\text{days past discount}}} - 1$$

where:

PD = percent discount (in decimals)

days past discount = the number of days after the end of the discount period

Sources of Short-Term Funding

Bank Sources

- *Uncommitted line of credit*: Non-binding offer of credit.
- *Committed (regular) line of credit*: Binding offer of credit to a certain maximum amount for a specific time period. Requires a fee, called an overdraft line of credit outside the United States.
- *Revolving line of credit*: Most reliable line of credit, typically for longer terms than a committed line of credit, can be listed on a firm's financial statements in the footnotes as a source of liquidity.

Lines of credit are used primarily by large, financially sound companies.

- *Banker's acceptances*: Used by firms that export goods and are a guarantee from the bank of the firm that has ordered the goods, stating that a payment will be made upon receipt of the goods. The exporting company can then sell this acceptance at a discount in order to generate funds.
- *Collateralized borrowing*: Firms with weaker credit can borrow at better rates if they pledge specific collateral (receivables, inventory, equipment). A *blanket lien* gives the lender a claim to all current and future firm assets as collateral additional to specific named collateral.

Non-Bank Sources

- *Factoring:* The actual sale of receivables at a discount from their face value. The factor takes on the responsibility for collecting receivables and the credit risk of the receivables portfolio.
- Smaller firms and firms with poor credit may use *nonbank finance* companies for short-term funding. The cost of such funding is higher than other sources and is used by firms for which normal bank sources of short-term funding are not available.
- Large, creditworthy companies can also issue short-term debt securities called *commercial paper*. Interest costs are typically slightly less than the rate the firm could get from a bank.

Managing Short-Term Funding

In managing its short-term financing, a firm should focus on the objectives of having sufficient sources of funding for current as well as for future foreseeable cash needs, and should seek the most cost-effective rates available given its needs, assets, and creditworthiness. The firm should have the ability to prepay short-term borrowings when cash flow permits and have the flexibility to structure its short-term financing so that the debt matures without peaks and can be matched to expected cash flows.

For large borrowers, it is important that the firm has alternative sources of short-term funding and even alternative lenders for a particular type of financing. It is often worth having slightly higher overall short-term funding costs in order to have flexibility and redundant sources of financing.