Level I of the CFA® 2025 Exam

Study Notes - Corporate Issuers

Offered by AnalystPrep

Last Updated: Aug 1, 2024

©2024 AnalystPrep “This document is protected by International copyright laws. Reproduction and/or distribution of this document is prohibited. Infringers will be prosecuted in their local jurisdictions.”

Table of Contents

© 2014-2024 AnalystPrep.

Learning Module 1: Organization Forms, Corporate Issuer Features and Ownership

LOS 1a: compare the organizational forms of business

Generally, there are three major organizations in market economies, each with specific reasons, stakeholders, and a governing legal framework. They include:

i. For-profit organizations (businesses or companies)
ii. Not-for-profit, non-governmental organizations (non-profits)
iii. Governments.

Under for-profits or simply businesses, there are three business structures:

i. Sole trader or sole proprietorship.
ii. Partnership.
iii. Limited company.

We concentrate on the for-profits in the subsequent discussions.

Organizational Forms of Business

A business structure describes how a business is organized, influencing day-to-day operations. Five factors determine a business structure:

i. **Legal Identity:** Describes the legal relationship between the owner(s) and the business.
ii. **Owner Liability:** Indicates the level of liability an individual assumes dues to a business' actions or debts. The levels of liability can be described as **limited** or **unlimited**.
iii. **Owner-manager Relationship:** Describes the relationship between a business's owner(s) and the management.
iv. **Taxation:** Describes the tax regime applicable to a business structure.
v. **Access to financing:** A firm's ability to raise capital and distribute risk.

© 2014-2024 AnalystPrep.

Types of Business Structures

Considering the above factors, we now discuss the following business structures:

1. **Sole Proprietorship (or Sole Trader)**

   In a proprietorship, the owner raises the business capital and fully controls business operations. Moreover, the owner benefits fully from financial returns and assumes all the business risks.In most jurisdictions, sole proprietorship does not require formal legal registration. The sole trader is dissolved when the owner stops business operations.A good example would be a plumber.

   General Features of Sole Trader

   - The owner operates it.
   - The business is not a legal identity. Hence it is considered as an extension of the owner.
   - The owner keeps all the financial returns and bears all risks.
   - Profits generated by the business are taxed as personal income.
   - It is simple and flexible to operate.
   - Financing is solely from the owner.
   - Business growth depends on the financial ability and risk appetite of the owner.

2. **Partnerships**

   In partnership business structures, multiple owners contribute resources and share business risk and return. There are two types of partnerships: General partnerships and imited partnerships.

   i. **General Partnership**

      In the general partnership business structure, at least two owners (partners)

© 2014-2024 AnalystPrep.

whose roles and responsibilities are stated in the **partnership agreement**. However, partnerships can also be initiated verbally or incidentally.Unlike a sole proprietorship, there are multiple sources of funds, and the returns and risks are shared.

Good examples are professional service businesses such as law and accounting firms.

General Features of General Partnership

- Partners operate the business.
- It has no legal identity since ownership is set in the partnership agreement.
- The partners share all business risks and business liabilities.
- The partners share business returns, and profits are taxed like personal income.
- Capital and expertise are provided to the partners.
- Business growth depends on the ability of the partners to finance and the level of their risk appetite.

ii. **Limited Partnership**

In a limited partnership, partners are divided into two:

1. At least one **general partner (GP) has unlimited liability** and is responsible for managing the business.
2. **Limited partners (LPs)** have, as the name suggests, limited liability. This means their losses are capped at their investment amounts in the limited partnership.

The limited partners earn a share profit that is usually lower than that of the general partners. General partners earn more, given their managerial position in

© 2014-2024 AnalystPrep.

the business.

Limited partnerships include private equity funds, real estate, and hedge funds.

General Features of Limited Partnerships

- The partners provide capital contributions and expertise.
- The general partner manages the business and has unlimited liability.
- Limited partners do not have business control and have limited liability.
- All partners are entitled to a share in returns, where profits are taxed as personal income.
- Business growth depends on the financial capabilities of the GPs and LPs, risk appetite, and the competence and integrity of the GP(s).

A **limited liability partnership (LLP)** is a unique form of limited partnership existing in certain jurisdictions. An LLP does not have a general partner; it consists of only limited partners. All partners bear limited liability and share management responsibilities.

Commonly, one or more partners are voted in as managing partners. For example, in the USA, LLPs include service firms such as law and accounting firms.

Limited Companies

A limited company is similar to a limited partnership, except that a limited company incorporates more features that facilitate more access to capital and skills that promote growth.

Limited companies are categorized into:

i. Private limited company
ii. Public limited company

© 2014-2024 AnalystPrep.

Private Limited Company

A private limited company is like a limited partnership. However, in a limited company, all owners bear limited liability, ownership can be easily transferred using shares, and owners and managers are separated.

The owners called the shareholders, elect the board of directors to oversee the company and approve the distribution of profits to the owners. On the other hand, the board of directors appoints various managers.

A private limited company goes by different names depending on the jurisdiction within which it operates. For instance, it is referred to as a limited company in the UK and a limited liability company (LLC) in the US. In the US, LLCs are legally restricted to a certain number of shareholders, and taxation is applied at the shareholder level only.

Public Limited Companies (Corporations)

A public limited company (corporation) is similar to a private limited company, except that in many jurisdictions, there is no legal restriction on the number of owners or transfer of ownership.

General Features of a Corporation

- A corporation is a separate legal entity.
- Dividends (distributions) paid to the owners are taxed as personal income.
- Corporations have unlimited opportunities to access capital, hence unlimited capital potential.
- Owner-operator separation allows for higher and more diverse resourcing with significant risk control.
- In some countries, corporations are **tax disadvantaged** due to double taxation of corporate profits.

© 2014-2024 AnalystPrep.

- Business liability is shared among multiple owners with limited liability.

Given the features of a corporation, it is the most appropriate form of company that wishes to go public and have a substantial global organizational form in terms of revenues and asset values.

© 2014-2024 AnalystPrep.

Question

Which of the following statements is *most likely* correct regarding business structures?

A. Sole trader and general partnerships business structures both have a legal identity.
B. The taxation regimes for sole traders and partnerships are different.
C. Corporate bondholders and shareholders have different claims on a corporation in exchange for the capital they provide.

Solution

The correct answer is C.

Corporate bondholders and shareholders are the capital providers of a corporation. Corporate bondholders provide debt capital, while the shareholders provide equity capital. The bondholders provide debt capital in exchange for issued debt securities with no ownership entitlement. On the other hand, aside from returns, shareholders are entitled to the company's ownership.

A is incorrect. Sole traders (sole proprietorships) and general partnerships do not have a legal identity. The business structures are considered an extension of the owner (sole proprietorship) or partnership agreement (general partnerships).

B is incorrect. The tax structures in both sole trader and partnerships are comparable because, in both business structures, profits are taxed as personal income.

© 2014-2024 AnalystPrep.

LOS 1b: describe key features of corporate issuers

In this section, we shall delve more into corporations. Corporate issuers are corporations that raise their capital in financial markets. It is essential for financial analysts to understand corporate issuers because they can raise more capital from investors than governments worldwide.

Key features include:

Legal Identity

When a corporation is formed, articles of incorporation to a regulatory authority are filled. As such, a corporation is considered a legal entity that is unique and separate from its owners. Being a legal entity implies that a corporation has the rights and responsibilities of an individual. As such, it can participate in activities such as signing contracts, hiring employees, suing, being sued, borrowing, lending money, paying taxes, and initiating investments.

Established corporations are subject to regulatory jurisdictions in which they conduct business, list their securities, and are incorporated.

Depending on where the company is incorporated, where business is conducted, and where the company seeks financing, notable activities that regulatory bodies mainly concentrate on include:

- Registration of corporations.
- Financial and non-financial reporting and disclosure.
- Corporation's capital market activities.

Owner-Manager Separation

A notable corporation feature is owner-operator separation; the business owners and managers

© 2014-2024 AnalystPrep.

are independent. In other words, the business owners are excluded from the company's day-to-day operations.

The owners elect a board of directors to run the business. The board then hires the CEO and other senior managers to oversee the corporation's day-to-day operations. The board of directors must conduct business that aligns with the owner's interest; otherwise, the owners may enact change through voting rights linked to their share.

In addition to adhering to the owner's interests, the board is expected to consider the interests of other stakeholders such as employees, creditors, customers, suppliers, regulators, and members of the society where the corporations operate.

The Owner-Manager separation of a corporation allows corporations to access capital financing easily. This is because capital is the only requirement to become one of the owners. As such, the owners can leverage greater resources to run the business.

Owner/Shareholder Liability

The risks in a corporation are shared among all owners. However, owners have limited liability. This implies that the maximum loss owners can incur is the amount of their investment in the business. Moreover, returns are shared by the owners through equity claims proportional to their respective shares.

There is no contractual obligation for the repayment of the ownership claim. Nevertheless, the owners have a residual claim on the corporation's cash flows and assets after liabilities have been settled.

External Financing

Corporations access capital financing through capital providers. These individuals and entities are willing to finance a company in return for the company's issued securities. The issued securities raise two types of capital:

- **Ownership capital (equity):** This is the money invested by a corporation's owners in

© 2014-2024 AnalystPrep.

return for the company's ownership (they become shareholders), hence entitled to receive profit distributions in terms of dividends.

- **Borrowed capital (debt):** Money borrowed from lenders (bondholders). The bondholders exchange their capital for issued debt securities with no ownership entitlement.

Capital providers include corporations, family offices, governments, and individuals.

Taxation

Corporations are subject to the tax authority and tax codes outlining the issuer's tax reporting, payment, and status. Tax regimes on corporations vary from country to country.

In most countries, corporations are taxed directly on their profits. Moreover, shareholders may be taxed on dividends (double taxation of corporate profits). However, in some countries, shareholders are not taxed if the corporations had initially paid taxes on the dividends distributed.

© 2014-2024 AnalystPrep.

Question

Double taxation will matter the *most* for:

A. A company that reinvests its after-tax profits each year into business expansion.
B. Shareholders who live in a country with high tax rates on dividend income.
C. A company in a tax jurisdiction that pays no tax at all.

Solution

B is correct. High tax rates on shareholder dividends will cause companies to retain profits, change the organizational form of business or find an alternative way of distributing profits.

A is incorrect. No double taxation occurs because the company reinvests its profits; thus, no dividends are paid to shareholders.

C is incorrect. Double taxation will not be an issue if the company is not entitled to pay tax.

© 2014-2024 AnalystPrep.

LOS 1c: compare publicly and privately owned corporate issuers;

A corporation can either be regarded as private or public. The following factors determine this classification:

- Issuance of shares.
- Exchange listing and share transfer.
- Registration and disclosure requirements.

1. **Issuance of SharesPublic Companies**

   Public companies may issue additional shares in the capital markets to raise vast amounts of capital from investors. The investors can then trade among themselves in the secondary market.

   Private Companies

   In contrast, private companies invite investors to purchase their shares through a private placement memorandum (PPM) (also called an offering memorandum). This document describes a business, the terms of the offering, and the risks involved in investing in the company.

   Private securities are typically unregulated. As such, only accredited investors may be invited to purchase the shares. **Accredited investors** are sophisticated investors whose high-risk appetite is so high that regulatory oversight and protection are unnecessary. An accredited investor should have a particular level of income (i.e., in the US, $200,000 in income over the past two years or $1 million in the capital) or a certain level of professional experience, such as holding in good standing a Series 7, 65, or 82 licenses.

2. **Exchange Listing and Share Ownership TransferPublic Companies**

   Typically, the shares of a public company are listed and traded on an exchange. This allows the owners of a company to be easily transferred since buyers and sellers transact directly with one another in the secondary market.

© 2014-2024 AnalystPrep.

Each transaction between a buyer and seller causes a change in share price. Such transactions, therefore, can show the changes in the value of companies over time. Moreover, the effect of significant news about a company or the overall economy can affect the value of the shares.

A listed public company's equity (market capitalization) can easily be calculated by multiplying the most recent stock price by the number outstanding.

Market capitalization is the theoretical amount an investor would pay to own an entire company. However, the investor must add a premium over market capitalization to woo the shareholders into acquisition.

Investors are also interested in the enterprise value of a public company. Enterprise value represents the market value of a company, i.e., the net cash held by the company. It is calculated as:

$$\text{Enterprise value} = \text{Market value of shares} + \text{Market value of Debt} - \text{Cash}$$

Enterprise value gives a better value than the cost of owning a company that is free and clear of all debt.

Private Companies

In private companies, shares are not listed on an exchange. For this reason, there is no noticeable valuation or price transparency, making it difficult to buy and sell shares. However, if the private company owner wants to sell shares, they will have to find a willing buyer and then agree on the price.

For private company shareholders, their investment is locked up either until another company buys the company or it goes public. However, the potential returns earned from private companies are generally higher than those earned from public companies.

3. **Registration and Disclosure RequirementsPublic Companies**Public companies are obligated to register with a regulatory authority. This implies that they are subject to greater compliance and reporting requirements. For instance, the Securities and

© 2014-2024 AnalystPrep.

Exchange Commission (SEC) regulates US public companies.

Additionally, public companies must disclose certain information, such as directors' stock transactions. The disclosed documents are publicized. It is, therefore, easier for investors and analysts to gauge the risks that might affect a company's business strategy and profit generation or those that might impede the fulfillment of its financial obligations.

Private Companies

Private companies are not subject to the same level of regulatory authority as public companies. Despite that, some pertinent rules, such as filing tax returns and prohibitions against fraud, are still applicable. It is worth appreciating that, unlike their public counterparts, private companies have no obligation to disclose certain information to the public.

Private companies can willingly disclose important information directly to their investors. This mainly happens when there is an objective to raise capital in the future. They are not required to file documents to a regulatory body.

Going from Private Company to Public Company

A private company can go public in three ways: **Initial public offering (IPO)**, **direct listing**, and **acquisition**.

Initial Public Offering (IPO)

In this method, a private company that meets specific listing requirements outlined by the exchange completes an IPO. An IPO involves an investment bank that underwrites the sale of new or existing shares. If it goes through, the company is public, and thus its shares are traded on an exchange.

The proceeds from an IPO go to the issuing company, which can then use to capitalize on other investments.

© 2014-2024 AnalystPrep.

Direct Listing (DL)

Unlike an IPO, the direct listing does not involve an underwriter, and no new capital is raised. In a direct listing, the company is listed on an exchange where the existing shareholders sell the shares. A direct listing is beneficial in that it is fast and cost-effective.

Acquisition

A private company may go public when acquired by a large public company. Another way is through a unique purpose acquisition company (SPAC). A SPAC is a public company specializing in acquiring an unspecified company in the future; thus, it is mainly called a “blank check” company.

How do SPACs operate?

SPACs raise capital through an IPO, where proceeds are put in a trust account. The money in the trust account can only be distributed to complete the acquisition or can be returned to the investors after a finite time has elapsed.

Investors in SPACs do not know what the SPAC will buy, but they can speculate from the backgrounds of the SPAC's executives or comments on social media. When the SPAC finalizes the purchase of the private company, the company goes public.

Going from Public Company to Private Company

A company can go from public to private when investors (or groups of investors) purchase all the company shares and then delist them from the exchange. This can happen through a **leveraged buyout (LBO)** or **managed buyout (MBO)**.

Both LBOs and MBOs involve borrowing capital to finance the acquisition. The difference between LBOs and MBOs comes with the relationship between the investors buying a company and the acquired company. In an LBO, the investors are not affiliated with the company, while in an MBO, the buying investors are part of the acquired company's management.

© 2014-2024 AnalystPrep.

LBOs and MBOs typically occur when investors feel a company's shares are undervalued in the public market. Further, they can happen when investors are persuaded that the financing costs of the acquisition are significantly low and attractive.

Trends in Public and Private Companies

In emerging economies, the number of public companies is increasing. This is because there are higher growth rates. Besides, this trend is attributable to the transition from closed to open market structures. The opposite is true for developed economies.

In developed economies, the number of private companies is increasing (an intuitively decreasing public companies) due to the following reasons:

- Mergers and acquisitions.
- Many private companies prefer to be private for easy accessibility of capital from the private market. This is because they can dodge regulatory hampers and associated costs.
- Companies prefer to remain private to discourage the short-term focus most investors in public companies have. Privatization offers flexibility and fruitful decision-making to business leadership.

© 2014-2024 AnalystPrep.

Question

Which of the following statements is *most likely* true regarding a corporation at the maturity stage?

A. Revenue and cash flows are positive and predictable.
B. Revenues are positive and predictable, but cashflows are harmful and unpredictable.
C. Low potential to source external financing.

Solution

The correct answer is A.

At the maturity stage, a corporation has positive cash flows and revenues. As such, the corporation has a high potential to outsource external financing at reasonable terms because its cash flows are more predictable with business-as-usual operations.

© 2014-2024 AnalystPrep.

Learning Module 2: Investors and other Stakeholders

LOS 2a: compare the financial claims and motivations of lenders and shareholders;

Comparison between Debt and Equity Claims

Debtholders, also known as lenders, provide finite-term financial capital to a company. In return, the issuers agree to make regular interest payments and repay the principal on predetermined dates.

Within the corporation, lenders do not possess decision-making authority. Still, the terms of the debt agreement can safeguard them by establishing financial requirements and legal claims on specific company assets if the debt is not repaid according to the agreed terms.

On the other hand, equity investors contribute permanent capital to the company. Issuers typically do not commit to providing future dividends or repayments to shareholders. Instead, equity represents a residual claim on the company's cash flows, meaning whatever is left after expenses, investments, and debt obligations have been satisfied. The distribution of cash to equity investors is subject to the discretion of the board of directors.

Unlike debtholders, equity investors hold voting rights in crucial company matters, such as selecting the board of directors responsible for appointing and overseeing management.

Apart from paying interest to debtholders, the company must meet other financial obligations before any distributions are made to shareholders. These obligations include payments to suppliers, employees, and taxes to the government. In the event of the company's dissolution and liquidation of assets, these priority claims must be settled before any proceeds go to equity investors.

Debtholder interest payments are usually considered tax-deductible expenses, reducing the company's taxable income, whereas dividends paid to shareholders do not offer the same tax benefits.

A summary of the comparison between debt and equity claims is given in the following table:

© 2014-2024 AnalystPrep.

	Legal repayment obligation	Residual asset claim	Discretionary payments	Tax-deductible expense	Finite term	Voting rights
Debt	√			√	√	
Equity		√	√			√

Equity and Debt Risk-return Profiles

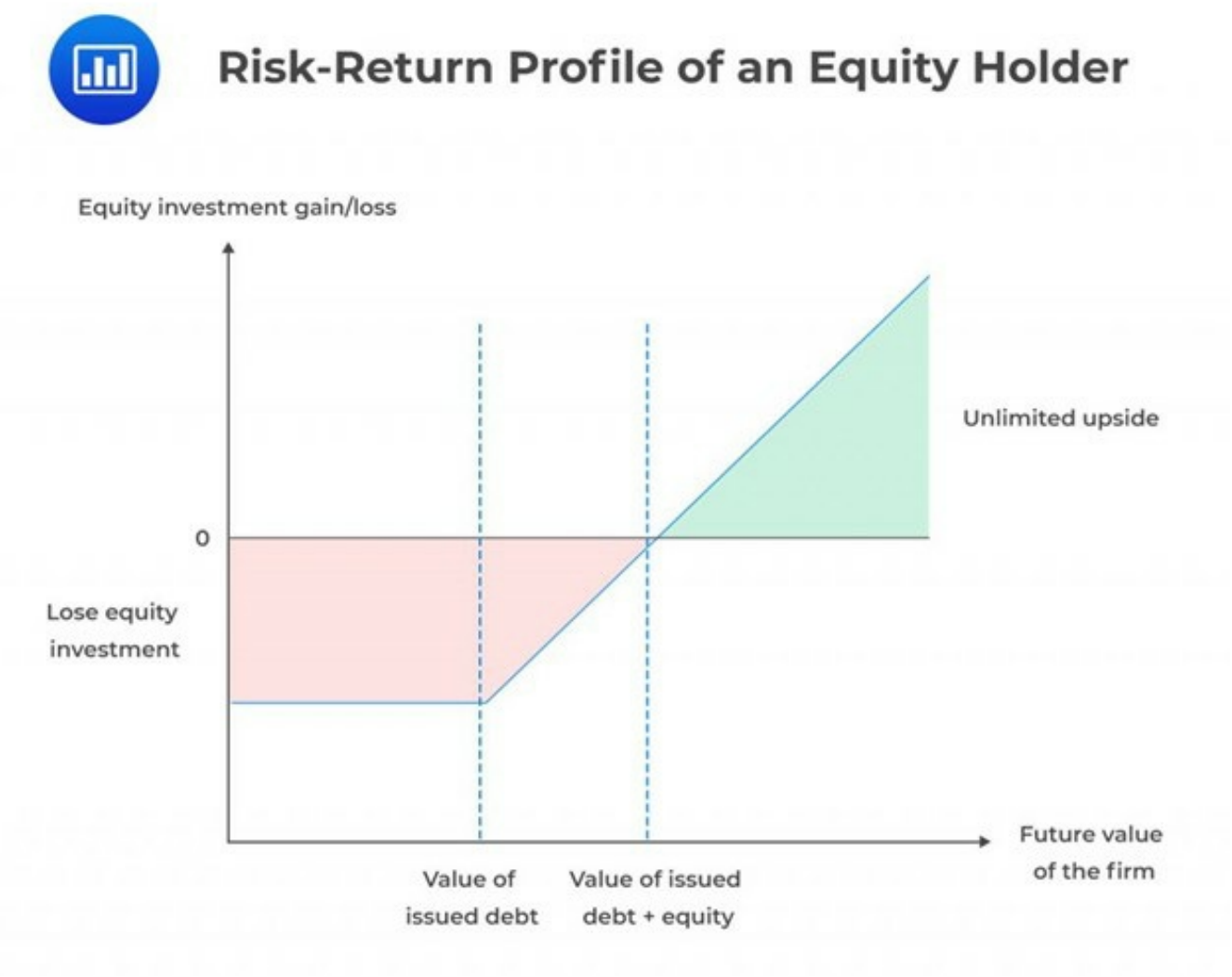
Investor Perspective: Equity Holders

The maximum loss equity holders can incur is capped at their investment amount in a company. On the brighter side, equity holders gain an upside if the share prices increase in the future. In other words, there is no limit on the gains to an equity holder if a company succeeds.

Gains come not only in distributions from a company but also in the residual claim after a profitable corporation settles its obligations. This is equivalent to investment interest to investors.

Regarding risks, investment risk is higher for equity holders than bondholders. Stocks are riskier for investors since no contractual obligation is set to distribute risk to the shareholders or repay the capital investment. This implies that equity holders may lose entire investments if a company goes bankrupt.

© 2014-2024 AnalystPrep.



In conclusion, equity holders are interested in the continuous maximization of a company's net value. This interest is inspired by the fact that continuous net value maximization translates directly to shareholder share values.

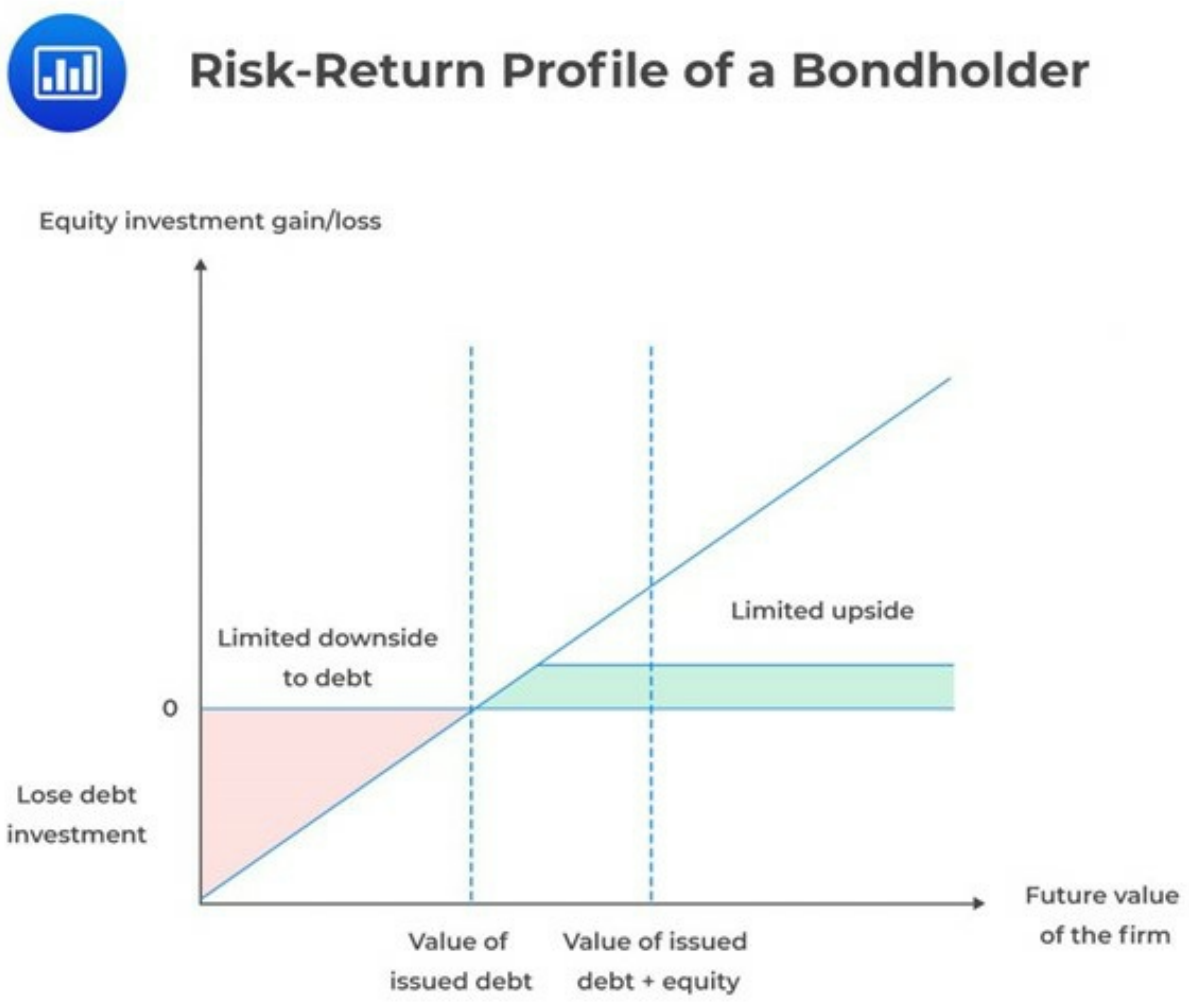
Investor Perspective: Bondholders

Bondholders have fixed priority claims on a company through contractually promised interest payments and return of the principal amount. Unlike equity holders, bondholders do not receive more than the promised interest payments when a company becomes attractively profitable. However, there is a brighter side to this.

Investment risk is lower for bondholders than equity holders. When a company is financially

© 2014-2024 AnalystPrep.

healthy, bondholders are assured of their returns. This is the case considering such a company's capacity to service a loan easily. It is equally worth appreciating that a financially healthy company has sufficient assets that serve as collateral. Therefore, the upside gains to a bondholder are capped at the interest payments plus the principal. However, there are downside losses if a company falls below the book value of the debt.



In contrast to equity holders, bondholders have recourse opportunities when a company is in financial distress. Bondholder payments are prioritized in case of financial stress. Moreover, they can use the contractual agreement to force the issuer to liquidate assets to repay their debt. It is important to note that bondholders could lose their entire investment too.

Therefore, bondholders are keener on the default risk of a company and its ability to meet debt

© 2014-2024 AnalystPrep.

obligations. The debt soundness of a company is determined by the following:

- Assessing the issuer's creditworthiness and willingness to repay debt.
- Evaluating issuer's cash flow and quality of collateral.
- Estimating the probability of default and amount of loss given default.

Risk-return Profile: Issuer Perspective

Corporations prefer debt capital to equity capital. This is because the cost of debt is lower than that of equity capital, and the return to the lenders is capped. Moreover, equity capital dilutes ownership and is only appropriate when the issuer's cash flows are absent or unpredictable.

However, bonds are riskier than shares since they involve contractual agreements which must be honored. Bondholders elevate the risk to the corporation by increasing leverage. The opposite is true for investors. From shareholders' perspective, investment risk is lower because they cannot force the liquidation of assets in case of financial distress.

In extreme cases where an issuer cannot meet bondholders' obligations, it can avoid bankruptcy by renegotiating repayment terms with the bondholders. If the negotiation fails, the issuer can file for bankruptcy protection. In this case, assets will be liquidated to pay the bondholders. An extreme solution is reorganizing the company, where the bondholders take over.

Conflicts of Interest between Bondholders and Equity Holders

The interests of bondholders and equity holders often collide due to their contrasting risk and return preferences. Shareholders, as equity holders, have their losses capped at their initial investment, and they seek maximum returns, making them inclined towards a company's management investing in high-calculated risks with the potential for substantial gains. Their unlimited upside potential drives them to take on the risk of losing their investment if the company faces financial troubles.

In contrast, bondholders have a more conservative approach. Their potential return is limited to the face value of the bond and coupon payments, and they do not benefit from the company's

© 2014-2024 AnalystPrep.

risky investment decisions. As a result, bondholders favor investments in less risky projects that generate predictable cash flows, albeit small, to ensure timely interest and principal repayments.

Despite lacking control over a company's investment decisions, bondholders utilize covenants to safeguard their investment and impose contractual restrictions that protect their interests. This way, bondholders aim to maintain the stability of their investment and mitigate potential risks associated with uncertain ventures.

© 2014-2024 AnalystPrep.

Question #1

Which of the following statements is *most likely* true?

A. Bondholders have residual claims on a company's assets after all other stakeholders have been paid.
B. Stocks are riskier than bonds to the issuer since shareholders are the residual claimants on the firm.
C. Equity and bondholders have comparable investor perspectives regarding maximum loss.

Solution

The correct answer is C.

The maximum loss for both the bondholders and equity holders is their initial investment amount. However, equity holders have unlimited return potential but are exposed to higher investment risk due to a lack of contractual obligation between them and the issuing company.

A is incorrect. Equity holders are the residual claimants of a company's cash flows and assets. This implies that they are only paid after all other stakeholders, such as creditors, suppliers, and government, have been paid.

B is incorrect. Stocks are riskier for investors because the issuing company has no contractual obligation to distribute dividends to shareholders or repay their capital investment. On the other hand, bonds are riskier than stock for the issuer because bonds increase the leverage risk to a company.

Question #2

Which of the following is *most likely* to have a residual claim on the issuer's profits:

A. Government

© 2014-2024 AnalystPrep.

B. Shareholders

C. Lenders

Solution

B is correct. Shareholders have a residual claim to the company's profits after deductions of obligations (e.g., interest payment, taxes, employee benefits.)

A and C are incorrect. Only shareholders have a claim to the company's profits.

© 2014-2024 AnalystPrep.

LOS 2b: describe a company’s stakeholder groups and compare their interests;

A stakeholder is any individual or entity that has a significant interest in a company. Corporations have a complex ecosystem that includes not only the shareholders but also other stakeholders. These groups mutually relate with the company for economic success.

However, the short- and long-term objectives of these conflicts may conflict.

Shareholder and Stakeholder Theories

Corporate governance practices tend to vary from country to country. It is, nevertheless, not uncommon for different corporate governance systems to coexist within a country. Corporate governance systems generally reflect the influences of either shareholder theory, stakeholder theory, or a convergence of the two. Current trends, however, point to an increase in convergence.

Shareholder theory posits that the most critical responsibility of a company's management is to maximize shareholder returns. In other words, the interest of other stakeholders, such as creditors, employees, and society, is only considered if they affect the shareholder value.

On the other hand, **stakeholder theory** emphasizes the need for a company to consider the needs of all its stakeholders. This theory dissuades a company from giving preferential treatment to its shareholders, such as customers, suppliers, creditors, employees, and essentially anyone interested in the company, at the expense of stakeholders. Intuitively, a stakeholder primarily advocates for environmental, social, and governance (ESG).

Consideration of ESG factors by the stakeholder theory comes with some setbacks:

- Complexity in considering multiple objectives.
- Costs associated with compliance with ESG.
- Difficulty in competing globally with companies that do not consider ESG.

© 2014-2024 AnalystPrep.

- There is no clarity in the definition, measurement, and balancing of non-shareholder objectives.

Stakeholder Groups

Investors

The investors of a company include the bondholders and the shareholders.

The debtholders provide the company with debt financing. The debtholders consist of private debtholders and public debtholders (bondholders).

Private Debtholders

Private debtholders include banks, credit facilities, institutions that provide loans and leases. They hold the debt of a company to maturity. Further, they can directly reach a company's management and access non-public information concerning a company. As such, they significantly influence a company since they can be the largest source of capital. Therefore, they can lower debt restrictions and extend more credit.

Public Debtholders

On the other hand, public debtholders depend on public information and credit rating agencies in their decision-making. They include institutional investors and asset managers. Public debtholders receive regular interest payments and capital repayment at maturity in return for the capital provided.

Moreover, public bondholders have little to no authority over the operations of the issuing company and hence rely on the terms of the debt contract with the company. However, bondholders can have significant influence over the company experiences financial distress, and the public debt needs to be restructured.

Public debtholders minimize downside risk thanks to their preference for operation stability and

© 2014-2024 AnalystPrep.

a company's performance. This is usually in contrast to a company's shareholders' interests – tolerance of high risk for higher return potential.

Debtholders always hold onto the same perspective: lower financial leverage, then lower risks. However, some private lenders may have different risk appetites, behavior and approach, and relationships with the companies they provide capital to. Some private lenders focus on asset value, equity positions, cashflows, value, and business forecasts.

Managers

Led by the chief executive officer (CEO), managers are tasked to formulate and implement a company's strategy. They do this under the stewardship of the board of directors. Additionally, they ensure the smooth running of a corporation's day-to-day operations.

Managers tend to benefit when a company performs well. Conversely, they are adversely affected when a company's financial position weakens. As such, they seek to maximize the value of their total remuneration while securing their jobs. Their interests are, therefore, not surprisingly different from those of shareholders, creditors, and other stakeholders.

The Board of Directors

The shareholders of a company elect the board of directors. It protects shareholders' interests, provides strategic direction, and monitors company and management performance. Also, the board hires the CEO of the company.

The board usually consists of inside directors and independent directors. The inside directors consist of the company's leading shareholders, founders, and senior managers. On the other hand, independent directors, as the name suggests, are not linked with the company concerning employment, ownership, and remuneration. As such, independent directors are elected because of their experience.

Types of Board Structures

The board can have a single-tier or two-tier structure. In a single-tier board, the company's

© 2014-2024 AnalystPrep.

board of directors includes executive directors (usually company executives) and non-executive directors (independent members without day-to-day involvement in company operations).

On the other hand, a two-tier board structure is a corporate governance model where a company's board of directors is divided into two separate boards: the management board and the supervisory board:

i. **Management Board:** The management board is responsible for the company's day-to-day operations and strategic management. It typically consists of executive directors who are actively involved in running the company and making operational decisions.
ii. **Supervisory Board:** The supervisory board oversees the management board and ensures it acts in the company's and its stakeholders' best interests. It usually comprises non-executive directors (often independent individuals) who are not directly involved in daily operations. The supervisory board's primary role is to provide guidance, monitor performance, and approve major decisions made by the management board.

Staggered Boards

Some companies have staggered boards. In these companies, directors are divided into groups and elected separately in consecutive years, resulting in a staggered rotation of board members. This approach creates a situation where it takes several years to replace the entire board.

The advantage of staggered boards lies in the continuity they offer to the company's leadership. By avoiding simultaneous turnover of board members, there is a reduced need for constant reassessment of strategy and oversight by new directors.

The downside of staggered boards is that they limit the ability of shareholders to effect a swift and major change of control at the company. With only a portion of the board up for re-election each year, shareholders may find it challenging to influence the board's overall composition and direction on time.

An optimal board of directors does not exist. As such, boards vary based on the company's size, structure, and type of operations. However, most governance codes stipulate that board members should reflect different expertise, backgrounds, and competencies.

© 2014-2024 AnalystPrep.

Employees

To deliver its goods and services, a company relies on the knowledge and labour of its employees, or human capital. In return, workers often want competitive pay, room for advancement, steady employment, and a safe and comfortable work environment. Employees' interests are better aligned with the performance of the company when they have the option to participate in equity-based incentive schemes, in addition to their duties as employees.

Customers

Customers expect a company to satisfy their needs and give them the necessary benefits when they purchase its goods or services. Customers may receive continuous support, product guarantees, and after-sale service, depending on the products and services a company deals in.

Suppliers

Suppliers are the short-term creditors of a company whose main interest is to be paid as agreed for products or services delivered. Suppliers are interested in a company's financial health and seek long-term relationships with it for mutual benefits.

Governments

Governments and regulators seek to ensure that companies comply with the law and act in a manner that safeguards the interests and well-being of the public. Moreover, governments collect taxes from companies.

© 2014-2024 AnalystPrep.

Question

Which one of the following is *least likely* considered a primary function of the board of directors?

A. Managing day-to-day operations of the company.
B. Approving major corporate strategies and transactions.
C. Overseeing the implementation of broad corporate policies.

Solution

The correct answer is **A.**

The board of directors is responsible for the governance of a company, which includes providing strategic direction and overseeing the overall operation at a high level, but it does not typically manage day-to-day operations.

That role is generally assigned to the company's executive management team, led by the CEO or managing director. The board's functions include overseeing the implementation of broad corporate policies and approving major strategies and transactions, ensuring that the company aligns with the goals and policies set forth for its successful operation.

© 2014-2024 AnalystPrep.

LOS 2c: describe environmental, social, and governance factors of corporate issuers considered by investors

Debt and equity investors are progressively adopting a stakeholder viewpoint rather than a strictly shareholder-focused one. They prioritize Environmental, Social, and Governance (ESG) factors when making investment decisions. As such, corporate issuers need to incorporate these factors when setting goals regarding operating, investing, and financing decisions.

ESG is increasingly relevant for three main reasons:

- They have more significant negative financial effects on a company's fair value. Both debtholders and shareholders have lost substantial capital due to social controversies, poor governance, or environmental disasters and
- Increasing interest in the social and environmental effects of investments, especially among the younger demographic. Many young investors demand that their newly acquired or inherited money be handled using investing techniques that consider significant ESG concerns.
- Governments are increasingly prioritizing social policies and climate change. They have revised regulations forcing corporate issuers to align their business practices with the strict ESG criteria.

In response to stakeholder awareness and tightening restrictions, investors are incorporating environmental and societal costs into company financial statements and forecasts.

Introduction to Environmental, Social, and Governance Factors

Environmental Factors

When an ESG element is anticipated to have an effect on a company's long-term business model, it is deemed to be material. The environmental factors that are material include:

© 2014-2024 AnalystPrep.

- Climate change
- Pollution and waste
- Resource and land use
- Ecological footprint
- Biodiversity

For instance, climate can be described as a physical risk or transition risk. Climate change can be a physical risk because it destroys assets due to bad weather. Physical risk can be insured.

Climate change as transition risk refers to losses associated with transitioning to a low-carbon economy resulting from regulations or shifts in consumer demand.

Strategic or operational choices based on subpar governance procedures or poor judgment can negatively impact the environment. Expenses such as legal fees, clean-up expenses, regulatory fines, and reputational damage can be costly.

Social Factors

Social factors pertain to the impact of the companies practices on:

- Employees and human capital
- Customers
- Community in which it operates.

By minimizing social risk, a company can lower its costs through increased employee productivity, lower employee turnover, and reduced legal and reputational risks.

Governance Factors

Stakeholder management and corporate governance address the following issues:

- Ownership and voting system of the company.

© 2014-2024 AnalystPrep.

- The suitability of board members' skills and experience to meet present and future company requirements.
- How well management compensation aligns with the company's performance.
- The level of shareholder rights compared to other similar companies.
- The company's proficiency in managing long-term risks and sustainability.

These questions and areas provide valuable insights about sources of risk and management quality. This information is often found in sustainability reports, annual reports, and issuer's proxy statements.

Evaluating ESG Risks and Opportunities

Recall that debt and equity investors have different claims on a company. The influence of ESG factors on corporate cash flows depends on how they impact the value of debt and equity claims:

- Once identified, the financial impact of material ESG factors must be quantified in terms of how they positively or negatively affect the firm's future discounted cash flows.
- Significant long-term adverse ESG-related events typically have an immediate and disproportionate impact on equity claims since they represent residual claims to future company cash flows.
- Although adverse ESG-related events impact the value of debtholder claims, their effect is generally less pronounced compared to equity, except in cases where the company's ability to fulfill interest and principal payments is adversely affected.
- The effects of adverse ESG-related events often differ depending on the maturity of the debt. For example, a coal company facing long-term risks from potential asset write-downs due to regulatory changes or shifts in demand would likely have a greater negative impact on debt maturing in ten years compared to short-term debt maturing in twelve months.

© 2014-2024 AnalystPrep.

In conclusion, analysts assess the potential positive and negative effects of significant ESG-related factors. These financial impacts are reflected in a company's projected financial statements and ratios. They use future expected cash flows discounted at an appropriate rate and employ sensitivity or scenario analysis to evaluate different outcomes for debt and equity holders.

© 2014-2024 AnalystPrep.

Question

Which of the following is *most likely* an example of a social factor under environmental, social, and governance risks?

A. Deforestation.
B. Shareholder rights.
C. Equality and diversity.

The correct answer is C.

Equality and diversity are examples of social factors. Other examples of social factors include human rights and community relations.

A is correct. Deforestation is an example of an environmental factor. Other examples of environmental factors include waste management and energy efficiency.

B is incorrect. Shareholder rights are an example of a governance factor. Other examples of governance factors include bribery and corruption, and executive compensation.

© 2014-2024 AnalystPrep.

Learning Module 3: Corporate Governance: Conflicts, Mechanisms, Risks, and Benefits

LOS 3a: describe the principal-agent relationship and conflicts that may arise between stakeholder groups;

The term ‘principal-agent relationship’ or simply ‘agency relationship’ describes an arrangement where one entity, the principal, legally appoints another entity, the agent, to act on its behalf by providing a service or performing a particular task.

The agent is expected to act in the best interest of the principal. It is, however, not unusual for principal-agent relationships to lead to conflicts. The most common example of this occurs when managers, acting as agents, do not act in the best interest of the shareholders of a company (the principals).

Shareholder and Manager/Director Relationships

Directors and managers (agents) are expected to act in the best interests of the shareholders (principal) by maximizing a company's equity value. These two groups, however, tend to have conflicting interests on issues related to the risks that a company should undertake. Managers and directors tend to act more risk-averse to protect their employment status. On their part, shareholders want directors and managers to accept more risk to maximize equity value.

In addition, managers usually have greater access to information and are more knowledgeable about a company's affairs than the shareholders. This information asymmetry makes it easier for managers to make strategic decisions that are not necessarily in the best interests of shareholders.

Managers' and stockholders' interests are rarely perfectly aligned. Examples of conflicts include:

- **Lack of Adequate Effort:** Managers may be incapable or reluctant to make investments, effectively manage costs, or make tough choices such as closing unprofitable business segments. Inadequate monitoring of employees or lack of control

© 2014-2024 AnalystPrep.

may lead to unintentional risks and potential legal issues.

- **Misaligned Risk Appetite:** Compensation packages heavily reliant on stock grants and options may drive excessive risk-taking by management, as these benefit from rising share prices. Conversely, minimal usage of such incentives can result in overly cautious decision-making and difficulty attracting skilled personnel. This misalignment may conflict with the company's goal of value creation or shareholders' preference for high-risk, high-reward ventures.
- **Pursuit of Excessive Growth:** Management compensation and status often correlate with the size of the business which can motivate managers to chase “growth for growth's sake,” such as acquisitions that do not boost shareholder value.
- **Entrenchment:** Directors and managers aim to keep their positions. Strategies to achieve this may include emulating competitors, risk avoidance, and undertaking complex transactions and restructurings they are uniquely qualified to handle.
- **Self-interest:** Managers might use company resources to maximize personal gains, such as excessive benefits, or deceive investors by misusing assets. The lesser the manager's stake in the company, the less they bear these costs personally, reducing their motivation to maximize company value.

Agency Costs

When an agent acts on behalf of a principal, conflicts of interest may increase expenses related to reducing these conflicts. These costs are known as agency costs. Agency costs can be direct costs, such as employing monitoring agents like auditors, or indirect costs, such as forgone benefits of missed opportunities.

Controlling and Minority Shareholder Relationships

Corporate ownership can be classified as either dispersed on concentrated. Dispersed ownership

© 2014-2024 AnalystPrep.

implies that a company has many shareholders, with none controlling the corporation.

On the other hand, concentrated ownership implies that among the shareholders of the company, there are controlling shareholders who have authority over the corporation—for instance, a family company.

Another factor that determines whether a company is concentrated or dispersed is the shareholder voting structures and share classes with varying degrees of voting rights.

In a simple voting structure, one shareholder carries one vote. In contrast, a dual-class structure involves one share class, say class A, that bears one vote per share and is publicly held and traded, and another class, say class B, that bears multiple votes per share and is entirely owned by company founders or insiders.

Clearly, the dual-class structure gives some of the corporation's shareholders the power to control the company even if they do have significant shares outstanding.

Minority shareholders usually have limited or no control over the management. Similarly, they have limited or no voice in director appointments or significant transactions that could directly impact shareholder value.

As a result, conflicts between minority and controlling shareholders can occur. Such conflicts arise when the influence of the controlling shareholders eclipses the opinions or desires of the minority shareholders.

Manager and Board Relationships

Whereas managers are involved in the day-to-day operations of a company, the board of directors, especially the non-executive board members, are not. This leads to information asymmetry and makes it difficult for the board to perform its functions effectively.

Shareholder vs. Creditor (Debtholder) Interests

© 2014-2024 AnalystPrep.

Creditors' interest is to have a company undertake activities that promote stable financial performance. This guarantees the maintenance of default risk at an acceptable level. Further, it essentially guarantees a safe return of their principal and payment of interest by the company. On the other hand, shareholders prefer to have a company venture into riskier activities with high return potential and are, as such, more likely to enhance equity value. There is, therefore, a divergence of interest in risk tolerance between these two groups.

© 2014-2024 AnalystPrep.

Question

Which of the following instances of conflict of interest between managers and shareholders is *most likely* a result of managers' compensation being tied to the company's size?

A. Entrenchment.
B. Empire building.
C. Excessive risk-taking.

The correct answer is B.

Empire building refers to the behavior of managers who expand the size or scope of their company beyond what is necessary or beneficial for shareholders.

When managers' compensation is directly linked to the company's size, they may have incentives to pursue empire building to increase their own compensation, even if it is not in the best interests of shareholders. This can lead to inefficiencies, increased operating costs, and lower returns for shareholders.

A is incorrect. Entrenchment typically occurs when managers prioritize their own job security or personal interests over maximizing shareholder value. It often involves actions such as resisting changes to management or corporate governance structures that could potentially threaten their positions or compensation. While entrenchment can be a form of conflict of interest between managers and shareholders, it is not directly related to managers' compensation being tied to the company's size.

C is incorrect. Excessive risk-taking refers to the situation where managers pursue overly risky strategies in an attempt to maximize short-term gains or meet performance targets, often at the expense of long-term shareholder value. This is more related to managers' incentives to take on excessive risks to achieve certain performance metrics or bonuses rather than their compensation being tied to company size.

© 2014-2024 AnalystPrep.

© 2014-2024 AnalystPrep.

LOS 3b: describe corporate governance and mechanisms to manage stakeholder relationships and mitigate associated risks

Stakeholder management emphasizes the need for a company to consider the needs of all its stakeholder groups. It lays the structure for stakeholder groups to exercise influence, control, and protect their interest in a company.

Corporate governance lays the foundation for the legal, contractual, and organizational infrastructure that defines the rights and responsibilities of each group.

Corporate Reporting and Transparency

The principles of governance are fundamentally based on corporate reporting and transparency. The external shareholders can gain financial and non-financial information through annual reports and other company disclosures.

Investors can obtain a wide range of financial and non-financial data of a publicly traded company through various sources such as annual reports, proxy statements, corporate disclosures, investor relations resources, and others. This information encompasses details about the company's operations, strategic goals, audited financial reports, governance framework, ownership configuration, compensation strategies, transactions with related parties, and associated risks.

Specifically, investors utilize corporate reports and information for the following purposes:

- To evaluate the performance of a company as well as its directors and managers.
- To make decisions regarding valuation and investments.
- To cast votes on crucial corporate issues or changes.
- To verify adherence to legal obligations stipulated in debt agreements.

© 2014-2024 AnalystPrep.

Shareholder Mechanisms

Shareholders are motivated to protect their legal and contractual rights through various procedures that vary depending on businesses and jurisdictions. Some of these procedures are discussed below:

Shareholder Meetings

General meetings allow shareholders to participate in company-related discussions and vote on significant corporate matters.
Companies usually hold an annual general meeting (AGM) within a certain period after the end of their financial year. The primary purpose of an AGM is to present shareholders with a company's annual audited financial statements, provide an overview of a company's performance over the year, and address any shareholder concerns.

It is also possible for a company or its shareholders to convene extraordinary general meetings (EGMs) within the year. This should happen whenever significant resolutions requiring shareholder approval are proposed.

Ordinary resolutions require a simple majority of votes to be passed. These usually relate to the approval of financial statements and the election of directors and auditors. Special resolutions require a supermajority vote, such as 75% of the votes to be passed. Special resolutions are more material in nature. Examples include effecting bylaws amendments and voting on a proposed merger or takeover transaction.

Proxy voting allows shareholders who cannot attend a general meeting to authorize someone else to vote on their behalf. It is the most common form of investor participation in meetings. Minority shareholders tend to use proxy voting in an attempt to increase their influence in companies.

Shareholder Activism

To force a firm to act the desired way, shareholders may employ **shareholder activism**

© 2014-2024 AnalystPrep.

techniques. Increasing shareholder value is an activist shareholder's primary goal.

Shareholder activism can be done by direct corporate **engagement** and **stewardship** to encourage corporate action, forcing management using **proxy fights**, **proposing shareholder resolutions**, and **publicly disclosing the issues of contention**.

Shareholder Litigation

Shareholders can also employ lawsuits. One common type is shareholder derivative lawsuits. **Shareholder derivative lawsuits** are legal actions brought by one or more shareholders against the board of directors, management, or controlling shareholders. The plaintiff shareholder in these actions is deemed to be acting on behalf of the company in lieu of its directors and officers who have failed to act appropriately in the interest of the firm and its shareholders.

Corporate Takeovers

Corporate takeovers are scenarios in which shareholders of a company hire and fire management to achieve better resource utilization. They can be pursued through a **proxy contest** where shareholders are persuaded to vote for a group seeking a controlling position on a company's board. Alternatively, a **tender offer** strategy can be employed. In this case, shareholders sell their interests directly to the group seeking control of a company. Lastly, a **hostile takeover** can be resorted to. This refers to an attempt one company makes to acquire another company without the consent of the company's management.

Creditor Mechanisms

Creditors use many mechanisms to protect their interests in a company. These include:

- **Bond indenture:** This legal document outlines the components of a bond, a company's responsibilities, and bondholders' rights.
- **Creditor committees:** Once a corporation declares bankruptcy, creditor committees

© 2014-2024 AnalystPrep.

are constituted to represent bondholders throughout the bankruptcy process. Their primary brief is to safeguard bondholder interests in any restructuring or liquidation.

Board of Directors and Management Mechanisms

Company shareholders elect a board of directors to provide oversight to a company. A board of directors appoints the top management of a company, is held accountable by shareholders, and is responsible for the overall governance of a company.

Board Committees

The boards usually assign specific tasks to committees drawn from the board members. The core committees include an audit committee, nominating or governance committee, and a compensation or remuneration committee.

The committees are in charge of considering, monitoring and acting on issues related to their competence. A committee regularly reports to the board and makes recommendations. Typical board committees are:

- **Audit committee:** The appointment of external auditors, as well as the implementation of high-quality accounting principles, are all overseen by the audit committee. In addition, this committee ensures the accuracy of the financial statements.
- **Remuneration or compensation committee:** This committee focuses on issues related to compensation. Such issues include defining director and executive remuneration policies, managing the administration, and assessing performance policies. Further, this committee establishes human resources policies regarding employee compensation.
- **Nomination committee:** It oversees director nominations and elections, identifies candidates for senior leadership positions, and maintains the makeup and independence of a board of directors. It is also concerned with the process of

© 2014-2024 AnalystPrep.

nominating and electing board members.

Additional Committees

Other committees include governance committees, risk committees, investment committees, and other industry-specific committees.

- **Risk committee:** It helps the board identify a firm's risk profile and appetite. Besides, it ensures an organization has a suitable enterprise risk management system and coordinates corporate operations with risk appetite.
- **Investment committee:** It examines and assesses the viability of the vital investment options suggested by the management.

Employee Mechanisms

By managing employee relationships, employers may make sure that their staff members can act in the business's best interests, meet their obligations to the organization, and have the requisite motivation to serve in their roles efficiently.

Labor Laws

The rights of employees are primarily secured through labor laws. Labor laws define the standards for employees' rights and responsibilities. The laws cover working hours, pension plans, hiring and firing practices, and vacation and leave entitlements. Unions seek to influence certain matters that affect employees' well-being in their jobs.

Employment Contracts

Employment contracts specify an employee’s rights and responsibilities. However, they do not cover every situation between employees and employers.

Effective human resource policies seek to attract and recruit high-quality employees. Such

© 2014-2024 AnalystPrep.

policies provide remuneration, training or development, and career growth prospects to improve employee retention. Employee Stock Ownership Plans (ESOPs) are also used to retain and motivate employees.

Companies sometimes use Codes of Ethics and business conduct to establish their values and standards of ethical and legal behavior that employees are expected to follow.

Customer and Supplier Mechanisms

Customers and suppliers of a firm enter into contracts that define the goods and services that underlie the relationship, the costs and terms of payment, the rights and obligations of each party, and any guarantees. Contracts also outline the steps to be followed and available options in the event of a contract breach.

Government Mechanisms

Laws and Regulations

Governments and regulators create regulations that businesses must abide by. In addition, governments keep track of how well the regulations are being followed. A stricter regulatory framework is applied to industries whose services and goods are more likely to put the public at risk.

Corporate Governance Codes

Numerous regulatory bodies have implemented corporate governance codes comprised of guiding principles for publicly listed firms. These codes mandate companies to either reveal their compliance with the suggested corporate governance practices or provide reasons for non-compliance, a method known as the “comply or explain” approach.

For instance, in Japan, companies without external directors must provide a rationale for why the appointment of such directors is not suitable.

© 2014-2024 AnalystPrep.

Question

Which of the following is *most likely* a board of a shareholder mechanism used to promote good corporate governance?

A. Bond indenture.
B. Employment contracts.
C. Shareholder derivative lawsuit.

The correct answer is C.

A shareholder derivative lawsuit is a shareholder mechanism used to promote good corporate governance. These are legal actions brought by one or more shareholders against the board of directors, management, or controlling shareholders.

A is incorrect. Bond indentures are credit mechanisms a company's creditors use to protect their interests in a company. It is a legal document that outlines the components of a bond, a company's responsibilities, and bondholders' rights.

B is incorrect. Employment contracts are employee mechanisms used by employees to promote good corporate governance. They specify an employee's rights and responsibilities in a company.

© 2014-2024 AnalystPrep.

LOS 3c: describe potential risks of poor corporate governance and stakeholder management and the benefits of effective corporate governance and stakeholder management;

Weaknesses in corporate governance practices and stakeholder management processes expose a company and its stakeholders to several risks. On the contrary, effective corporate governance and stakeholder management practices can benefit a company's stakeholders.

Adopting effective rules and implementing acceptable control is critical in corporate governance. It breeds stronger business connections, operational efficiency, improved control procedures, and improved financial performance.

Operational Risks and Benefits

Weak Control Systems, Ineffective Decision-making

Businesses with higher inherent risks require more robust controls in order to minimize residual risks. Otherwise, one stakeholder may gain from a company's inadequate control mechanisms and lack of board oversight at the expense of other stakeholders.

It is worth appreciating that a manager with access to more information than directors and shareholders may be able to make better decisions for a firm.

(Adequate) Scrutiny and Control

At all business levels, practical methods for oversight and control are established through solid governance standards. These strategies make it possible to reduce risk factors and fraudulent actions.

Adopting policies for handling conflicts of interest enables a business to maintain fairness. In addition, it prevents any unintended expenses that could result from favoring related parties.

(Improved) Operating Performance

© 2014-2024 AnalystPrep.

Employees are aware of their obligations in organizations that practice effective governance. This is because, in such organizations, there is clarity regarding the delegation of authority and reporting lines. In such organizations, decision-making is easier, and managers have the autonomy they need to seize opportunities.

Legal, Regulatory, or Reputational Risks and Benefits

A company with compliance issues may be subject to legal, regulatory, or reputational concerns, including litigation for contract violations and government or regulatory investigations. These risks might cause the company to incur expensive penalties besides reputation damage.

Financial Risks and Benefits

Debt Default and Bankruptcy

Poor corporate governance can impact a corporation's financial condition, inferior handling of creditors' interests. This can make it difficult for a firm to repay its debts. In turn, failure to settle debts can lead to default and bankruptcy.

(Lower) Default Risk and Cost of Debt

Maximizing shareholder value is a result of sound corporate governance. Additionally, it is attributed to decreased financial and investment risks. Governance structures that aim to control creditor conflicts of interest limit corporate actions. This makes it difficult for a business to pay back its debt. Note that higher credit ratings result from decreased credit risk, which lowers the cost of borrowing.

(Enhanced) Valuation and Stock Performance

Investors are certain that their money is safe thanks to governance systems such as the board of directors and its committees. Disclosing important information promptly and suitably boosts investor confidence and a company's credibility.

© 2014-2024 AnalystPrep.

Question

Which of the following is *likely* an operational risk of poor corporate governance?

A. Default risks.
B. Stock performance.
C. Weak control systems.

The correct answer is C.

Weak control systems may result in managers accessing more information than directors and shareholders. This may result in them taking actions that benefit them at the expense of the shareholders.

A is incorrect. Default risk is a financial risk resulting from a company's inability to pay debt. Companies may take actions that conflict with creditors' interest and ability to make timely debt payments.

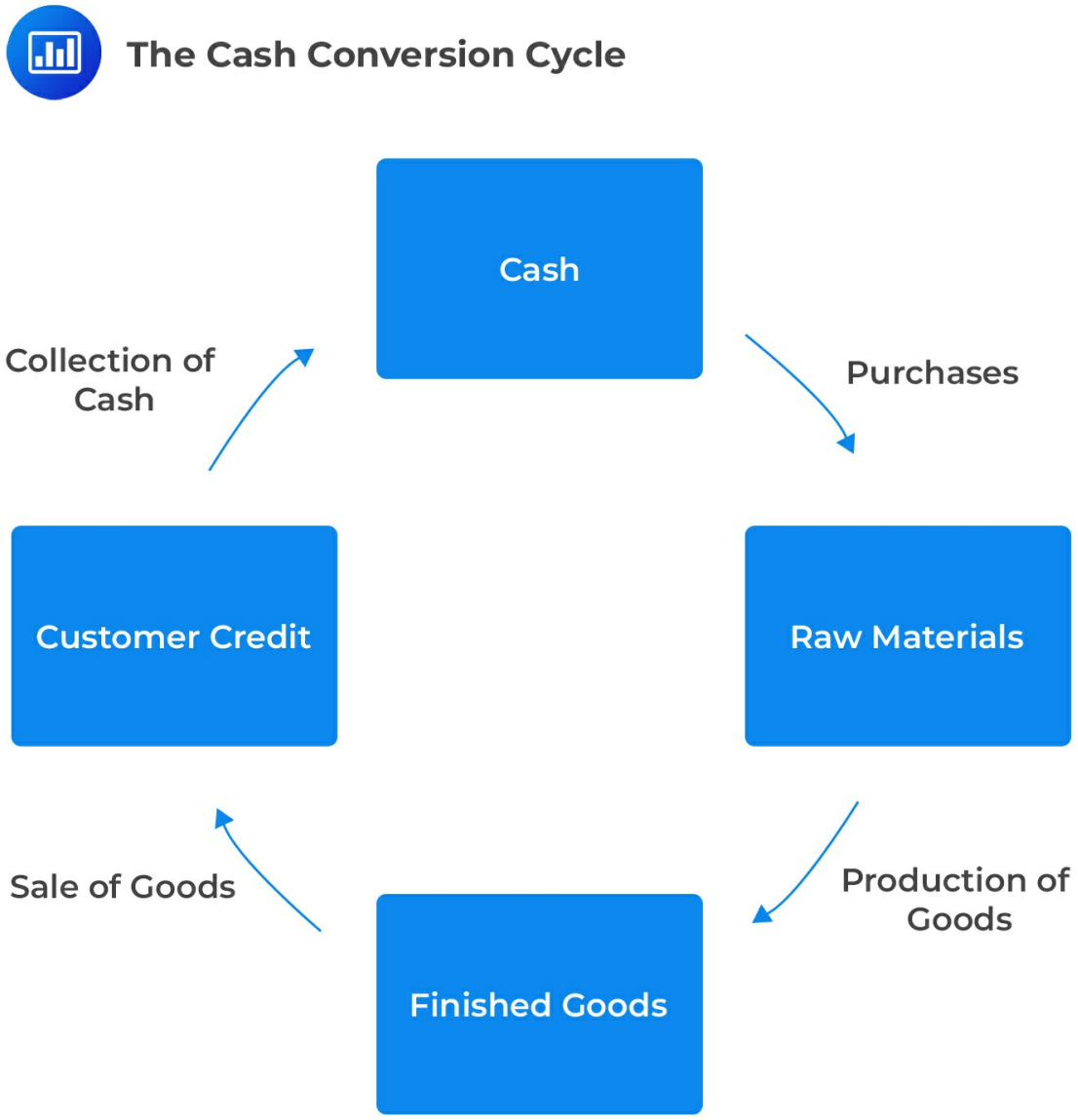
B is incorrect. Stock performance may be poor if the disclosure of the information is neither done in a timely nor suitable manner. This is a type of financial risk.

© 2014-2024 AnalystPrep.

Learning Module 4: Working Capital & Liquidity

LOS 4a: explain the cash conversion cycle and compare issuer's cash conversion cycles

The business operations of a company typically consist of a series of consecutive stages. For example, consider a manufacturing company whose operating cycle includes the purchase of raw materials, inventory production, sale to customers, and debt collection, as shown below:



© 2014-2024 AnalystPrep.

The operating cycle activities of a company results in cash inflows, and outflows will occur at a different times. On the issuer's balance sheet, future cash outflows within the operating cycle are recorded as short-term liabilities (current liabilities), while future cash inflows are recorded as short-term assets (current assets).

Table 1 and 2 contains the definition, recognition, and derecognition of different cash outflows and inflows.

Table 1: Short-Term Assets Information

Short-term Assets	Definition	Recognition	Derecognition
Account receivable	Payment to be collected from customers for services or goods sold.	When goods are sold to customers on credit.	When payment is received from the customer.
Inventory	Cost of goods purchased or produced for sale.	When the issuer takes ownership of the materials, goods, suppliers, and other inventories.	Derecognized when ownership rights are transferred to the customer (sold to the customer)

Exhibit 2: Short-Term Liabilities Information

Short-term Liabilities	Definition	Recognition	Derecognition
Accounts Payable	Payment owed to suppliers for services or goods received.	Recognized when the issuer receives the goods and service, and payment is deferred to the supplier.	When the supplier is paid.

The average duration of each of these short-term accounts can be used to create a timeline for a corporate issuer's operating cycle. Days of inventory on hand (DOH), days payable outstanding (DPO), and days sales outstanding (DSO) are used by analysts to construct the cash conversion cycle.

Cash Conversion Cycle

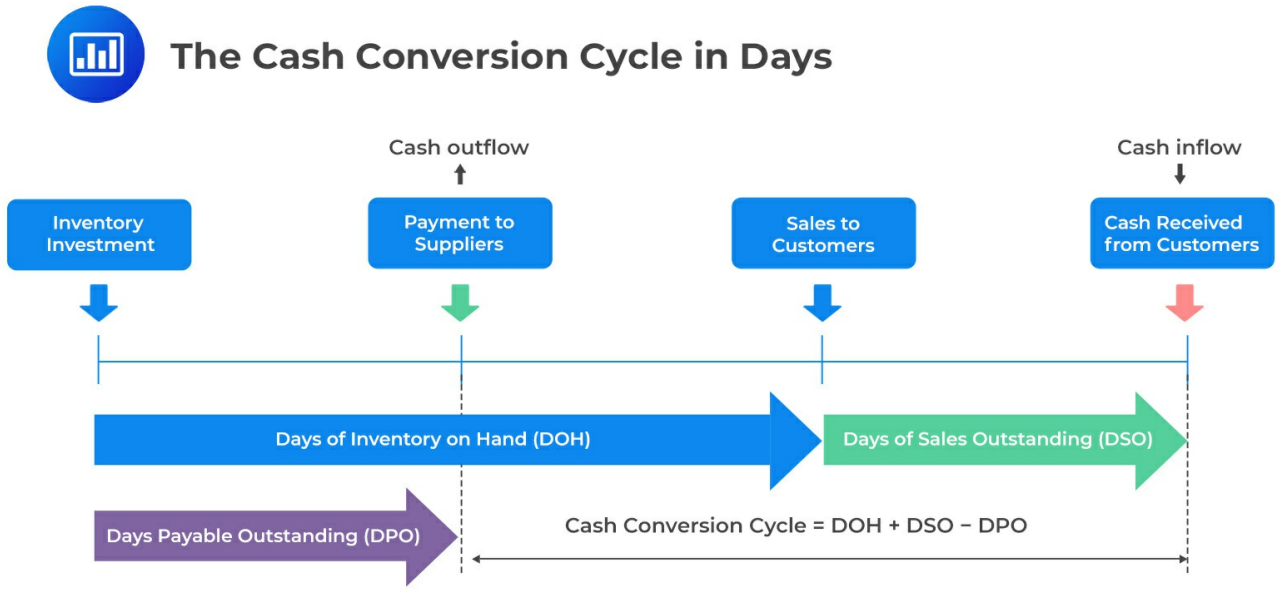
© 2014-2024 AnalystPrep.

The cash conversion cycle is the amount of time between an issuer's payment to its suppliers and receiving cash from customers. In other words, the cash conversion cycle is the time between the derecognition of accounts payable and the derecognition of accounts receivables.

The cash conversion cycle is mathematically expressed as follows:

$$\begin{aligned}\text{Cash conversion cycle} &= \text{Days of inventory on hand} + \text{Days sales outstanding} \\ &\quad - \text{Days payable outstanding} \\ &= \text{DOH} + \text{DSO} - \text{DPO}\end{aligned}$$

From the equation above, the cash conversion cycle can be seen as the number of days it takes for a company to convert inventory investment into cash receipts from customers. Consider the following diagram:



When the cash conversion cycle is longer, the company will need more time to finance the payment of its bills because it has not received cash receipts from customers. For instance, airlines tend to have shorter cash conversion cycles than pharmaceuticals since the latter keeps more inventory.

A short or even negative cash conversion cycle is preferred since the cash can be used to finance other activities reducing the dependence on alternative financing options to fund operations. A

© 2014-2024 AnalystPrep.

negative cash conversion cycle results from a company receiving cash from customers before the suppliers are paid.

Ways of Shortening Cash Conversion Cycle.

Intuitively from the conversion cycle formula, the following are ways a corporate issuer can shorten its cash conversion cycle:

1. **Reducing inventory days on hand (DOH) by:**
    - discontinuing low-demand product lines,
    - negotiating with suppliers to increase the frequency of their deliveries to establish “just in time” inventory levels, and
    - using data analytics to rationalize the stocking levels and improve customer demand forecasts.
2. **Reducing days sales outstanding (DSO) by**
    - tightening credit standards,
    - imposing late fees,
    - offering discounts to early-paying clients,
    - accelerating installment payments, and
    - working with third-party collection agencies.
3. **Increase days payable outstanding (DPO)** by negotiating longer terms for supplier contracts. This method will work by dealing with a preferred supplier offering longer terms if, for example, a company purchases supplies in large volumes.

Comparing Trade Credit and Borrowing from a Bank

Lengthening the days payable outstanding can enhance the cash conversion cycle. However, some suppliers may offer discounts for prompt or early payment. If a company forgoes this

© 2014-2024 AnalystPrep.

discount to extend days payable outstanding, the company is implicitly borrowing from the supplier for the extra days at the cost of the forgone discount.

For example, assume that a company is given the following terms of trade credit: “3/10, net 30”. This implies that a supplier will give the company a 3% discount if the account is paid within 10 days; otherwise, the full amount is due by the 30th day.

Suppose a company decides to forego this discount for a payment in the 30th day. In that case, the company is implicitly borrowing from the supplier for 20 (=30-20) days at a cost equivalent to the foregone discount.

A remedy to this problem is for a corporate issuer to borrow from a bank at a low-interest rate to pay the supplier early to qualify for the discount and repay the bank later. However, we need to calculate the effective annual rate (EAR) of supplier financing and compare it with the bank's EAR on the loan.

The effective annual rate (EAR) of supplier Financing is given by:

$$\text{EAR of Supplier Financing} = \left[\left(1 + \frac{\text{Discount \%}}{100\% - \text{Discount \%}}\right)^{\frac{\text{Days in Year}}{\text{Payment Period} - \text{Discount Period}}} \right] - 1$$

If the effective annual rate of the supplier financing is higher than the interest rate on the bank loan, then the company should borrow from its bank and pay the supplier early, and vice versa.

Example: Comparing Trade Credit and Borrowing from a Bank

Assume that a manufacturing company is given the following terms of trade credit: “2/10, net 30” by one of its suppliers of raw materials. Further, the company lacks enough cash to pay its suppliers to take advantage of the discount.

The company decides to borrow from its local bank at an annual rate of 10% to pay its suppliers before 10 days. Is this a prudent move by the company?

Solution

We need to calculate the effective annual rate on the trade credit:

© 2014-2024 AnalystPrep.

$$\text{EAR of Supplier Financing} = \left[\left(1 + \frac{\text{Discount \%}}{100\% - \text{Discount \%}}\right)^{\frac{\text{Days in Year}}{\text{Payment Period} - \text{Discount Period}}} \right] - 1$$

$$= \left[\left(1 + \frac{2\%}{100\% - 2\%}\right)^{\frac{365}{30-10}} \right] - 1 = 44.59\%$$

Since the effective annual rate of 44.59% on supplier financing is higher than the 10% interest rate on the bank loan, the company should take the bank loan. Consequently, the company retains the cash and pays a lower interest rate on the financing.

Implication of Long Cash Conversion Cycle

A long cash conversion cycle can be an indicator of business model or industry characteristics. However, analysts are concerned about a longer cash conversion cycle than competitors and its lengthening over time. This can be an indicator of poor customer credit quality, declined customer demand, or the loss of bargaining power with suppliers.

Working Capital

In addition to the cash conversion cycle, working capital is also used to measure the efficiency of business operations. A broad measure of working capital is the total working capital defined as:

$$\text{Total working capital} = \text{Current assets} - \text{Current liabilities}$$

Net working capital is a measure of working capital that does not include items minimally associated with the cash conversion cycle or business operations. Such items include cash, marketable securities, and short-term debt.

$$\begin{aligned}\text{Net working capital} &= \text{Current assets}\,(\text{excluding cash and marketable securities}) \\ &- \text{Current liabilities}(\text{excluding short-term and current debt})\end{aligned}$$

Total or net working capital is often expressed as a percentage of sales to control for

© 2014-2024 AnalystPrep.

comparability across firms. The ratio of working capital and cash conversion cycle are interrelated. A long cash conversion cycle is associated with a high working capital-to-sales ratio and vice versa. Industry such as the pharmaceutical industry that hold large inventory due to regulation generally have a high ratio of working capital to sales.

Example: Calculating Total Working Capital and Net Working Capital

Consider the following balance sheet for Company ABC (in $ million):

Cash	150
Marketable securities	400
Accounts receivable	500
Inventory	900
Prepaid expenses	600
PPE	20,000
Total Assets	22,550
Accounts payable:	600
Accrued expenses	80
Short-term debt	1,200
Total liabilities	1,880

Calculate total working capital and net working capital.

$$\text{Total working capital} = \text{Current assets} - \text{Current liabilities}$$

$$\begin{aligned}
\text{Current assets} &= (\text{Cash} + \text{marketable securities} + \text{Accounts receivable} \\
&\quad + \text{Inventory} + \text{Prepaid expenses}) \\
&= 150 + 400 + 500 + 900 + 600 = 2,550 \\
\text{Current Liabilities} &= \text{Accounts Payable} + \text{Accrued Expenses} \\
&\quad + \text{Short term debt} \\
&= 600 + 80 + 1,200 = 1,880 \\
\therefore \text{Working Capital} &= 2,550 - 1,880 = 670
\end{aligned}$$

$$\begin{aligned}
&\text{Net working capital} \\
&= \text{Current assets(excluding cash and marketable securities)} \\
&- \text{Current liabilities(excluding short-term and current debt)} \\
&= [2,550 - (150 + 400)] - [1,880 - (1,200)] = 1,320
\end{aligned}$$

© 2014-2024 AnalystPrep.

Question

Due to limited cash flow, an issuer must decide which supplier terms are the least costly. The credit term with the lowest effective interest rate (EAR) of supplier financing is *most likely*:

A. $\frac{2}{10}$, net 50
B. $\frac{3}{10}$, net 40
C. $\frac{2}{15}$, net 60

Solution

C is correct.

Foregoing a discount offered by the supplier or vendor has an implicit financing cost depending on the amount of the discount forgone and the length of the payment period after the discount period. Calculations of the cost of financing, expressed as an effective annual rate, for each set of credit terms, are as follows:

$$\text{EAR of Supplier Financing} = \left[\left(1 + \frac{\text{Discount \%}}{100\% - \text{Discount \%}}\right)^{\frac{\text{Days in Year}}{\text{Payment Period} - \text{Discount Period}}}\right] - 1$$

$$\text{EAR of } \frac{2}{10}, \text{ net } 50 = \left(\left(1 + \frac{2}{100\% - 2}\right)^{\frac{365}{50-10}}\right) - 1 = 0.2024 \text{ or } 20.24\%$$

$$\text{EAR of } \frac{3}{10}, \text{ net } 50 = \left(\left(1 + \frac{3\%}{100\% - 3\%}\right)^{\frac{365}{40-10}}\right) - 1 = 0.4485 \text{ or } 44.85\%$$

$$\text{EAR of } \frac{2}{15}, \text{ net } 60 = \left(\left(1 + \frac{2}{100}\right)^{\frac{365}{60-15}}\right) - 1 = 0.1780 \text{ or } 17.80\%$$

Therefore, the credit terms with lower EAR of supplier financing ins $\frac{2}{15}$, net 60.

© 2014-2024 AnalystPrep.

LOS 4b: explain liquidity and compare issuers’ liquidity levels

Liquidity is the degree to which a corporation can satisfy its short-term obligations using cash flows and assets that can be quickly converted into cash. In this context, liquidity refers to the available cash, borrowing power, and ability to turn other assets into cash.

Liquidity management describes a company's ability to generate cash whenever it needs to meet its short-term obligations. Effective liquidity management means that a company can manage its significant sources of liquidity efficiently. Although these sources of liquidity tend to vary from one company to another, they include primary and secondary sources of liquidity.

Primary Sources of Liquidity

Primary liquidity sources refer to funds readily accessible to a company at a relatively low cost. They can be held as cash or cash equivalents, and they include the following:

- Cash and marketable securities on hand: The liquidation of near-cash securities, investment income, and bank balances are three examples.
- Borrowings: These consist of a company's short-term investment portfolios, trade credit, and bank lines of credit.
- Cash flow from the business: These are operating cash flows after taxes and fewer short- and long-term investments.

Primary sources of liquidity demonstrate how well an organization's cash management processes are working. The more decentralized a company is, the more limited a firm's free cash flow is. Analysts track an issuer's cash flow information using the statement of cash flows. Analysts can calculate cash flow measures from the statement of cash flows.

1. **Cash flow from operations:** It measures an issuer's primary business activities' cash profit over time, calculated as follows.

   Cash received from customers.

   Plus: Interest and dividends received on financial investments

© 2014-2024 AnalystPrep.

Minus: Cash paid to employees and suppliers

Minus: Taxes paid to governments

Minus: Interest paid to lenders

Cash flows from operations

2. **Free cash flow:** Cash flow from operations does not account for the capital investments an issuer makes to expand or improve operations. Thus, we calculate free cash flow to account for this.

   Cash flows from operations

   Minus: Investments in long-term assets

   Free cash flow

Secondary Sources of Liquidity

Secondary sources of liquidity include:

- Renegotiating debt contracts to reduce high-interest payments or principal repayment burdens.
- Selling assets.
- Reducing or suspending shareholders' dividends.
- Issuing equity through share issuance in private or public markets. The effect is that the existing shareholders' equity will be diluted.
- Filing for bankruptcy protection and reorganization.
- Reducing capital expenditures.

Using secondary sources of liquidity can impact a company's financial and operating positions. In this respect, secondary liquidation sources are unlike primary sources of liquidity, which usually have no such impact. Using secondary sources of liquidity can also signal that a company's

© 2014-2024 AnalystPrep.

financial health is worsening. Consequently, under such circumstances, liquidity is provided at a higher cost than usual.

Drags and Pulls on Liquidity

Drag on Liquidity

The timing of cash receipts and disbursements can significantly affect a company's liquidity position. When receipts infrequently occur, especially after payments are made, a ‘drag on liquidity’ occurs due to the decreased availability of funds. Drags on liquidity include:

1. Uncollected receivables.
2. Obsolete inventory.
3. Borrowing constraints.

Pull on Liquidity

A ‘pull-on liquidity’ occurs when disbursements are paid too early. This is because companies will be forced to spend money before receiving funds from sales. Pulls on liquidity include:

- Early payments.
- Reduced credit limits.
- Limits on short-term lines of credit.
- Low liquidity positions.

Measuring and Evaluating Liquidity

A company's liquidity determines its creditworthiness and capacity to borrow at cheaper rates and with better credit conditions, increasing its flexibility. The less liquid a company is, the more likely a corporation will go bankrupt.

© 2014-2024 AnalystPrep.

The liquidity of a corporation may be evaluated using the following financial ratios:

Liquidity Ratios

Liquidity ratios assist in measuring the ability of a company to satisfy short-term obligations when they fall due. Comparing a company's liquidity ratios with those of peer companies in the same industry can determine the relative creditworthiness of the company.

Common liquidity ratios include:

Current ratio

A company with a positive total working capital is likely to have a current ratio greater than one. A higher current ratio implies greater liquidity under this measure, including short-term assets.

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

Quick ratio

The quick ratio removes the inventory since they are not easy to convert to cash. A firm that can meet its short-term cash obligations without liquidating inventory is likely to have a quick ratio greater than one.

$$\text{Quick ratio} = \frac{\text{Cash} + \text{Short term marketable instruments} + \text{Receivables}}{\text{Current liabilities}}$$

Cash Ratio

The cash ratio compares short-term marketable securities and cash with current liabilities. A cash ratio greater than or equal to one indicates that a firm could meet all its short-term obligations without collecting receivables or waiting to sell inventory.

$$\text{Cash ratio} = \frac{\text{Cash} + \text{Short term marketable instruments}}{\text{Current liabilities}}$$

© 2014-2024 AnalystPrep.

Example: Calculating Liquidity Ratios

Consider the following balance sheet for Company ABC (in $ million):

Cash	150
Short-term marketable securities	400
Accounts receivable	500
Inventory	900
Prepaid expenses	600
PPE	20,000
Total Assets	22,550
Accounts payable:	600
Accrued expenses	80
Short-term debt	1,200
Total liabilities	1,880

Calculate the current ratio, quick ratio, and cash ratio.

Solution

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} = \frac{2,250}{1,880} = 1.20$$

$$\text{Quick ratio} = \frac{\text{Cash} + \text{Short term marketable instruments} + \text{Receivables}}{\text{Current liabilities}}$$
$$= \frac{150 + 400 + 500}{1,880} = 0.56$$

$$\text{Cash ratio} = \frac{\text{Cash} + \text{Short term marketable instruments}}{\text{Current liabilities}}$$
$$= \frac{150 + 400}{1,880} = 0.29$$

© 2014-2024 AnalystPrep.

Question

Which of the following are *most likely* primary sources of liquidity?

A. Negotiating debt contracts and liquidating assets.
B. Ready cash balances and short-term funds.
C. Filing for bankruptcy and cash flow management.

Solution

The correct answer is B.

Readily available cash balances and short-term funds are examples of primary sources of liquidity.

A is incorrect. Negotiating debt contracts and liquidating assets are examples of secondary sources of liquidity.

C is incorrect. Whereas cash flow management is a primary source of liquidity, filing bankruptcy is a secondary source of liquidity.

© 2014-2024 AnalystPrep.

LOS 4c: describe issuers’ objectives and compare methods for managing working capital and liquidity;

The main objective of liquidity and working capital management is to maximize the value of a firm while ensuring ready access to capital to pay creditors and for day-to-day operations. To accomplish this, reducing the cash conversion cycle, gauging liquidity requirements, and reducing surplus funds is essential. This ensures the company can divert money to profitable ventures or give it back to shareholders while aligning with its business framework.

Different industries and businesses within the same industry have different working capital requirements. Manufacturing businesses with complex production processes may require holding inventory for extended periods, while distributors of less complex goods may have minimal inventory. Retail businesses with multiple sales locations and credit sales require more working capital in inventories and accounts receivable.

Service and software businesses generally have lower working capital requirements as they don't have inventories and receive upfront payments.

Working Capital Management

Firms approximate working capital requirements based on revenue. Moreover, firms forecast future working capital requirements based on future revenue forecasts. While estimating the working capital requirements, firms usually do the following:

- Differentiating **permanent** and **variable** current assets. Permanent current assets include base levels of inventory, staffing, and receivables, which are usually constant over time. Variable current assets are additional inventory and labor required at peak production and sales or growth phase.
- Weighing the cost against the benefits using different inventory and receivables policies. For instance, easy credit policies may result in high billing costs and payment delinquencies.

© 2014-2024 AnalystPrep.

Working Capital Management and Funding Method

Businesses adopt various strategies regarding the magnitude of their current assets and the type of financing they use to sustain those assets. They include:

Conservative Approach

A conservative approach entails maintaining a higher proportion of inventory, cash, and receivables relative to sales and leaning more toward long-term financing. While this method offers optimal financial adaptability to cater to its requirements, it comes at a higher cost. Organizations in their early-stage growth stage tend to gravitate towards this approach due to restricted short-term borrowing options.

Firms may choose a conservative working capital strategy for the following reason:

I. Lesser dependence on capital during market stress.
II. Anticipation of flat or increasing interest rates
III. Avoidance of rollover risk of short-term debt in favor of cash flow stability.
IV. The higher financing costs are perceived to be offset by the benefits of greater certainty and permanent capital.

Advantages of the conservative working capital approach

- Permanent, stable financing prevents the risk of rollover associated with short-term debt.
- The costs of financing are known in advance
- Working capital required to buy inventory is certain.
- Short-term cash needs to service debts are reduced due to extended payment terms.
- More significant cash or marketable securities positions provide greater flexibility during market disruptions.

Disadvantages of the conservative working capital approach

© 2014-2024 AnalystPrep.

- Higher interest rates due to the use of long-term debt.
- High equity cost.
- The opportunity to borrow on need be basis is eliminated by permanent financing.
- Establishing the financing position often requires a longer lead time.
- Business operations may be restricted by long-term debt.

Aggressive Working Capital Approach

In an aggressive strategy, a company aims to limit surplus cash, receivables, and inventory relative to sales and leans more towards short-term financing to cater to both fluctuating and constant working capital requirements.

Intuitively, by allocating fewer dedicated resources to current assets, the company trades off short-term financial flexibility for increased investor returns.

Working capital policies may be more aggressive in industries with lower profit margins to gain a cost advantage over competitors. When markets are stressed, a firm is more susceptible to debt rollover risk when relying more on short-term financing than a conservative approach.

Firms may choose an aggressive working capital approach for the following additional reasons.

I. Ability to predict future sales and cash requirements with high accuracy.
II. Anticipation of decreasing or stable interest rates.
III. Expectation that the firm will reduce its cash conversion cycle by decreasing the duration of its accounts receivable and inventory periods while lengthening its accounts payable period.
IV. Ability to minimize accounts receivable and quickly liquidate inventory.

Advantages of an aggressive working capital approach

- Low financing cost
- Interest expense is low due to the flexibility of borrowing on a need-be basis.

© 2014-2024 AnalystPrep.

- Fewer restrictions on business operations due to the use of short-term debt.
- If rates fall, it is easier to refinance.

Disadvantages of an aggressive working capital approach

- As rates of short-term financing change, interest expense may fluctuate.
- Higher short-term cash needs may arise to settle debt maturities.
- The refinance risk associated with short-term debt heightens the threat of bankruptcy, especially during market upheavals.
- If refinancing on favorable terms is unattainable, there might be a need to depend on pricier trade credit, restrict customer credit, or liquidate receivables.

Moderate Working Capital Approach

Moderate working capital approaches balance long-term financing for permanent current assets with short-term debt for variable assets. Moderate working capital strategies have lower financing costs and refinancing risks than aggressive approach.

Additionally, these firms can use long-term debt and equity to support permanent needs in addition to reducing working capital. A firm might pursue a moderate approach to working capital management include the following reasons:

I. Capability to precisely predict fundamental current asset needs, though there's less assurance regarding fluctuating demands.
II. Lower financing expenses compared to a conservative strategy, coupled with decreased refinance risk and enhanced financial flexibility compared to an aggressive approach.
III. To achieve a balance between the use of less costly short-term financing and the security of permanent working capital backed by long-term financing.

Advantages of moderate working capital approach

- Lower risk compared to the aggressive approach and lower financing cost than the

© 2014-2024 AnalystPrep.

conservative approach.

- The flexibility to increase financing for varying requirements or expansion when necessary.
- With a more disciplined approach to balance sheet management, thus diversified sources of funding.

Disadvantages of moderate working capital approach

- Limited access to short-term capital needed for growth or seasonal needs.
- During the market disruption, the cost of short-term debt for variable needs may be uncertain.
- If the company cannot refinance at a favorable rate, it may have to rely on more expensive trade credit to meet seasonal or growth requirements.

Liquidity and Short-Term Funding

Companies can boost their financial flexibility by crafting a short-term financing strategy and routinely evaluating available funding alternatives. Firms that neglect to thoroughly explore these options or capitalize on cost savings from existing forms of financing may encounter higher financing costs or even financial distress, where they find themselves incapable of borrowing from any source.

An astute short-term financing strategy, encompassing decisions on when and how to borrow, accomplishes several goals, such as:

- Ensuring enough and varied sources of credit to fund ongoing cash requirements.
- Obtaining sufficient financing capability to address the company's evolving cash demands, which might encompass catering to peak seasonal requirements or anticipated expansion.
- Ensuring that the provided financing rates, along with their terms and conditions, are

© 2014-2024 AnalystPrep.

competitive and recognizing how these rates may vary in different capital market scenarios and economic climates.

- Making sure that both implicit costs, such as supplier financing costs and explicit funding expenses, are taken into account when determining the company's actual borrowing cost.

Several factors will influence a company's short-term borrowing strategies:

- **Size:** The size of a company plays a pivotal role in defining its financing options. For instance, privately-owned businesses might only have access to short-term credit boosts from one bank. In contrast, substantially larger firms can tap into short-term fixed-income markets in addition to other funding avenues.
- **Creditworthiness:** The credibility of a company not only dictates if a financial institution will grant a loan and the interest rate charged but also the terms and stipulations tied to the loan. A company with lesser creditworthiness might find lenders imposing conditions that limit its asset utilization in specific ways.
- **Legal considerations:** Companies operating in emerging markets, where legal frameworks might be less established, could face limited financing choices from financial intermediaries or markets compared to developed economies.
- **Regulatory requirements:** Certain industries, especially in developed markets, are subject to stringent regulations. For instance, banks or utilities might encounter restrictions in their borrowing amount or the nature of available borrowing options.
- **Asset nature:** Companies, based on their business model, might possess assets like inventory, which can be deemed valuable collateral for secured short-term loans.

© 2014-2024 AnalystPrep.

Question

Which of the following factors will *least likely* influence a company's short-term borrowing strategies?

A. Size and creditworthiness.
B. Legal and regulatory considerations.
C. Capacity to handle sudden cash needs.

Solution

The correct answer is C.

Ensuring the capacity to handle sudden cash needs is an objective of a short-term borrowing strategy.

A is incorrect. Size and creditworthiness are factors influencing a company's short-term borrowing strategy. A company's size influences the options at its disposal, while its creditworthiness influences the interest rate it will pay.

B is incorrect. Legal and regulatory considerations influence a company's short-term borrowing strategy since there may be regulatory restrictions on the amount a company can borrow.

© 2014-2024 AnalystPrep.

Learning Module 5: Capital Investments and Capital Allocation

LOS 5a: describe types of capital investments

Capital investments (or capital projects) are investments with a life of one or more years. They are presented on the balance sheet as long-term assets.

There are four main types of capital investments:

1. Going concern (or maintenance) projects.
2. Regulatory or compliance projects.
3. Expansion projects.
4. New lines of business and other projects.

While growth projects and other projects are initiated to develop a firm strategically, going concern (or maintenance) projects and regulatory or compliance projects ensure business continuation.

Going Concern Projects

These are projects required to sustain current operations, keep a firm at its current size, or boost business efficiency. Infrastructure improvement is an example of a going concern project. Firm management quickly assesses going concern projects since the expenses they attract are mostly lower than the production or business interruption costs that may arise from failure to invest.

Managers frequently attempt to align financing to an asset's lifespan to pay for these projects (match funding). For instance, to finance equipment replacement with a 20-year projected useful life, a business may issue a 20-year bond.

Corporations do not disclose capital expenditure costs related to going concern projects in financial statements. Analysts often use the depreciation and amortization expense shown on the income statement as a proxy for going concern capital expenditure.

© 2014-2024 AnalystPrep.

Regulatory or Compliance Projects

These projects are usually undertaken due to a requirement by a governmental agency, insurance company, or some other external party. They often do not generate revenue for a company. Instead, however, they generate regulatory or compliance expenditures. This can be an obstacle to entry into a market, which could benefit incumbents. Nevertheless, in some instances, it may be more prudent to shut down part of the business related to the project, e.g., factory pollution control installation.

Expansion Projects

Projects that increase a firm's size come with higher risk and uncertainty than going-concern projects. An example would be a merger and acquisition. There are two significant risks with acquisitions: the difficulty in integrating the business operations of the acquirer and the target. In addition, there is the risk of overpaying.

Companies with a track record of successful expansions are more likely to use debt to finance their expansion projects. Capital investment is necessary when an established company expands its size by introducing a new product line, service, etc.. The business scope expansion often takes advantage of the existing ability to take care of the needs of different customers.

When gauging the probability of success, analysts and investors look at the past performance of peers executing the same strategy and the company's competitive position.

New Lines of Business and Other Projects

Projects beyond a company's traditional business areas include high-risk investments and new growth efforts, e.g., innovation projects. These initiatives are probably on the riskier end of the capital investment spectrum.

© 2014-2024 AnalystPrep.

Question

Which of the following projects is *most likely* considered the riskiest?

A. Other projects.
B. Regulatory projects.
C. Going concern projects.

The correct answer is A.

Other projects are considered the riskiest. These projects are beyond a company's traditional business area and include high-risk investments and new growth efforts, e.g., exploration investments into innovations.

B is incorrect. Regulatory or compliance projects are undertaken due to a regulator or government agency requirement. They do not generate any revenue for a company. However, it incurs compliance expenditure.

C is incorrect. Going concern projects are required to sustain current operations. This involves keeping the firm at its current size or boosting efficiency. These projects are not risky since they are already in operation.

© 2014-2024 AnalystPrep.

LOS 5b: describe the capital allocation process, calculate net present value (NPV), internal rate of return (IRR), and return on invested capital (ROIC), and contrast their use in capital allocation

Capital allocation describes the process companies use to make decisions on capital projects, i.e., projects with a lifespan of one year or more. It is a cost-benefit exercise that seeks to produce results and benefits greater than the costs of capital allocation efforts.

There are several steps involved in the capital allocation process. However, the specificity of the procedures a manager adopts depends on factors such as the manager's position in the company, the size and complexity of the project being evaluated, and the company's size.

Capital Allocation Process

The typical steps involved in the capital allocation process are:

1. **Idea generation:** Ideas can come from any source, but management must have a concrete grasp of the competitive environment in which the potential investment exists, along with the company's current operations, competencies, and competitive position.
2. **Investment analysis:** Information is gathered, which helps forecast cash flows for each project and evaluate a project's profitability.
3. **Planning and prioritization:** This involves looking at project timing, scheduling, prioritizing, and coordinating.
4. **Monitoring and post-investment review:** A project's performance is assessed, and actual results (revenues, expenses, cash flows, etc.) are compared with planned or projected results.

Methods of Evaluating Capital Investments

Several essential decision criteria are used to evaluate capital investments. The two most comprehensive and well-understood measures of whether or not a project is profitable are the net present value (NPV) and the internal rate of return (IRR).

© 2014-2024 AnalystPrep.

Moreover, Analysts can utilize consolidated financial statements to compute and evaluate the return on invested capital (ROIC). ROIC serves as a valuable overall return metric instead of a project-specific return measure.

Net Present Value (NPV)

The net present value (NPV) of a project is the potential change in wealth resulting from the project after accounting for the time value of money. The NPV for a project with one investment outlay made at the start of the project is defined as the present value of the future after-tax cash flows minus the investment outlay.

$$NPV = CF_0 + \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \ldots + \frac{CF_T}{(1+r)^T}$$

$$NPV = \sum_{t=0}^{T} \frac{CF_t}{(1+r)^t}$$

Where:

CF_T = After-tax cash flow at time t

r = Required rate of return for the investment

CF_0 = Investment cash flow at time zero

Many projects have cash flow patterns in which outflows occur at the start of the project (at time = 0) and future dates. In these instances, a better formula to use is:

- to invest in the project if $NPV > 0$;
- not to invest in the project if $NPV < 0$; and
- stay indifferent if $NPV = 0$.

In other words, positive NPV investments increase wealth, while negative NPV investments decrease wealth.

Example: Net Present Value of a Project

© 2014-2024 AnalystPrep.

Suppose Company A is considering an investment of $100 million in a capital expansion project that will return after-tax cash flows of $20 million per year for the first three years and another $33 million in year 4, the project's final year. If the required rate of return for the project is 8%, what would the NPV be, and should the company undertake this project?

$$\begin{aligned} \text{NPV} &= -100 + \frac{20}{1.08^1} + \frac{20}{1.08^2} + \frac{20}{1.08^3} + \frac{20}{1.08^4} \\ \text{NPV} &= -100 + 18.519 + 17.147 + 15.877 + 24.256 \\ &= -\$24.202 \text{ million} \end{aligned}$$

Since the $\text{NPV} < 0$, the project should not be undertaken.

Internal Rate of Return

The internal rate of return (IRR) is the discount rate that makes the net present value (NPV) of all cash flows from a particular project equal to zero. For a project with one initial outlay, the IRR is the discount rate that makes the present value of the future after-tax cash flows equal to the investment outlay.

The IRR solves the equation:

$$\text{NPV} = \sum_{t=0}^{T} \frac{\text{CF}_t}{(1+\text{IRR})^t} - \text{Outlay} = 0$$

It looks very much like the NPV equation except that the discount rate is the IRR instead of r, the required rate of return. Discounted at the IRR, the NPV is equal to zero.

The decision rule for the IRR is:

- to invest in the project if the IRR exceeds the required rate of return for the project, i.e., invest if $\text{IRR} > \text{r}$; and
- not to invest if $\text{IRR} < \text{r}$.

In instances where the outlays for a project occur at times other than time 0, a more general form of the IRR equation is:

© 2014-2024 AnalystPrep.

$$\sum_{t=0}^{T} \frac{CF_t}{(1+IRR)^t} = 0$$

Example: IRR of a project

Here is a follow-up on the above NPV example. If company A is considering an investment of $100 million in a capital expansion project that will return after-tax cash flows of $20 million per year for the first three years and another $33 million in year 4, the final year of the project, what is the IRR for this project and should it be undertaken given that the required rate of return for the project is 8%?

Solve IRR in the following equation:

$$-100 + \frac{20}{(1+IRR)^1} + \frac{20}{(1+IRR)^2} + \frac{20}{(1+IRR)^3} + \frac{33}{(1+IRR)^4} = 0$$

The solution can be arrived at through trial and error. However, a more straightforward approach is to use a financial calculator using the following steps:

Step 1: Entering the Initial Cash Outlay

Press the Cash Flow [CF] key to open the cash flow register. The calculator should read CF0=, which tells you to enter the cash flow for time 0. Since you need to send cash out of the company to make the initial $100 investment, this value has to be negative. Type in -100 for CF0, and hit the [ENTER] key.

Step 2: Entering the Cash Inflows

Next, enter the cash flow values for the subsequent periods. This is done by hitting the down arrow *once*. The calculator should read CF1=. Type in the first cash flow amount, 20, and hit [ENTER]. The calculator should now say C01=20.

To enter cash flow from Year 2, hit the down arrow *twice*. The calculator should read CF2=. If it says F1=, hit the down arrow one more time.

Type in the second year's cash flow, 20, and hit [Enter]. The calculator should read CF2=20. Hit the down arrow *twice* again and do the same thing for the third cash flow period, CF3.

© 2014-2024 AnalystPrep.

Do this once more and enter the last cash flow for the last time, 33.

Step 3: Calculating the IRR

Once the cash flow values have been fed into the calculator, you can calculate the IRR.

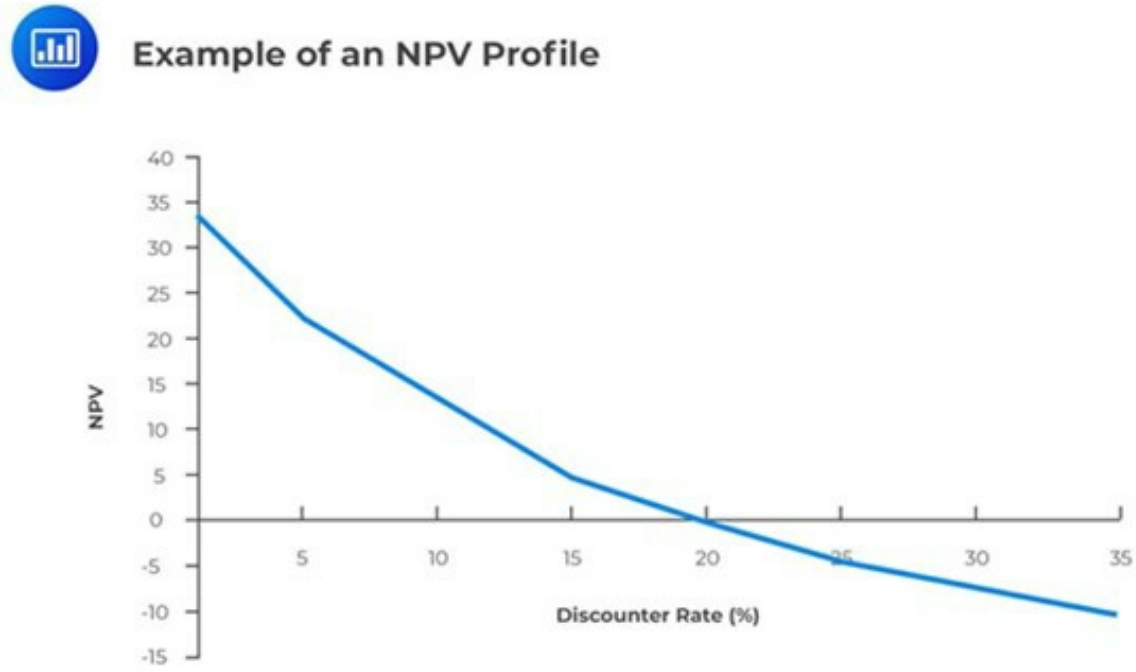
To do this, press the [IRR] key. The screen will read IRR=0.000. To display the IRR value for the data set, press the [CPT] key at the top left corner of the calculator. If you have followed this process correctly, the calculator will display the correct IRR. The IRR is computed to be -2.626%. Since $-2.626\% < 8\%$, the project should not be undertaken.

Simply computing a project's NPV and IRR to determine which of several projects to undertake is not always as straightforward as it seems. The IRR and NPV can produce different ranking outcomes whenever mutually exclusive projects are involved. Other challenges may occur.

Graphical Illustration

The NPV Profile illustrates a project's NPV graphed as a function of various discount rates. The NPV values are graphed on the vertical or y-axis, while the discount rates are graphed on the horizontal or x-axis.

© 2014-2024 AnalystPrep.



- The graph crosses the y-axis (vertical axis) when the discount rate = 0%; and
- The graph crosses the x-axis (horizontal axis) when the NPV = 0 and the discount rate is the IRR.

NPV and IRR Comparison

For independent, conventional projects, the NPV and IRR decision rules will draw the same conclusion on whether to invest. However, in the case of two mutually exclusive projects, sometimes the decision rules will draw different conclusions. For example, project X might have a more significant NPV than Project Y, but Project Y might have a larger IRR. This conflict usually stems from differences in the cash flows of the two projects, which leads to a different ranking between the NPV and IRR. Whenever this conflict arises, the NPV, not the IRR, should be used to select which project to invest in.

Another circumstance that may cause mutually exclusive projects to be ranked differently according to NPV and IRR criteria is the scale or size of the project.

© 2014-2024 AnalystPrep.

Multiple IRR and No IRR Problem

Although rare, a project can have more than one IRR or no IRR at all. Multiple IRRs, however, cannot occur for conventional projects with outlay followed by cash inflows. Still, they may occur for non-conventional projects with cash flows that change signs (negative, positive) more than once during the project's life.

The net present value (NPV) and the internal rate of return (IRR) are both techniques that can be used by financial institutions or individuals when making major investment decisions. Each method has its strengths and weaknesses. However, the net present value method comes out on top, and here's why. NPV and IRR yield the same investment decisions when dealing with independent projects. By independent, we mean that deciding to invest in one project does not rule out or affect investment in the other project.

However, the challenge comes when the projects are mutually exclusive. If two or more projects are mutually exclusive, the decision to invest in one project precludes investment in all the others. With such projects, the IRR method may provide misleading results if used in isolation.

Shortcomings of IRR

As seen, there are some problems associated with the IRR method:

- The method assumes that all proceeds from a project are immediately reinvested in projects offering a rate of return equal to the IRR – this is very difficult in practice.
- It gives different rankings when the projects under comparison have different scales.
- Sometimes, the method may not provide a unique solution, especially when a project has a mixture of positive and negative cash flows during its productive life.

Return on Invested Capital

Return on capital invested (ROIC), also known as return on capital employed (ROCE), is a measure of profitability for total capital invested by management.

© 2014-2024 AnalystPrep.

The formula is as follows.

$$\begin{aligned}\text{ROIC} &= \frac{\text{After-tax operating profit}_t}{\text{Average invested capital}} \\ &= \frac{(1 - \text{Tax rate}) \times \text{Operating profit}_t}{\text{Average total Long Term liabilities and equity}_{t-1,l}}\end{aligned}$$

Working capital is not included in the total capital investment. Invested capital includes long-term liabilities and equity.

Benefits of ROIC

- It can be calculated by independent investment analysts because the data is readily available, unlike IRR and NPV.
- ROIC considers the amount of capital the company needs to generate returns, unlike other profitability measures such as operating profit margin.

The link between ROIC is as follows:

$$\begin{aligned}\text{ROIC} &= \frac{\text{After-tax operating profit}_t}{\text{Average invested capital}} \\ &= \frac{\text{After-tax operating profit}_t}{\text{Sales}} \times \frac{\text{Sales}}{\text{Average invested capital}} \\ &= \text{After-tax operating margin} \times \text{Capital turnover}\end{aligned}$$

Therefore, two factors that influence ROIC are profit margin and turnover. This implies that a company with a high margin can have a low ROIC if the turnover is low and vice versa.

Example: Calculating ROIC

Consider the following excerpt of the balance sheet information of a company:

Liabilities and Equity	20X1	20X2
Accounts payable	37,500	52,800
Short-term debt	22,000	6,500
Long-term debt	113,000	107,500
Share capital	16,000	16,000
Retained earnings	150,000	162,500
Total liabilities and equity	338,500	345,300

© 2014-2024 AnalystPrep.

If the company reported an operating profit in year 20X2 of 30,500, the ROIC for the year 20X2 if the tax rate is 30% is closest to:

$$\begin{aligned}\text{ROIC} &= \frac{\text{After-tax operating profit}_t}{\text{Average invested capital}} \\ &= \frac{(1-\text{Tax rate}) \times \text{Operating profit}_t}{\text{Average total Long Term liabilities and equity}_{t-1,l}} \\ &= \frac{(1-0.3) \times 30,500}{\frac{(113,000+16,000+150,000)+(107,000+16,000+162,000)}{2}} = 0.07570 \approx 7.60\%\end{aligned}$$

Comparison between ROIC, IRR, and NPV

- Unlike IRR and NPV, ROIC allows analysts to measure the firm's ability to create value across all investments, not just individual projects. This is important because only the company can invest in individual project and not the investors.
- ROIC can be compared to the required rate of return of the investors. If the ROIC of a corporate issuer is higher than the required rate of return, then the issuer is creating value for investors. On the other hand, if the investors' required rate of return is less than an issuer's ROIC over time, then it suggests that investors might have benefited more from investing in other opportunities.In such cases, the issuer should consider enhancing turnover or profit margins, divesting from underachieving sectors, redistributing capital, or exploring other investment opportunities with higher yields.
- ROIC can be compared to the required rate of return for both equity and debt investors because it measures the return that an issuer will earn by investing in both equity and debt.

Limitations of ROIC

- Unlike IRR and NPV, ROIC is an accounting measure and not a cash-based measure. Thus, cash flows and operating profit can be materially different because of differences between capital expenditures and depreciation and the recognition rules of certain items.

© 2014-2024 AnalystPrep.

- ROIC is backward-looking and can vary from year to year, depending on investment activity and business conditions.
- Due to its high aggregation, ROIC can obscure unprofitable or profitable areas of the issuer.

© 2014-2024 AnalystPrep.

Question 1

You have been provided with the following cash flows for a capital project:

Year	0	1	2	3	4	5
Cash flow ($)	−50,000	10,000	10,000	15,000	15,000	15,000

Given a required rate of return of 8 percent, the NPV and IRR of the project are *closest* to:

A. NPV: $1,023; IRR: 10.64%.

B. NPV: $974; IRR: 8.68%.

C. NPV: $2,400; IRR: 7.12%.

Solution

The correct answer is B.

$$\text{NPV} = -50,000 + \frac{10,000}{1.08^1} + \frac{10,000}{1.08^2} + \frac{15,000}{1.08^3} + \frac{15,000}{1.08^4} + \frac{15,000}{1.08^5}$$

$$\text{NPV} = -50,000 + 9259.26 + 8573.39 + 11,907.48 + +11,025.45 + 10,208.75$$

$$= \$974.33 \text{ million}$$

Question 2

In an NPV profile, the point at which the profile crosses the x-axis is best described as:

A. The project's IRR.

B. The point at which the NPV is highest.

C. The point at which the discount rate = 0% and the NPV is the sum of the undiscounted cash flows for the project.

Solution

© 2014-2024 AnalystPrep.

The correct answer is A.

At the horizontal axis, the NPV = 0, and by definition, this occurs whenever the discount rate is the IRR.

Question 3

Suppose you have three independent projects – X, Y, and Z. Assume the hurdle rate is 12% for all three projects. Their NPVs and IRRs are shown below.

	Project X	Project Y	Project Z
NPV	$\$20,000$	$\$21,400$	$\$23,000$
IRR	20%	32%	18%

Assuming the projects are mutually exclusive, which of the following is the *most* economically feasible project?

A. Z

B. X

C. Y

Solution

The correct answer is A.

	Project X	Project Y	Project Z
NPV	$\$20,000$	$\$21,400$	$\$23,000$
IRR	20%	32%	18%
Decision	Accept	Accept	Accept

If the IRR criteria is used, all three projects would be accepted because they would all increase shareholders' wealth. Their NPVs are all positive, and the three are all acceptable.

However, only one would be chosen if the projects are mutually exclusive. If one were to pick one project based on internal rates of return of the projects, one would go for

© 2014-2024 AnalystPrep.

Y. This is because its IRR is the highest compared to the other projects.

This decision would be wrong when we consider the sizes of the NPVs of the projects. While Y has the highest IRR, its NPV is lower than Z's. The best decision would be to go for the project with the highest NPV, and that is project Z. Therefore, if projects are mutually exclusive, the NPV method should be applied.

© 2014-2024 AnalystPrep.

LOS 5c: describe principles of capital allocation and common capital allocation pitfalls

Capital Allocation Principles

Although the known analytical tools and investment decision criteria are quantitative and clear-cut, there is significant room for errors and misjudgments. To enhance the decision-making process, it is essential to adhere to certain fundamental capital allocation principles when employing these tools. They include:

- **Focus on additional cash flows with a broad perspective**: It's essential to consider only the extra cash flows generated by an investment while also taking into account their wider impact on the company. This means excluding any expenses that have already been incurred, known as sunk costs, but including both positive and negative effects on other parts of the business.
- **Importance of cash flow timing:** The timing, duration, variability, and potential changes in the direction of expected cash flows are critical factors to consider. These aspects can significantly influence the net present value (NPV) and internal rate of return (IRR) of a capital investment.
- **Consideration of after-tax cash flows:** When making capital allocation decisions, it's important to analyze cash flows on an after-tax basis. This approach ensures that the tax implications, including benefits from non-cash deductions like depreciation, are properly accounted for in the analysis.

Capital Allocation Pitfalls

Some of the common capital allocation pitfalls or mistakes are:

Cognitive errors in capital allocation

1. **Internal Forecasting Errors:** Companies may make internal forecasting errors that are

© 2014-2024 AnalystPrep.

hard, if not impossible, for external analysts to spot. Consequently, this might lead to unsuccessful investment results. A common one is using a company's overall cost of capital rather than an investment's required rate of return.

2. **Ignoring costs of internal financing:** Cash flows from operations are the primary financing source for investments by large corporate issuers. Management treats internally generated funds as scarce but accessible, and the funds are allocated according to the budget. External financing is only used to fund large transactions such as acquisitions. The management's viewpoint is flawed because internally generated capital is equity financing since it would be returned to equity investors as dividends. While a share issue does not raise it, the funds are withheld from equity investors, incurring their opportunity costs.
3. **Inconsistent treatment of or ignoring inflation:** In several ways, capital allocation is affected by inflation. It should be stated if investment analysis uses real or nominal terms. Companies are at liberty to perform analysis in real or nominal terms, but they should use a consistent approach for cash flows, and discount rates should be used.

Behavioral biases in capital allocation

1. **Inertia:** By comparing the current capital investment to the amount from the previous year and the return on investment, analysts can determine the presence of inertia. An analyst should evaluate an issuer’s justification for its capital investment. Further, they should consider if the management should contemplate alternate uses if capital spending each year is either stagnant or rising despite declining returns on investment.
2. **Basing Investment Decisions on EPS, Net Income, or ROE:** Even for those with a high NPV, many investments do not increase earnings per share (EPS), net income, or return on equity (ROE) in the short run. Since managers often have short-term incentives, they may choose projects not aligning with the company's long-term interests.
3. **Pushing Pet Projects:** These are projects that influential managers want the company to invest in even though they may not be profitable. Often, managers exaggerate these projects' profitability to ensure they are selected.
4. **Failing to Consider Investment Alternatives or Alternative States:** The most basic

© 2014-2024 AnalystPrep.

phase in the capital allocation process is the generation of solid investment ideas. In some organizations, however, many good alternatives are never even explored. Furthermore, many businesses overlook real-world conditions, which should be considered through breakeven, scenario, and simulation analyses.

© 2014-2024 AnalystPrep.

Question

Which of the following statements is *most likely* accurate?

A. In capital allocation, only pre-tax cash flows should be considered.
B. The timing of cash flows is crucial to the capital allocation process.
C. A non-conventional cash flow pattern has an initial cash outflow followed by a series of cash inflows.

The correct answer is B.

Capital allocation analysts make an extraordinary effort to detail precisely when cash flows occur.

A is incorrect. Cash flows are analyzed after tax; taxes must be fully reflected in capital allocation decisions.

C is incorrect. A conventional cash flow pattern (not a non-conventional cash flow pattern) has an initial cash outflow followed by a series of cash inflows.

© 2014-2024 AnalystPrep.

LOS 5d: describe types of real options relevant to capital investments;

Options are financial derivatives that give buyers the right, but not the obligation, to buy or sell an underlying asset at an agreed-upon price and date. In the same vein, real options are capital allocation options that allow managers the right, but not the obligation, to undertake specific business initiatives in the future. Such initiatives may include deferment, abandonment, or project expansion. Fundamentally, these initiatives can impact the value of capital investments.

The following are types of real options:

- **Timing options:** A company delays investing now with the hopes that improved information in the future could help improve the NPV of a project.
- **Sizing options:** An abandonment option allows a company to abandon a project with discouraging results. This option can be exercised when the cash flow of abandoning a project exceeds the present value of continuing the project. On the other hand, a growth option allows a company to make additional investments based on the prospects of future solid financial results.
- **Flexibility options:** The price-setting option permits a company to increase its prices. A company can take advantage of excess demand, which it cannot meet by increasing its production due to low capacity. The company can also use production-flexibility options to profit from additional shifts and overtime to meet the additional demand.
- **Fundamental options:** Payoffs from a project, such as mining minerals, increase or decrease the value of an investment depending on whether they will find the mineral. Many research and development projects are examples of fundamental options.

There are three common approaches to evaluating capital projects with real options:

1. Investment analysis without considering options. If the NPV is positive without considering real options, a firm goes ahead with an investment.
2. Calculation of NPV with the real options and adding the real options value using the formula:

© 2014-2024 AnalystPrep.

$$\text{Project's NPV} = \text{NPV (without options)} - \text{Option cost} + \text{Option value}$$

3. Decision trees and option pricing models. Depending on the nature of the investment, firms may use either approach when determining the value of a capital investment that involves future sequential decisions and alternative outcomes. Calculating the project's NPV often involves assigning a probability and an expected timing to future outcomes.

Example: Project NPV with a Real Option

McGill Automotive estimates the NPV of a new assembly plant to be -$600,000. The firm is evaluating an additional investment of $700,000 (present value). This firm will enable the management to pay overtime wages to workers in the new assembly plant if the new product crosses over to global markets. The option has an estimated present value of $2 million.

What is the value of the new assembly plant, including the real option?

Solution

$$\begin{aligned}\text{Project's NPV} &= \text{NPV (based on discount cash flows alone)} - \text{Cost of options} \\ &\quad + \text{value of options} \\ &= -600,000 - 700,000 + 2,000,000 \\ &= \$700,000\end{aligned}$$

The project has a positive NPV after considering the costs and benefits of the real options. The company should invest in the project.

© 2014-2024 AnalystPrep.

Question

Gatsby Solutions is considering a capital project with the following information:

- The initial outlay is $190,000.
- The annual after-tax operating cash flows have a 40% probability of being $20,000 for five years and a 60% probability of $70,000 for the same five years.
- The project's life is five years.
- The salvage value at the project end is 0.
- The required rate of return (RRR) is 12%.
- In one year, the company has an abandonment option out of which Gatsby Solutions would receive the salvage value of $100,000.

The NPV of the project, assuming the optimal abandonment strategy, is *closest to*:

A. -$9,761.
B. $4,257.
C. $62,334.

The correct answer is B.

If higher cash flows occur and Gatsby does not abandon the project, the NPV is:

$$\text{NPV} = -190,000 + \sum_{t=1}^{5} \frac{70,000}{(1.12)^5} = \$62,334$$

If Gatsby abandons the project when lower cash flows occur, it receives the first-year cash flow and the abandonment value:

© 2014-2024 AnalystPrep.

$$\text{NPV} = -190,000 + \frac{20,000 + 100,000}{1.12} = \$82,857$$

The expected NPV is:

$$\text{NPV} = 0.4\,(-82,857) + (0.6)\,(62,334) = \$4,257$$

© 2014-2024 AnalystPrep.

LOS 6a: calculate and interpret the weighted-average cost of capital for a company

Cost of Capital

The cost of capital is the rate of return the suppliers of capital (shareholders and debtholders) require as compensation for their capital contribution. In other words, the cost of capital can be seen as the opportunity cost of funds for the suppliers of the capital.

The cost of capital is composed of the cost of debt and the cost of equity. The cost of debt is riskier than the cost of equity and is sometimes secured with collateral. As such, debtholders have lower required rates of return than equity holders.

Weighted Average Cost of Capital

The weighted average cost of capital (WACC) is the company's capital cost which is the rate of return that investors demand. It is usually estimated by computing the marginal cost of each of the various sources of capital for a company and then taking a weighted average of these costs.

Given the cost that a company incurs to raise additional capital, the WACC may also be referred to as the marginal cost of capital (MCC).

The formula for the WACC is:

$$\begin{aligned} \text{WACC} = &[(1 - \text{Tax rate}) \times \text{Pre-tax cost of debt} \times \text{Weighting of debt}] \\ &+ (\text{Cost of equity} \times \text{Weighing of equity}) \end{aligned}$$

From the formula above:

- From the perspective of an issuer, the cost of debt is the required rate of return on debt financing. It is ussually an interest on the existing unsecured loans or bonds. However, a forward-looking measure of the cost of debt can be obtained by checking the rates on

© 2014-2024 AnalystPrep.

companies that recently borrowed. Lastly, if the interest expense is deductible, we decrease the nominal tax rate by (1 − Tax rate).

- The weightings of debt and equity can be based on the market values proportions, or the target weights given by the management, which are based on book values proportions. Market values are commonly used because book value reflect the historical values while market values reflect current market prices.
- From the perspective of the issuer, the cost of equity is the required rate of return by the equity investors. Cost of equity is higher than the cost of debt and are not tax-deductible.

Example: Calculating the WACC

Assume that company XYZ has the following capital structure: 25% equity, 10% preferred stock, and 65% debt. Its marginal cost of equity is 12%, while its marginal cost of preferred stock is 9%. Lastly, its before-tax cost of debt is 7%. If the marginal tax rate is 35%, what is the WACC of company XYZ?

In this example, weighting of debt = 65%, cost of debt = 7%, tax rate = 35%, weighting of equity = 25%, and cost of debt = 12%.

And we know that,

$$\begin{aligned}\text{WACC} = &[(1 - \text{Tax rate}) \times \text{Pre-tax cost of debt} \times \text{Weighting of debt}] \\ &+ (\text{Cost of equity} \times \text{Weighing of equity})\end{aligned}$$

Therefore

$$\text{WACC} = [(1 - 0.35) \times (0.07 \times 0.65)] + (0.12 \times 0.25) + (0.10 \times 0.09) = 0.02957 + 0.$$

© 2014-2024 AnalystPrep.

Question

A company has the following capital structure: 35% equity, 15% preferred stock, and 50% debt. If its marginal cost of equity is 10%, the cost of preferred stock is 7%, and the before-tax cost of debt is 6%, with a marginal tax rate of 30%, the WACC of the company is *closest to*:

A. 5.84%.

B. 6.75%.

C. 8.00%.

Solution

The correct answer is **B.**

$$\begin{aligned} \text{WACC} &= [(1 - \text{Tax rate}) \times \text{Pre-tax cost of debt} \times \text{Weighting of debt}] \\ &\quad + (\text{Cost of equity} \times \text{Weighing of equity}) \\ \text{WACC} &= [(1 - 0.4)(0.08 \times 0.5) + (0.11 \times 0.30) + (0.07 \times 0.15) \\ &= 0.0675 \text{ or } 6.75\% \end{aligned}$$

© 2014-2024 AnalystPrep.

LOS 6b: explain factors affecting capital structure and the weighted-average cost of capital

Both internal and external forces influence a corporation's capital structure, varying among countries and sectors. These factors include:

Internal factors	External factors
Business model characteristics	Market conditions
Cash flows and Profitability	Regulatory constraints
Asset types and Ownership	Industry/peer factors

Determinants of the Amount and Type of Financing Needed

The type of financing and the total amount needed depend on the issuer's position in the corporate life cycle and its business model.

Capital-Intensive Business.

Capital-intensive businesses are businesses that require a lot of assets. Capital-intensive companies have high capital expenditure to sales, low asset turnover, and high working net-working-capital-to-sales ratios.

Many businesses often start as vertically integrated and more capital-intensive, but over time the capital-intensive business is separated from the service or customer-facing brand. The businesses then have contractual instead of ownership relations.

The capital structure of some businesses, such as banks, is regulated by the government to maintain a certain proportion of equity as assets, increasing the WACC due to higher equity financing.

Capital-Light Businesses.

Some service businesses, such as those in the technology sector, have low capital needs. These asset light-businesses have low capital -expenditures-to-sales-ratios and high fixed asset

© 2014-2024 AnalystPrep.

turnover. Their assets mainly comprise excess cash and intangibles. This might be due to the following factors:

- They operate a network for other companies that own the assets. Hence, they do not need to look for financing from capital markets.
- Its customers are charged upfront, or the company has a negative/ short cash conversion cycle eliminating the need for working capital external financing.
- The firm may choose to compensate employees with stock which the staff is always willing to accept given the company’s rising stock price, reducing the need for cash.
- If a company in its early stage is capital-light and profitable, it may not need external financing unless its management deems it necessary.

Corporate Life Cycle

The maturity, capital intensity, market position strength, and the stability and nature of a company's operation all influence its capital structure and ability to support debt.

As a general rule, companies begin as capital consumers; that is, they burn cash. Cash flows then go from negative to positive, and business risk declines as they develop, allowing for greater use of leverage. At this stage, debt becomes a more significant component of its capital structure. Capital markets connect companies with investors whose requirements vary. Capital that cannot be obtained through borrowing must be obtained through equity.

There is a link between a company's life-cycle stage, cash flow characteristics, and its ability to support debt. A company's life-cycle stages include start-up, growth, and maturity.

Capital Structure and Company Life Cycle

Start-ups

In the start-up stage, companies are cash consumers. Revenues are **zero to minimal**, and the

© 2014-2024 AnalystPrep.

business risks are high. Companies in the start-up stage will use equity financing instead of debt because of the high uncertainty of cash flow generation. This equity is sourced privately (from founders, employees, and venture capitalists) rather than in public markets (such as IPO).

Debt financing that might be accessible are leases (such as office and retail real estate) and convertible debt. Convertible debt allows investors to convert debt to equity in the future at a predetermined price.

Growth

As a company exists a start-up stage, the revenues are rising due to high demand coupled with accelerated growth. However, free cash flow, though improving, is likely to be negative due to the high investments needed to achieve this growth and scale.

The business risk declines at this stage as a company establishes a customer and supplier base. The company also becomes more attractive to lenders since cash flows and asset base can be used as security. Companies will begin using debt, but equity remains the predominant source of capital.

Mature Businesses

At this stage, revenue may slow down or begin to decline but predictable. Free cash flows are positive and reliable, and the company can support low-cost debt, often unsecured. From the company's perspective, debt financing is likely more attractive than higher-cost equity financing.

In practice, large, mature public companies commonly employ significant leverage. Due to the tax-deductibility of interest expense, debt is a vital component of the “optimal” capital structure once an organization can support it.

Over time, mature organizations often deleverage, decreasing debt as a percentage of total capital. Deleveraging occurs due to ongoing cash flow generation, and equity values improve over time due to share price gain. Companies may choose to execute share buybacks to mitigate this deleveraging, reducing the equity in their capital structure.

© 2014-2024 AnalystPrep.

Determinants of the Costs of Debt and Equity

Investors' assessments of issuer-specific and top-down factors determine the cost of equity and debt in financial markets. Despite the cost of equity being higher than the cost of debt, they are influenced by the same factors and thus move together because they claim the same cash flows.

These factors include:

Top-Down Factors

Top-down factors include financial market conditions and industry conditions.

Economic Conditions

The prevailing economic environment can heavily impact the anticipated returns for debt and equity investors in either private or public sectors. For instance, macroeconomic and specific country-related factors, like growth rate, inflation, monetary strategies, and currency value fluctuations, can increase interest rates on sovereign government debt and credit spreads for different issuers.

Moreover, with the looming threat of a recession, lenders may require much larger premiums from borrowers due to the rising chances of a loan default. This trend is especially noticeable in cyclical sectors.

Lastly, from the perspective of equity investors, companies aim to take loans when the interest rates are low and opt for equity releases when the stock prices are high.

Industry Conditions

The industry where a company operates may influence its cost of capital. Typically, a company's vulnerability to economic variables is based on the type of products or services it offers.

For instance, consider a case of fluctuating oil prices. When oil prices rise, oil producers might benefit from narrower credit spreads, and investors might be more inclined to up their financial

© 2014-2024 AnalystPrep.

stakes in these firms. Conversely, for businesses like airlines, where fuel constitutes a significant cost, increased oil prices might widen their credit spreads and dampen investor enthusiasm due to anticipated higher operating costs.

Issuer-Specific Factors

Issuer-specific factors cover the risk and return profile of an issuer. By considering the risk-return of an issuer, debt and equity investors cab modify their expected returns based on fundamental rates or general averages by examining various risk elements, which include:

I. **Interest coverage and Financial leverage.**

Interest coverage and financial leverage are also considered because a company with substantial debt might struggle to take on additional borrowing. Furthermore, for shareholders, a high debt level indicates that many other claims take precedence over their interests.

Interest coverage is calculated as follows:

$$\text{Interest coverage} = \frac{\text{Profit before interest and taxes}}{\text{Interest expense}}$$

A higher interest coverage ratio shows a company's good financial health, as it can comfortably cover its interest payments. Conversely, a ratio below 1 signifies potential financial strain, as the company may struggle to meet interest expenses, raising concerns for lenders and investors.

On the other hand, financial leverage is calculated as follows:

$$\text{Financial Leverage} = \frac{\text{Total Debt}}{\text{Total Equity}}$$

A higher debt-to-equity ratio indicates that a company has a higher proportion of debt in its capital structure, implying more financial leverage. Conversely, a lower ratio suggests the company relies more on equity financing, indicating less financial leverage.

© 2014-2024 AnalystPrep.

II. **Profitability Risks**

Profit margin stability is also a crucial factor determined by a firm's proportion of variable or fixed costs. The operating leverage of a company is used to measure the stability of profit margins:

$$\text{Operating leverage} = \frac{\text{Fixed costs}}{\text{Total costs}}$$

Firms with higher operating leverage see a greater fluctuation in cash flow and profits for a specific change in revenue compared to companies with lower operating leverage.

III. **Sales Risks**

Other factors held constant, investors are more confident in firms with stable, growing, and predictable revenues and thus will lend to such firms at a lower cost.

IV. **Collateral/Type of Assets Owned by the Firm.**

The assets central to a company's business model play a crucial role. Typically, assets like real estate, vehicles, aircraft, and reliable customer receivables, which can act as strong collateral or are liquid and cash-generating, allow for more debt usage.

© 2014-2024 AnalystPrep.

Question

A lower credit rating of a company's debt *most likely* signifies:

A. Lower risk for equity and debt investors.
B. Higher risk for equity and debt investors.
C. Lower returns are demanded by equity and debt investors.

Solution

The correct answer is B.

A lower credit rating signifies higher risk for a company's investors, who demand higher returns.

A and C are incorrect. A lower credit rating signifies higher risk and, as such, higher returns that equity and debt investors demand.

© 2014-2024 AnalystPrep.

LOS 6c: explain the Modigliani-Miller propositions regarding capital structures

A firm's **capital structure** is the mix of debt and equity it uses to finance its investments. A capital structure decision aims to determine the financial leverage to maximize a company's value by minimizing the weighted average cost of capital (WACC).

Franco Modigliani and Merton Miller (1958) posit that, given certain assumptions, the choice of capital structure is irrelevant in determining the value of the firm. In this case, the firm's value is the present value of the firm’s expected future cash flows discounted by WACC.

Assumptions of Modigliani-Miller Propositions

Franco Modigliani and Merton Miller suggested the following assumptions for Proposition I:

1. Investors have similar expectations regarding future cash flows.
2. Bonds and stocks are traded in a perfect capital market.
3. Investors can lend and borrow at a risk-free
4. rate.
5. There are no agency costs.
6. Financing and investing decisions are independent of each other.

Although these assumptions are unrealistic, Modigliani and Miller's school of thought is that investors can create capital structures they prefer. Management's capital structure does not matter because investors can change it at no cost.

Proposition I Without Taxes: Capital Structure Irrelevance

MM Proposition I, without taxes, posits that the market value of a company is unaffected by the capital structure of the company. As such, the value of a levered firm is equal to the value of an unlevered firm.

$$\text{Value of levered firm } (V_L) = \text{value of an unlevered firm } (V_U)$$

© 2014-2024 AnalystPrep.

The above relationship implies that cash flows, not capital structure, determine the value of a company. Additionally, assuming no taxes, a company's capital structure does not affect its WACC.

Assume management has set a company's capital structure to consist of 50% debt and 50% equity. Further, assume that the investor prefers the company's capital structure to be 60% debt and 40% equity. The investors will use borrowed money to finance their share purchase so that the ownership of the company's assets reflects 60% debt financing. The importance of the Modigliani and Miller theory is that managers cannot use capital structure to change a firm's value.

Proposition II Without Taxes: Higher Financial Leverage Raises the Cost of Equity

Here, Franco Modigliani and Merton Miller remove a few assumptions from Proposition I and state that the cost of equity is a linear function of a company's debt/equity ratio.

According to this proposition, the cost of equity increases as a company uses debt financing to maintain a constant WACC. The risk of equity is contingent on business risk and financial risk. Business risk determines the cost of capital, while capital structure determines financial risk.

Mathematically, MM Proposition II without taxes implies that the cost of equity is a linear function of a company's D/E ratio:

$$r_e = r_0 + (r_0 - r_d)\frac{D}{E}$$

Where:

r_e= The cost of equity

r_0= The cost of capital for a company financed only by equity

r_d= The cost of debt

D= The market value of debt

© 2014-2024 AnalystPrep.

D= The market value of equity

From the formula above, the following must be true:

- Higher leverage (D/E) increases the cost of equity (r_e) but does not alter the firm's value or WACC
- An increase in the cost of debt (r_e) must precisely offset the higher use of lower-cost debt

Example: MM Proposition II Without Taxes

Genghis Investment has an all-equity capital structure. Its characteristics are as follows:

- The expected operating income is $6,000.
- The cost of equity, which is also the WACC, is 12%.
- EBIT is perpetual.
- Genghis plans to issue $18,000 in debt at 6% to buy back $18,000 worth of its equity.

The value of Genghis and its cost of equity assuming MM Proposition II without taxes is *closest to*:

Solution

$$V = \frac{EBIT}{r_{WACC}} = \frac{\$6,000}{0.12} = \$50,000$$

When Genghis issues the debt, it pays interest of 6% on the debt.

$$\text{Interest Payment} = 0.06\,(\$18,000) = \$1,080$$

Using the MM proposition II, the cost of Genghis' equity is given by:

$$r_e = r_0 + (r_0 - r_d)\frac{D}{E}$$

© 2014-2024 AnalystPrep.

Where:

$$E = V - D = \$50,000 - \$18,000 = \$32,000$$

So,

$$r_e = 0.12 + (0.12 - 0.06)\frac{\$18,000}{\$32,000} = 0.15375 = 15.38\%$$

Genghis makes $1,080 to debtholders and $\$6,000 - 1,080 = \$4,920$ to equity holders. The value of debt is calculated as follows.

$$V = D + E = \frac{\$1,080}{0.06} + \frac{\$4,920}{0.1538} = \$50,000$$

Proposition I With Taxes: The Tax Shield

A tax shield is the deliberate use of taxable expenses to offset taxable income. The interest expense on debt provides a tax shield that results in savings that enhance the value of a company. Ignoring the practical realities of bankruptcy and financial distress costs, the value of a company increases with increased debt levels. The level of tax benefit reduces the actual cost of debt.

Note that,

$$\text{After-tax cost of debt} = \text{Before-tax cost of debt} \times (1 - \text{marginal tax rate})$$

According to MM Proposition I, with taxes, the value of the levered company is greater than that of the all-equity company by an amount equal to the corporate tax rate multiplied by the value of the debt (tD).

The MM Proposition I with taxes is:

$$\begin{aligned} V_L &= V_U + tD \\ \Rightarrow V_L &> V_U \end{aligned}$$

Where:

© 2014-2024 AnalystPrep.

V_L = value of the levered firm (debt in the capital structure).

V_U = value of the unlevered firm (no debt in the capital structure).

t = Marginal tax rate.

tD = present value of the debt tax shield.

In summary, under MM Proposition I with taxes:

- In the presence of corporate taxes (not personal taxes), a profitable firm can increase its value by using debt in its capital structure.
- The higher the corporate tax rate, the higher the benefits of including debt in a capital structure. According to Proposition I, value is maximized at 100% debt with taxes.

Proposition II with Taxes: The Impact on WACC and Return on Equity

By introducing taxes, the WACC is adjusted to reflect the impact of the tax benefit:

$$r_e = r_0 + (r_0 - r_d)(1 - t)\frac{D}{E}$$

We can see that the WACC for a company with debt is lower than the WACC for companies without debt. Therefore, debt financing is highly beneficial when considering taxes and ignoring financial distress and bankruptcy costs. The firm's optimal capital structure is still 100% debt.

In summary, if MM Proposition II with taxes holds, then the following must be true:

- When corporate tax is present, the cost of equity (r_e) increases as the company employs more debt but at a slower rate compared with the no-tax proposition ($r_e = r_0 + (r_0 - r_d)\frac{D}{E}$)
- As a firm employs more debt, its WACC decreases, increasing its value.
- Ignoring financial distress and bankruptcy costs, in the presence of corporate tax, the use of tax enhances the value of a company with the optimal benefit at 100% debt.

© 2014-2024 AnalystPrep.

Example: MM Proposition I and II With Taxes

Let us use the example of Genghis Investments.

- The expected operating income is $6,000.
- The cost of equity, which is also the WACC, is 12%.
- EBIT is perpetual.
- Genghis plans to issue $18,000 in debt at 6% to buy back $18,000 worth of its equity.
- The corporate tax rate is 30%.

The value of Genghis is calculated as follows:

$$V_U = \frac{EBIT(1-t)}{WACC} = \frac{\$6,000(1-0.3)}{0.12} = \$35,000$$

The value of Genghis when it issues $18,00 in debt and buys back shares:

$$V_L = V_U + t_D = \$35,000 + 0.3(\$18,000) = \$40,400$$

The value of equity after buyback is $40,400–$18,000=$22,400$40,400–$18,000=$22,400, and

© 2014-2024 AnalystPrep.

levered equity is:

$$r_e = 0.12 + (0.12 - 0.06)(1 - 0.3)\frac{\$18,000}{\$22,400} = 0.15375 = 15.38\%$$

So that,

$$\begin{aligned} V_L = D + E &= \frac{r^{dD}}{r^d} + \frac{(EBIT - r^{dD})(1 - t)}{r_e} \\ &= \frac{\$1,080}{0.06} + \frac{(\$6,000 - \$1,080)(1 - 0.3)}{0.15375} \\ &= \$40,400 \end{aligned}$$

The WACC of a levered Genghis is:

$$\begin{aligned} r_{WACC} &= (\frac{\$18,000}{\$40,400})06\,(1 - 0.3) + (\frac{\$22,400}{\$40,400})0.15375 \\ &= 0.1039 = 10.39\% \end{aligned}$$

Therefore,

$$V_L = \frac{EBIT(1 - t)}{WACC} = \frac{\$6,000(1 - 0.3)}{0.1039} \approx \$40,400$$

Costs of Financial Distress

Financial distress is the increased uncertainty about a company's capability to fulfill its commitments due to reduced profitability or current financial losses.

The disadvantage of operating and financial leverage is that the earnings are magnified downwards during an economic slowdown. Lower earnings put companies in financial distress, which adds costs.

The costs of financial distress can be classified as direct or indirect. Some direct costs include actual cash expenses (such as administrative costs) associated with bankruptcy. In contrast, indirect costs include agency costs associated with the debt, forgone investment opportunities, and impaired ability to conduct business.

© 2014-2024 AnalystPrep.

Companies with assets that have a ready secondary market have lower costs associated with financial distress. On the other hand, companies with fewer tangible assets have less liquidity and higher costs associated with financial distress. The probability of bankruptcy increases as the degree of leverage increases.

© 2014-2024 AnalystPrep.

Question

Which of the following is most likely true about the effect of asymmetric information on the cost of equity?

A. Companies with lower asymmetry of information have a greater likelihood of agency cost.
B. Some degree of asymmetric information exists because investors never have as much information as managers.
C. Managers choose financing methods according to a hierarchy that prefers the method with the most potential information content.

Solution

The correct answer is B.

Managers have more information about the company's current performance and its future potential investments than investors.

A is incorrect. Companies with lower asymmetry of information have less likelihood of agency costs.

C is incorrect. Managers choose financing methods according to a hierarchy that prefers the method with negligible potential information content.

© 2014-2024 AnalystPrep.

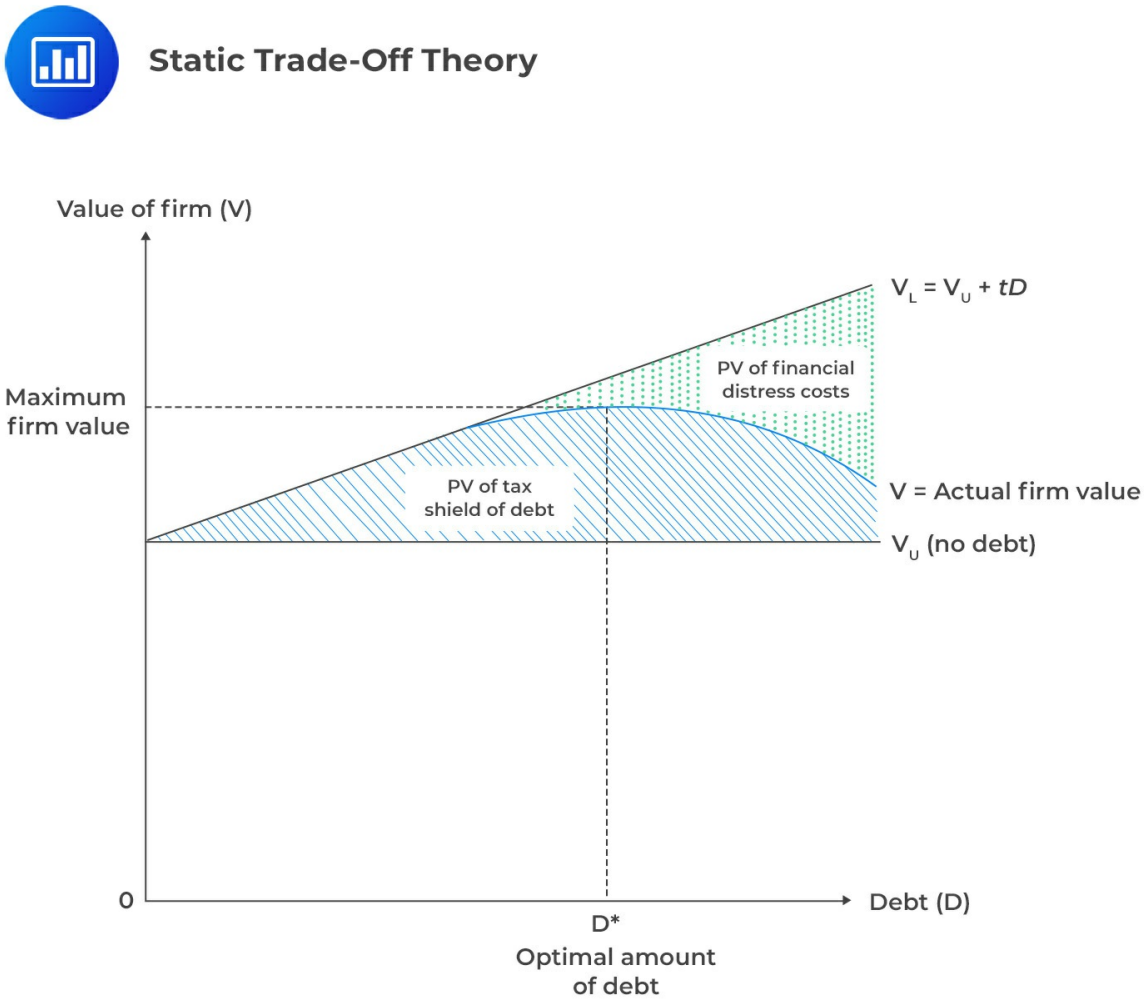
LOS 6d: describe optimal and target capital structures

The target capital structure of a company refers to the capital the company is striving to obtain. In other words, target capital structure describes the mix of debt, preferred stock, and common equity expected to optimize a company's stock price. As a company raises new capital, it will focus on maintaining this target or optimal capital structure. The value-reducing impact of the present value of expected bankruptcy costs offsets the tax shield's value-enhancing effect from debt. The trade-off can be illustrated by incorporating the potential cost of financial bankruptcy into the value of a levered firm:

$$V_L = V_U + tD - PV(\text{Costs of financial distress})$$

The above equation is called the static trade-off theory of capital structure.

© 2014-2024 AnalystPrep.



At low levels, the firm value will be higher because the tax benefit of debt will outweigh potential financial distress costs. As debt levels increase, the financial distress costs also increase and equal the tax benefit of debt. If debt levels increase further, the firm's value will decrease as the financial distress costs exceed the tax benefit of debt. The optimal capital structure is the level at which the debt level maximizes the firm's value and the associated equity level.

Market Value and Book Value

Note that the prior discussions on WACC and debt and equity weights were calculated using the market value of equity. Regarding target capital structure, equity and debt book values are used

© 2014-2024 AnalystPrep.

to calculate the weights.

When determining target capital structure, book values instead of market values because:

- Market values can change dramatically, but they rarely impact the optimum level of borrowing.
- The amount and types of capital a company invests, not the company itself, are of paramount significance to management.
- The capital structure policy ensures that management can borrow quickly and cheaply. Lenders and rating agencies use debt book values and equity in their calculation measures.

Target Weights and WACC

To determine the weights to be used in the computation of the WACC of a company, a manager should ideally use the proportion of each source of capital that will be used.

For example, if a company has two sources of capital: debt and common equity:

w_d, the proportion of debt:

$$w_d = \frac{\text{Market value of debt}}{\begin{array}{l}(\text{Market value of debt} \\ + \text{Market value of equity} \\ + \text{Market value of preferred stock})\end{array}}$$

w_e, the proportion of debt:

$$w_e = \frac{\text{Market value of equity}}{\begin{array}{l}(\text{Market value of debt} \\ + \text{Market value of equity} \\ + \text{Market value of preferred stock})\end{array}}$$

However, if the target capital structure is known and the company attempts to raise capital consistently with this target, then the target capital structure should be used.

© 2014-2024 AnalystPrep.

Estimating Target Capital Structure Weights

An external analyst will most likely not know the target capital structure of a company and will, therefore, have to estimate it using one of the following methods:

- Assume that a company's current capital structure, at current market value weights for each capital component, is equivalent to the company's target capital structure.
- Examine a company's capital structure trends or its management's statements regarding capital structure policy. This will be useful in the inference of the target capital structure.
- Use the averages of comparable capital structures of companies as the target capital structure.

An example will help to explain this concept further.

Example: Calculating the Capital Structure

An analyst wishes to determine the proportion of debt and equity that Company ABC would use to estimate these proportions using (i) the current capital structure of Company ABC and (ii) the average of Company ABC's competitors' capital structure

The following information is given:

- Company ABC's market value of debt = $25 million.
- Company ABC's market value of equity = $35 million.

Company ABC's competitors and their capital structures are:

Competitor	Market Value of Debt	Market Value of Equity
X	$20 million	$40 million
Y	$32 million	$55 million

Solution to (i):

w_d, the proportion of company ABC's debt

© 2014-2024 AnalystPrep.

$$w_d = \frac{\$25 \text{ million}}{\$25 \text{ million} + \$35 \text{ million}} = 0.41667$$

w_e, the proportion of company ABC's debt

$$w_e = \frac{\$35 \text{ million}}{\$25 \text{ million} + \$35 \text{ million}} = 0.5833$$

Solution to (ii)

w_d, the arithmetic average of company ABC's competitors' debt:

$$w_d = \frac{\left(\frac{\$20 \text{ million}}{\$20 \text{ million} + \$40 \text{ million}}\right) + \left(\frac{\$32 \text{ million}}{\$32 \text{ million} + \$55 \text{ million}}\right)}{2}$$
$$= \frac{0.3333 + 0.36782}{2} = 0.35057$$

w_e, the arithmetic average of company ABC's competitors' debt:

$$w_e = \frac{\left(\frac{\$40 \text{ million}}{\$20 \text{ million} + \$40 \text{ million}}\right) + \left(\frac{\$55 \text{ million}}{\$32 \text{ million} + \$55 \text{ million}}\right)}{2}$$
$$= \frac{0.66667 + 0.63218}{2} = 0.64943$$

Although the arithmetic average is calculated in the above example, it is possible to compute the weighted average, giving greater weight to larger companies.

Pecking Order Theory

Managers have more information about a company's performance and prospects—including future investment opportunities—than outsiders, resulting in asymmetric information— and unequal distribution of information.

Since there is a more significant potential for conflicts of interest, debt and equity capital providers demand higher returns from companies with increased asymmetry in information because they may speculate that the new securities are overpriced. In other words, a company typically issues equity when its shares are expensive or issue new debt when its creditworthiness

© 2014-2024 AnalystPrep.

is on the verge of declining.

According to the pecking order theory (Myers & Majluf, 1984), managers prioritize financing options based on the potential for revealing information. They lean first towards options that disclose the least information, like using internal funds. On the other end, they are more hesitant about public equity offerings, as these can make investors wary; if a company's future looks bright, why would current owners dilute their ownership? Thus, when external funds are needed, managers tend to favor private debt over public ones and are most reluctant to issue equity.

Implications of Pecking Order Theory

- Managers prefer internal funds, and when external funds are required, they favor private debt over public debt and prefer equity financing as a last resort.
- Companies are inclined to issue equity when they perceive their stock to be overpriced. Conversely, if they think their stock is undervalued, they might hesitate to issue equity and may opt to buy back shares. Alternatively, the issuance of debt by a company may indicate management's confidence in the future ability to repay the debt.
- If the cost of capital increases after a company increases the issuance of equity, it is a negative signal regarding the company's prospects.

Agency Costs

Agency costs are incremental costs incurred due to the competing interests of shareholders, debtholders, and management. Items such as subsidized dinners, a corporate jet fleet, and chauffeured limousines are examples of “perquisite consumption” that executives might lawfully authorize for themselves at a cost to shareholders.

The costs arising from this conflict of interest have been called the agency costs of equity. Specific actions are taken to mitigate this risk. Such actions include requiring audited financial statements, holding an annual meeting, and using non-compete employment contracts and insurance to guarantee performance.

© 2014-2024 AnalystPrep.

The free cash flow hypothesis (Jensen's, 1986) predicts that a reduction in agency costs of equity results from an increase in the use of debt. The more financially leveraged a company is, the less room management has to take on more debt or spend money foolishly.

© 2014-2024 AnalystPrep.

Question

Assume that the current market value of company XYZ's debt and common equity are $55 million and $45 million, respectively, representing the company's target capital structure. What are company XYZ's target capital structure weights?

A. 55% debt; 45% equity.

B. 45% debt; 55% equity.

C. 50% debt; 50% equity.

Solution:

The correct answer is A.

$$w_d = \frac{\$55 \text{ million}}{\$55 \text{ million} + \$45 \text{ million}} = 0.55$$
$$w_e = \frac{\$45 \text{ million}}{\$55 \text{ million} + \$45 \text{ million}} = 0.45$$

© 2014-2024 AnalystPrep.

Learning Module 7: Business Models

LOS 7a: describe key features of business models;

A business model outlines how a business is organized to deliver value to its customers. A business model encompasses the following aspects:

a. Target **customers** of the business (“who?”).
b. Products or Services offered by the business (“why and often “why”).
c. Where is the company selling, and how do the products and services reach customers “where?”.
d. The pricing strategy of the firm (“how much?”).
e. Important assets, partners, and suppliers the firm requires (“how?”)

A business model describes what a business is about, how it runs its operations and generates revenue and profits, and how it differs from its competitors. A business model should outline the **core elements** and their **interactions** without going into the depth of a full-fledged business plan.

Features of a Business Model

A business model should answer the following questions:

a. Who are the target customers (or market)?
b. What does the firm offer?
c. Where does the firm sell its products or services, and does it reach its customers?
d. How much is the pricing?
e. What is the value proposition of the firm?
f. What is the business organization and capabilities of the firm?

We discuss each of the above questions.

1. **Target Customers**

© 2014-2024 AnalystPrep.

A business model should outline the target customers of a firm. Key issues that should be seen here include the geographies, market segments, and customer segments a firm will serve. Concerning customer segments, a business model can be business-to-business (B2B) or business-to-consumer (B2C) markets.

2. **Product or Services Offered by a Firm**

   A business model should define a firm's offering: products or services offered. Further, it should outline how the products and services differ from the firm's competitors based on the target customers' needs. A well-defined firm offering helps analysts to determine the total amount of capital available for a business and identify important competitors and risks.

3. **Channels of Selling its Offerings (Channel Strategies)**

   A company's channel strategy explains where the firm is selling its products or services and how it reaches its customers. The channel strategy has two functions: sales and marketing and distribution (logistics).

   Analyzing a firm's channel strategy involves differentiating between functions the firm can perform internally and what functions are effectively done by strategic partners and suppliers.

   As such, the anatomy of the channel strategy of a firm includes functions, assets, and other firms:

   - **Function:** selling/display, handling inquiries, order processing, physical distribution, after-sale service
   - **Assets:** Warehouses, retail stores, a sales force, and an e-commerce website.
   - **Firms:** retailers, wholesalers, agents, franchisees

   A firm's channels impact its revenue and cost structures, profitability, and response to internal and external risk factors.

   There are three different types of channel strategies:

© 2014-2024 AnalystPrep.

a. **Traditional Channel Strategy**

In the traditional channel strategy, finished goods flow from the manufacturer to the wholesaler, then to the retailer, and lastly, to the end customer. Intuitively, it is a common strategy in the product business.

b. **Direct Sales Strategy**

In a direct sales strategy, a manufacturer sells directly to the end customer, disintermediating the distributor or retailer. In other words, the manufacturing firm utilizes its own sales force, which may be a whole department. It is a common strategy in B2B businesses, pharmaceutical firms, and life insurance.

Direct sales may involve an intermediary. In this case, the intermediary works on an agency basis. In this arrangement, a firm pays commissions to an intermediary, but the intermediary does not claim ownership of the goods. A good example is drop-shipping in eCommerce, where an online marketer can initiate a delivery from a manufacturer to the end-user without taking an inventory of the products.

c. **Omnichannel Strategy**

The omnichannel strategy involves the employment of a combination of both physical and digital methods to finalize a sale. For instance, a customer might order a product online and later pick it up at the store or get it delivered to a place of choice.

4. **Pricing Details of a Firm**

A business model should sufficiently explain the pricing details so that the business logic of a firm is understandable. For instance, a business model should have pricing details relative to its competitor(s): is it a premium, parity, or discount compared to competitors? Moreover, a business model should justify the pricing structure.

Pricing is relatively nonessential in a business model of a price-taker firm such as commodity producers. Being "price takers" implies that they must take the prices the

© 2014-2024 AnalystPrep.

market sets. As such, they face high price elasticity and higher pricing risk from competitors. To circumvent this “pricing disadvantage,” the price-takers emphasize on other sources of value, such as cost advantage.

On the other hand, some companies that are price-setters face less pricing risk from their competitors. Therefore, such companies can differentiate their offering to gain pricing power. Price discrimination occurs when firms charge different prices to different customers. Price discrimination aims to maximize revenues based on customers' will to buy.

Types of Pricing Models

A pricing model describes how customers are billed based on the quantity of goods or services they purchase. Due to pricing discrimination, there are many pricing models. A unit of product or service can be specified in many ways, and prices can vary based on factors such as quality or grade, units sold, channel, customer size and type, and unit cost.

Common pricing models include:

i. **Value-based pricing models:** Pricing is based on the value acquired by the customer. For instance, a car manufacturing company may price cars at a premium because their cars have low operating costs.
ii. **Dynamic pricing:** Different prices are charged for different clients at different times depending on variables such as supply and demand.
iii. **Tiered pricing:** Different buyers are charged different prices based on volume or product features.
iv. **Auction/ reverse auction models:** Prices are established via an automated bidding process.

Pricing Models for Multiple Products

Models for pricing multiple products include:

- **Bundling:** Customers are incentivized to combine multiple products (usually

© 2014-2024 AnalystPrep.

complementary goods with high incremental margins and marketing costs). Examples are furnished rental apartments and TV cable subscriptions with internet services.

- **Add-on pricing:** Applicable when a customer purchases extra services or products on the purchase date (for example, an order in a restaurant) or afterward (for example, a change in subscription package). A company usually seeks higher margins on optional features or services. However, excess application of this model can hurt a company's reputation and distort customer goodwill.
- **Razor, razor blade pricing:** Occurs when a low price is charged on equipment and a high price on a dependent accessory. For instance, a relatively low price may be applied to a razor and a high price on the blades.

Pricing for Increasing Growth

- **Penetration pricing:** It is a form of discount pricing where a firm sacrifices margins with the intention of building scale and market share. An example is video subscription services such as Netflix.

  If penetration pricing is applied for an extended period of time, regulators may consider it anti-competitive. Moreover, the investors may question the profitability landmarks of the company.

Pricing Models for Encouraging Trial and Adoption

- **Freemium pricing:** This model is common in digital content and services. It allows customers to access a certain level of usage or functionality for free. An example is video games.
- **Hidden revenue business models:** Occur when a firm provides services for free and generates revenue in a different way. For example, content creators provide “free” content and get paid for advertising in the media sector.

Creating Value through Alternatives to Purchasing

© 2014-2024 AnalystPrep.

Business models can create value by allowing an alternative form of owning an asset or product. These alternatives include:

- **Leasing:** In this case, a firm transfers ownership to customers who will bear lower costs for capital and maintenance. Examples are real estate and automobiles.
- **Recurring revenue or subscription pricing:** Allows customers to "rent" items for a period of time of their choice. An example is the subscription services in the media industry.
- **Licensing:** A firm receives royalty payments from customers who use intangible assets such as brand names or songs.
- **Franchising:** An advanced form of licensing where a firm (franchisor) gives an entity (franchisee) a right to distribute its products or services in a given jurisdiction. The franchisor gives support such as marketing to the franchisee.

5. **Value Proposition of a Firm**

A business model should outline the value proposition of a firm. A firm's value proposition gives the characteristics of the firm that attract the target customers. Besides, it informs customers' preference of a firm over its competitors.

The value proposition of a firm is built through:

- Service and support, such as effective customer service, from a firm.
- The sale process, such as ease of purchase.
- Features of the product, such as performance and style.
- Pricing as compared to competitors.

In summary, the value proposition considers the following questions: “Who?” “What?” “Where?” and “How much?”

6. **Business Organization and Capability of a Firm**

© 2014-2024 AnalystPrep.

A business model should outline a firm's business organization and capabilities. This defines how a firm is structured to deliver the value proposition.

A business model should give assets and capabilities (such as skilled labor and modern technology) that a firm must implement. It should also state whether these assets and capabilities are owned (insourced) or rented (outsourced) since it is important in determining business strategies and potential risks.

Within the business organization of the firm and its capabilities, we need to discuss the value chain, and profitability, and unit economics.

Value Chain

Value chain refers to the systems and processes within a firm that creates value for its customers. Note that the value chain only includes functions valued by customers and executed by a single firm. They, however, do not involve physical adjustment or handling of a product.

As such, the value chain is different from the supply chain. The supply chain is the sequence of firm internal and external processes involved in creating products. An example of a supply chain is the production and delivery of products to the end customer.

The value chain can be seen as a bridge between the value proposition of a firm and its profitability. Essentially, the value chain involves three key factors:

I. Identifying the business value chain components conducted by the firm (as originally envisioned by Michael Porter in 1985):
    - **Primary activities:** Inbound Logistics, Operations, Outbound logistics, marketing and sales, and Service.
    - **Support activities:** Procurement, human resource management, technology development, and firm infrastructure.

II. Approximating the **value added** and **costs** with each activity.

III. Identifying **competitive advantage** opportunities.

© 2014-2024 AnalystPrep.

Profitability and Unit Economics

A business model should highlight how a firm intends to generate profit. Profit expectations can be analyzed by examining margins, break-even points, and unit economics. Unit economics involves expressing revenues and costs on a per-unit basis.

© 2014-2024 AnalystPrep.

LOS 7b: Describe various types of business models

Conventional Business Models

In practice, most business models consist of these conventional models either individually or combined. Common business models are described in the table below:

In practice, most business models consist of these conventional models either individually or combined. Common business models are described in the table below:

Business Model	Types of Customers	Products/Services	Channel Strategy	Pricing Strategy
Natural resource producer	Refiners Distributors	Usable natural resources and raw materials	Contracts based on spot or forward prices	Spot or forward market prices in the contracts
Manufacturer	Distributors End-users (direct sales)	Finished goods	Distributors Digital of Direct sales force	Price per product sold. Subscription
Distributor	Retailers	Transportation and storage	Retailers	Spread between purchase and sales prices
Retailer	End-users	Finished goods. Customer experience.	Stores Digital or direct sales force	Mark-ups on products sold. Member service fees
Broker	Buyers and sellers	Connecting buyers and sellers.	Salespeople Digital	Commissions Listing fees
Bank	Borrowers	Loans. Leases.	Digital Branches, Loan officers	Loan and lease interest rate margin over interest rate paid for funding
Service producer	Services Businesses	Services.	Digital or direct sales force	Service fees Mark-ups on products used or sold
Software	Services Businesses	Software.	Digital or direct sales force	Subscription fee License costs Maintenance fee

Business Model Variation

In addition to conventional business models, there are other variations. They mainly consist of

© 2014-2024 AnalystPrep.

combinations of conventional models or industry-specific variations. Some of the variations include:

- **Private label or contract manufacturers:** A firm manufactures goods and is marketed by others. Example: Manufacturing might be based in one country and marketing done in another
- **Value-added sellers:** Distribute the products and manage complex elements like installation, personalization, service, or assistance. Example: service-intensive products such as Construction Machinery, enterprise software,
- **Licensing Arrangements:** A product-producing company uses someone else's brand and, in return, pays a royalty. Examples: Payment for the right to use the name of a celebrity
- **Franchise models:** franchisees have a well-defined and exclusive relationship with a franchisor to operate under a specific brand with proprietary products and processes. Common types of franchise models include restaurants, retailers, and auto dealerships.

Innovations of Business Models

The primary emphasis of business model discussions is on innovation. In this vein, the discussions cove on how new business models can introduced or adapted into the existing market.

Business model innovation often goes hand in hand with technological innovation and is typically led by new market entrants rather than established industry players. For instance, consider the airline industry. The business model innovation has been mainly low-cost and ultra-low-cost airlines, with the following innovative features:

- Customer: leisure, mass market
- Product: Point-to-point flights
- Low prices

© 2014-2024 AnalystPrep.

- No frills, low costs
- Channel: direct, digital sales

Implication of Digital Technology on Business Models

Large-scale business model innovation was around long before the advent of digital technology. However, the rapid and open-ended advance of digital technology has dramatically transformed business operations, evidenced by significant reductions in the costs of communication, information exchange, and financial transactions.

Therefore, some of the implications of the technology on businesses include:

- Location does not matter.
- Outsourcing is easily achievable.
- Marketing is easy and cost-effective to reach certain groups of customers regardless of location.
- Development of powerful network effects that can be easily accessible by many firms.

Network Effects and Platform Business Models

Network effects refer to the increase in the value of a network to its users as more users connect. Network effects lead to the development of different network-based business models. A good example is China's WeChat messaging and payment platform.

Network effects can also apply to pre-internet businesses. For instance, telephone service, payment systems, and financial infrastructure such as stock exchanges.

Classification of Network Effects

Network effects can be classified into one-sided or multi-sided. **One-sided** networks consist of only a single **homogeneous** group using a network. Examples include telephone services and

© 2014-2024 AnalystPrep.

peer-to-peer payment systems, such as Venmo.

On the other hand, multi-sided(two-sided if we only have two types of users in the network) networks consist of more than two or more types of users. An example is credit and debit card networks, whose users consist of the merchant and the cardholder users. Another example includes digital marketplaces.

Network Effect and Crowdsourcing

Network business models frequently leverage crowdsourcing. In crowdsourcing business models, users can contribute directly to the value of a product. Crowdsourcing involves user communities that allow voluntary collaboration among users of a product or users with either low or no regulation.

Examples include social media such as TikTok and Douyin, open-source software, and knowledge aggregation sites such as Wikipedia.

© 2014-2024 AnalystPrep.

Question

Which of the following is *least likely* found in a firm's business model?

A. Target customers.
B. Financial forecasts.
C. Pricing methodology.

The correct answer is B.

Financial forecasts are detailed information usually found in a business plan.

A and C are incorrect. Features of a business model should highlight the following aspects:

- Target customers (or market) of the firm.
- Offering of a firm.
- Pricing of the firm.
- Value proposition of the firm.
- Profitability and unit economics of the firm.

© 2014-2024 AnalystPrep.