



Module 2

Different types of investments

Prepared by Pamela Peterson Drake, Ph.D., CFA

1. Overview

An investor can invest directly in securities or indirectly. **Direct investing** involves the purchase of a security. In this case, the investor controls the purchase and sale of each security in their portfolio. **Indirect investing** involves investing in mutual funds, closed-end funds, or exchange-traded funds. In this case, the investor does not control the composition of the fund's investment; the investor only controls whether to buy or sell the shares of the fund.

A. Direct investing

We'll introduce you to alternative investment vehicles in this module, but we will go into much greater detail in later modules. We can classify most direct securities into the following types:

1. Money market securities e.g., Treasury bills, commercial paper
2. Capital market securities e.g., Municipal bonds, corporate bonds, stocks
3. Derivatives e.g., Options, futures

i) Money market securities

Money market securities are short-term, highly liquid, low-risk debt of governments, banks, or corporations. These include:

- U.S. Treasury bills (T-Bills)
- Negotiable certificates of deposit (CDs)
- Commercial paper
- Eurodollars
- Repurchase agreements
- Bankers' acceptances

The rate on U.S. Treasury bills is often used as a **reference rate** -- benchmark for quoting and analyzing rates.¹ For example, if the rate on the U.S. T-Bill is 3.5% and the rate on a specific certificate of deposit is 4.2%, we say that there is a spread of 70 basis points (bp). The spread is simply the difference between the rate on the CD and the rate on the T-Bill, quoted in terms of **basis points**, where one basis point (bp) is 1% of 1% (or in other words, there are 100 bp in a 1% yield).

There are two different methods that are commonly used in quoting T-Bill rates, the **discount yield basis** and the **investment yield basis**. T-Bills are sold at a discount and do not pay interest, so what you earn on the T-Bill is the difference between what you paid and what you get at maturity. The discount yield basis is the conventional method for quoting T-Bill rates, but this method tends to understate the true yield:

¹ Another common reference rate is the **London InterBank Offer Rate (LIBOR)**.

$$\text{Discount yield} = \frac{(\text{Face value} - \text{Purchase price})}{\text{Face value}} \times \left[\frac{360}{\text{Maturity of bill in days}} \right]$$

The investment yield basis is useful in comparing T-bill yields with those of other short-term securities:

$$\text{Investment yield} = \frac{(\text{Face value} - \text{Purchase price})}{\text{Purchase price}} \times \left[\frac{365}{\text{Maturity of bill in days}} \right]$$

The two primary differences between these yields are that

1. the denominator in the first term is different (face value for are discount basis, purchase price for the investment yield), and
2. the number of days used for annualization (360 for the discount yield, 365 for the investment yield).

Does it make a difference? It is important to be precise in all communications regarding pricing and yields, so it is important to understand the difference between these two methods of stating yields. If you would like to compare the discount basis and investment yields, check out the recent rates for U.S. T-Bills at the Bureau of Public Debt web site, <http://www.publicdebt.treas.gov/AI/OFBills> .

Example: Yields on Treasuries

Problem

Consider a 182-day Treasury bill that has a price of \$9,835 per \$10,000 face value.

1. What is the discount yield?
2. What is the investment yield?

Answer

$$1. \quad \text{Discount yield} = \frac{(\$10,000 - \$9,835)}{\$10,000} \times \left[\frac{360}{182} \right]$$

$$\text{Discount yield} = 0.0165 \times 1.97802 = 0.032637 \text{ or } 3.2637\%$$

$$2. \quad \text{Investment yield} = \frac{(\$10,000 - \$9,835)}{\$9,835} \times \left[\frac{365}{182} \right]$$

$$\text{Investment yield} = 0.01678 \times 2.0055 = 0.033646 \text{ or } 3.3646\%$$

ii) Long-term debt

Long-term debt securities consist of notes and bonds, which are legal obligations for the issuer to repay the borrowed funds. Notes and bonds are long-term debt securities issued by governments, governmental agencies, municipalities, or corporations. Debt securities are characterized by a **face value** (the amount due at maturity) and an interest rate (unless they are specifically a **zero coupon bond**). Debt instruments may have additional features; they may be **convertible** (that is, exchangeable into another security) or **callable** (that is, they may be bought back by the issuer).

U.S. Treasury bonds are debt of the federal government. These are interest-bearing securities that have maturities ranging from ten to thirty years. They are generally sold at face value and pay interest; some Treasury bonds are **inflation-indexed** (TIPS).

There are also government and government-sponsored agency securities. These agencies include:

- **Government National Mortgage Association** (GNMA, Ginnie Mae)
- **Federal National Mortgage Association** (FNMA, Fannie Mae) – home mortgages
- **Federal Home Loan Mortgage Corporation** (FHLMC, Freddie Mac) – home mortgages

- Federal Home Loan Bank (FHLB) -- home mortgages
- Farm Credit System (FCS) – farm credit
- SLMA (Sallie Mae) – student loans

Municipal securities are bonds and notes sold by state, county, or city governments, or any other governmental body (e.g., airport authority). These securities are either **general obligation** bonds, which are backed by “full faith and credit” of the government, or **revenue bonds**, which are repaid with revenues generated by the financed project (e.g., municipal airport). Because municipal securities are often tax free with respect to federal taxation, we must convert a municipal yield into an equivalent taxable yield in order to compare investments. To find the **tax-equivalent yield** (TEY),

$$\text{Taxable equivalent yield} = \frac{\text{Tax-exempt municipal yield}}{(1 - \text{marginal tax rate})}$$

where the **marginal tax rate** is the investor’s tax rate on his/her next dollar of income.

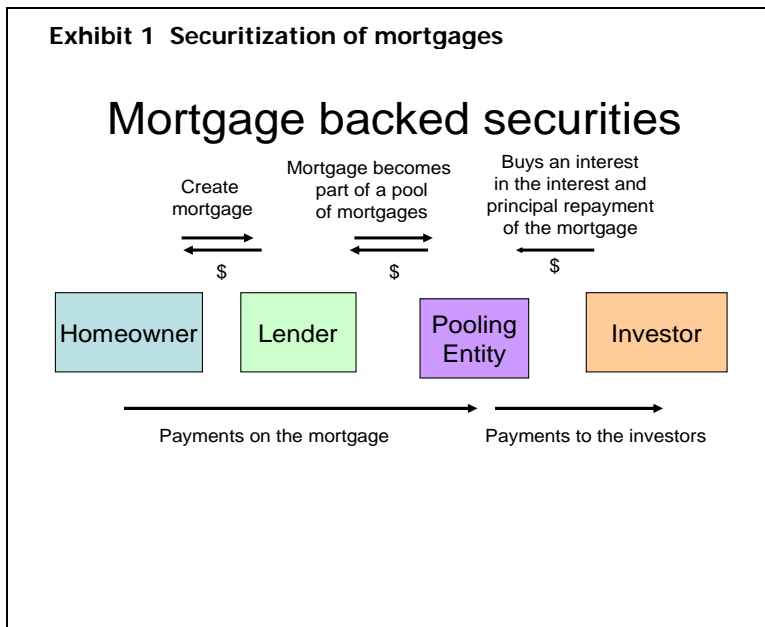
Another form of debt security is the **asset backed security**. Asset backed securities are securities that are created by pooling debts and selling the interests in these debts. The process of pooling these debts into a trust and selling interests in this trust is referred to as **securitization** and is diagrammed in Exhibit 1 for home mortgages.

Examples of tax equivalent yields

Assuming a marginal tax rate of 35% ...

Tax-exempt municipal yield	Taxable equivalent yield
10%	15.385%
5%	7.692%
3%	4.615%
4%	6.154%

Examples of assets that are securitized include credit card receivables, accounts receivable, student loans, leases, and auto loans.



Mortgage backed securities are asset-backed securities that are pools of mortgages. These mortgages may be fixed rate, floating rate, residential, or commercial mortgages.

Another debt investment is the corporate note or bond. Corporate notes and bonds typically pay interest and may have conversion or call features. A **convertible bond** is a bond that allows the investor to exchange it for another security, such as shares of stock of the company, at a predetermined rate. In other words, a convertible

bond is a bond with an embedded option: the investor has a put option, allowing the exchange of the bond for another security (typically stock). A **callable bond** is a bond in which the issuer

has the option to buy the bond back from the investor at a predetermined price (the **call price**). The callable bond therefore has an embedded option: the issuer has the option to “call” (that is, buy) the bond back from the investor.

The credit quality of corporate bonds is indicated by a bond rating. There are three major rating services:

1. [Moody's](#),
2. [Standard & Poor's](#), and
3. [Fitch Ratings](#)

Bonds in the top two classes are referred to as **high quality bonds**. Bonds in the top four classes are referred to as **investment grade debt**. Bonds rated lower than in the top four classes are referred to as **speculative debt**, **high yield debt**, or **junk bonds**. The Standard & Poor's bond ratings are listed in Exhibit 2.

The bond rating agencies had been criticized for the slowness in revising bond ratings for deteriorating corporate situations (e.g., Enron and Kmart). The SEC has been looking at the role of bond rating agencies and whether there should be a closer scrutiny of rating agencies. (See [Spotlight on Credit Rating Agencies](#), for example).

In response to the lag between company events and the ratings revision, rating services now have **implied ratings**, also known as **market implied ratings**. The rating service uses the yield spread of a company's bonds relative to that of the similar-maturity government bond to back into the perceived risk of the company by investors, and then associates this perceived risk with a rating. The rating services disclose both the assigned bond rating and the implied bond rating for securities that it rates.

Exhibit 2 Standard & Poor's bond ratings

Investment grade

AAA	Highest quality. Ability to pay interest and principal very strong.
AA	High quality. Ability to pay interest and principal strong.
A	Medium to high quality. Ability to pay interest and principal, but more susceptible to changes in circumstances and the economy.
BBB	Medium quality. Adequate ability to pay, but highly susceptible to adverse circumstances.

Speculative grade

BB	Speculative. Less near-term likelihood of default relative to other speculative issues.
B	Current capacity to pay interest and principal, but highly susceptible to changes in circumstances.
CCC	Likely to default, where payment of interest and principal is dependent on favorable circumstances.
CC	Debt subordinate to senior debt rated
CCCC	Debt subordinate to senior debt rated
CCCD	Currently in default, where interest or principal has not been made as promised.

Source: Standard & Poor's *CREDITWEEK*, "Long-term Rating Definitions," February 11, 1991, p. 128.

What's a yield spread?

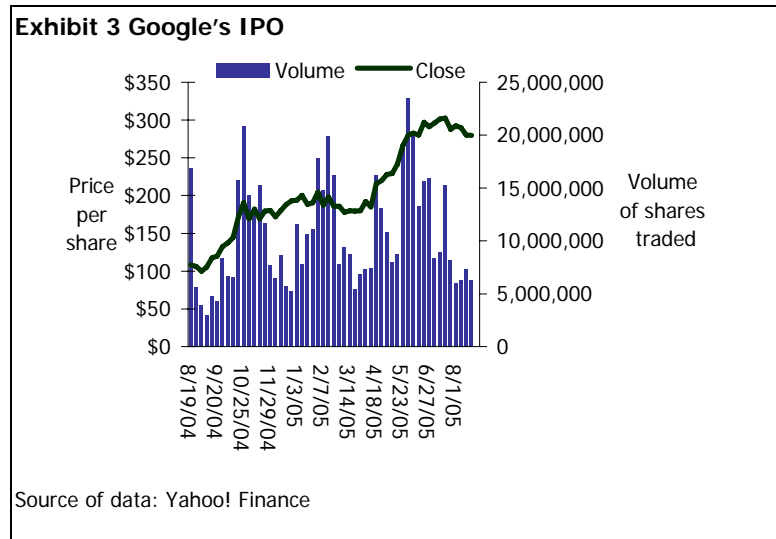
A **yield spread** is the difference between the yield on a debt instrument and the yield on a similar-maturity default-free bond (that is, a government bond). For example, if 10-year corporate bond has a yield of 5.41% and the yield on a 10-year U.S. government bond is 4.74%, the yield spread is the difference: 5.41% - 4.74% or 0.67%. However, yield spreads are always quoted using basis points (bp). A **basis point** is 1/100 of 1%. In other words 1% is 100 bp. This means that the yield spread in this example is 67 bp.

Because the difference between a 10-year corporate bond and a 10-year U.S. government bond is the possibility of default, the yield spread is used as a measure of risk: the greater the yield spread, the greater the risk.

iii) Equity securities

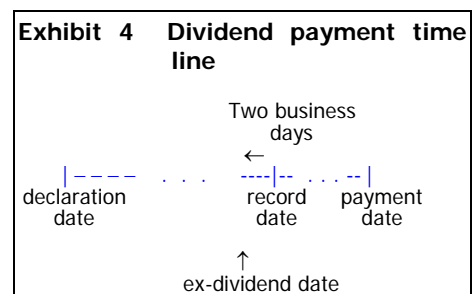
An **equity security** is an ownership interest in a corporation, represented by a share of stock. There are two types of stock that corporations issue: preferred stock and common stock. **Preferred stock** has preference over common stock with respect to income and claims on assets. **Common stock** is the residual ownership of the company.

When a company first goes public (that is, it is selling shares to the public, becoming a publicly-traded corporation), this transaction is referred to as an **initial public offering**. There is usually a lot of fanfare when a large, privately-held corporation has an initial public offering. Consider Google, which went public August 13, 2004 by offering 19.6 million of its Class A shares at \$85 per share. In the first day of trading, the stock rose to \$100 per share. Since the offering, Google stock has risen to over three times its offering price, as we show in Exhibit 3.



Cash flows to shareholders are referred to as **dividends**, whereas additional shares given to shareholders are referred to as **stock dividends**. If the board of directors of a company feels the price of the stock is too high, it will split the stock in a **forward stock split**, or more commonly referred to as simply a **stock split**. A forward stock split is a proportionate increase in the number of shares outstanding, e.g., 2:1 or 3:1. If a company feels its stock is too low, it may perform a reverse stock split. A **reverse stock split** is a proportionate decrease in the number of shares outstanding (e.g., 1:2 or 1:3).

Cash dividends are not an obligation of a corporation, but rather are determined at the discretion of the board of directors. The board will declare on the **declaration date** that a specified dividend be paid on the **payment date** to shareholders as of the **record date**. The exchanges then specify the **ex-dividend date** based on the record date as two business days prior to the record date. These dates are shown in the time line in Exhibit 4. If an investor buys the stock on the ex-dividend date, they do not receive the forthcoming dividend; if he/she buys the stock the day before the ex-dividend date, he/she will receive the forthcoming dividend.



iv) Derivatives

Derivatives are not themselves equity interests or debt securities, but rather represent a right or obligation related to equity or debt securities. Forwards, futures, and options are types of derivative securities. These securities are considered derivatives because they “derive” their value from another asset – the underlying asset (or simply “the underlying”). For example, an option on a stock is a right to buy a stock, so its value depends on the price of the underlying – the stock.

An **option** is a contract that gives its owner the right, but not the obligation, to conduct a transaction involving an underlying asset at a predetermined future date and at a predetermined price (exercise or strike price):

- A **call option** is the right to buy the underlying
- A **put option** is the right to sell the underlying

“Writing” an option is taking the opposite position.

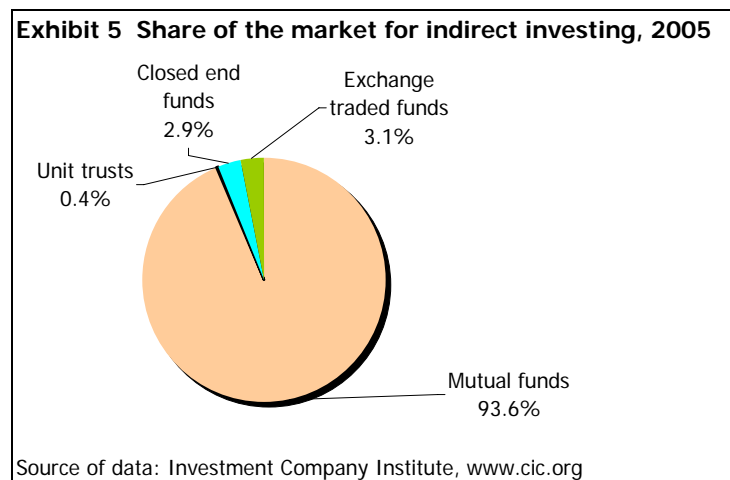
A **forward contract** is a contract that gives the contract holder the right and the legal obligation to conduct a transaction for a specified quantity of an asset at a specific time in the future. A **futures contract** is a standardized forward contract. Though futures contracts originated in agricultural commodities and metals, there is now an active market in futures related to financial instruments, such as the S&P500 futures contracts.

B. Indirect investing

Investment companies are organizations that hold portfolios of securities, such as **Fidelity**, **Janus**, or **T. Rowe Price**. These investment companies provide an opportunity for investors to own a part of a fund’s portfolio. There are several different types of funds:

- **Unit investment trust (UIT)**, which is an unmanaged, fixed income portfolio.
- **Closed-end investment company**, which is an offering like stock; the funds shares trades like stock in secondary market.
- **Open-end investment company (a.k.a. mutual fund)**, which is open-ended (that is, the fund accepts additional investors’ funds). This type is managed, marketed aggressively.
- **Exchange traded fund (ETF)**, which is a passively managed fund that is designed to mimic an index.

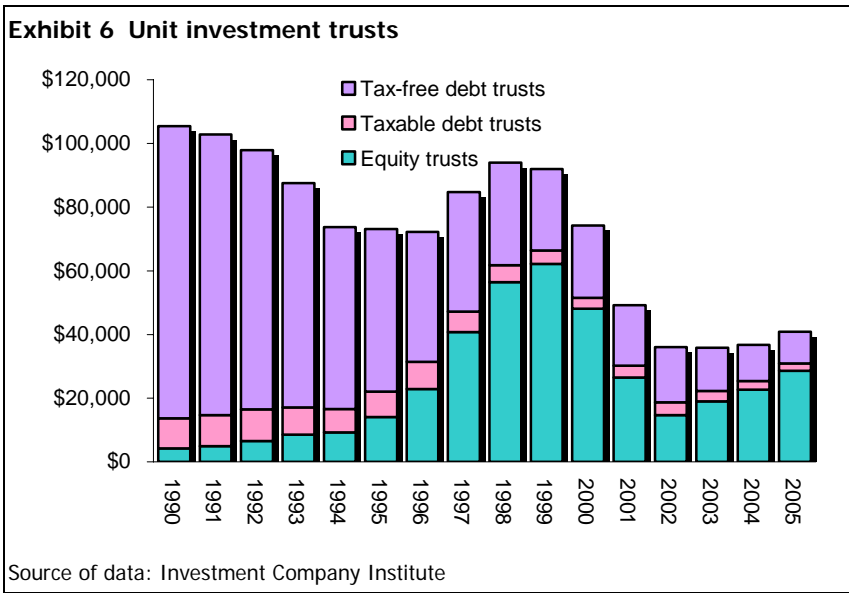
As you can see in Exhibit 5, the mutual funds are the largest form of indirect investing in terms of amount invested in funds.



i) Unit investment trusts

A **unit investment trust** is created from a one-time offering of a fixed number of units. The offering is in the form of an initial public offering. The portfolio is a fixed, passively-managed portfolio – that is, a buy and hold strategy. UITs have a fixed termination date, which may be one year, thirty years, or more.

The UIT portfolios may consist of equity investments, fixed income investments, or some combination. There are thousands of UITs, with many specializing in sector investments. UITs



distribute any dividend or interest income to investors, but there are no capital gain consequences until the investor buys or sells their shares.

A unit is typically \$1,000 initially and is sold by brokers. Units of a UIT are valued at the net asset value and redeemable at the NAV, though the sponsor may create a limited secondary market for the units.

As you can see in

Exhibit 6, the popularity of unit investment trusts has been declining over the past 15 years and the type of UIT investors prefer has changed from tax-free debt trusts to equity trusts.

Example: Net asset value (NAV)

The value of a share in a mutual fund or UIT is determined by the funds' net asset value. Mutual funds and UIT calculate NAV each day and report the NAV based on a single share.

Example: suppose the fund owns three investments:

Stock	Market value
A	\$12,000
B	\$10,000
C	<u>\$8,000</u>
Total value of fund	\$30,000
Number of shares of fund	<u>1,000</u>
NAV	\$30 per share

Unit investment trusts

Advantages

- Diversified portfolio
- Buy-and-hold strategy (minimize fees)
- Can sell units at any time at NAV.
- Low administrative costs

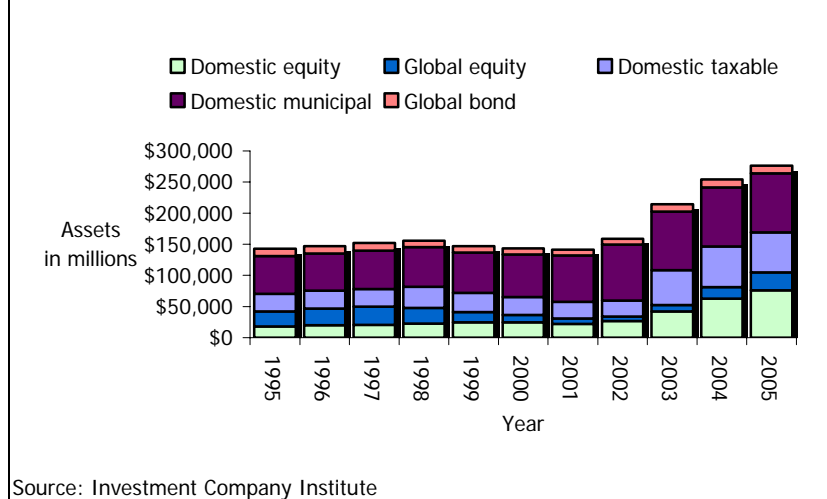
Disadvantages

- Portfolio does not change with market conditions.

C. Closed end funds

Closed end funds are created with a fixed number of shares are sold at one time, using an **initial public offering (IPO)**. The shares of the fund then trade in secondary market (e.g., Nasdaq, NYSE). The price of the fund share is determined by the market, and this price may be greater or less than the shares' NAV. Shares of closed end funds are not redeemable; that is, an investor cannot "cash out" of the fund shares, but rather must sell the shares to another investor in the secondary market.

Exhibit 7 Closed-end funds



Registered investment advisers manage these funds. Because investors are not able to redeem shares, the fund is able to invest in illiquid securities. Closed-end funds have increased in popularity in the past few years, as you can see in Exhibit 7.

Closed-end funds

Advantages

- Investors can sometimes buy shares at a discount from the NAV and sell shares at a premium.
- Do not have to sell shares to meet redemption demands.
- Distributions according to prescribed schedule.
- Lower fees than most mutual funds.

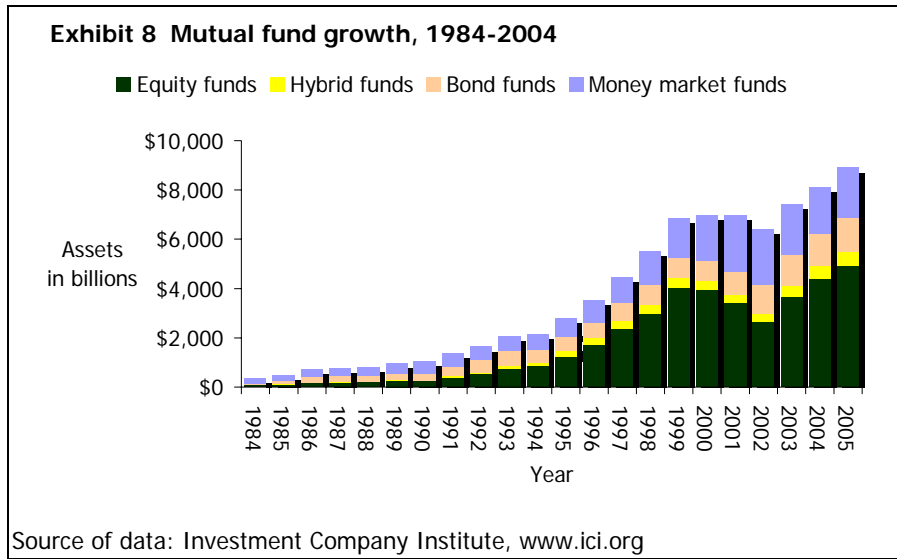
Disadvantages

- Investors pay taxes on income and capital gains annually.
- Fixed number of shares, hence less liquidity

D. Mutual funds

Mutual funds (a.k.a. **open-end funds**) purchase investments using the pooled funds of the investors. The fund may invest in stocks, bonds, and many other investments. There are large fund "families," such as Fidelity, Vanguard, Janus, and T. Rowe Price, that will maintain many different types of funds, with different purposes and different portfolio managers. The investment adviser of the fund (the fund manager) directs the investments according to the fund's objectives.

Purchases of mutual fund shares can be made at prices at the close of the day, but not during the day. Any dividends and/or interest are passed through to investors in the form of an income distribution. If there are any capital gains (net of losses), these are also passed through to investors in the form of a capital gains distribution.



There are many different types of mutual funds, which may be classified as follows:

- Money market funds
- Bond funds (domestic taxable; domestic non-taxable)
- Global
- Equity funds (domestic; global)
- Hybrid funds

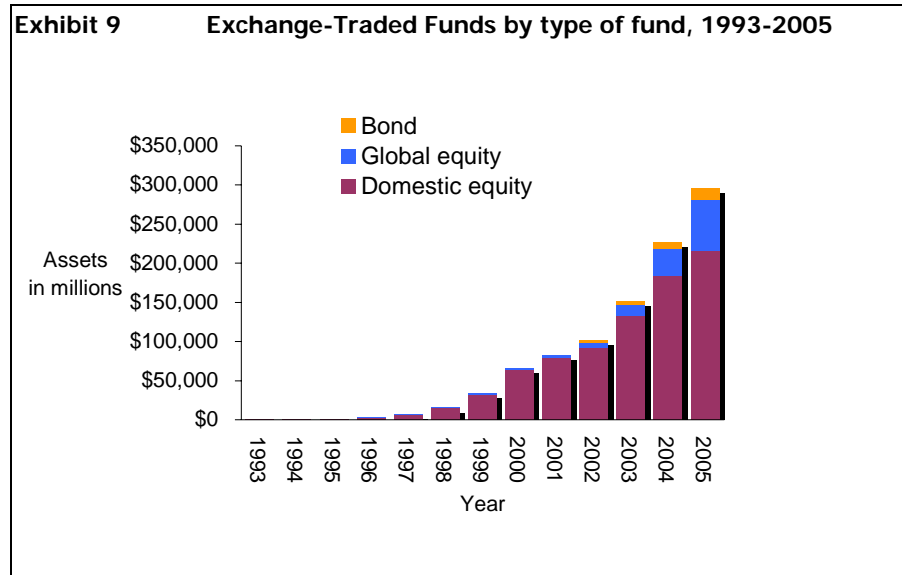
As you can see in Exhibit 8, investors' interest in mutual funds has grown over the past twenty years.

Mutual funds	
<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> ▪ Diversification ▪ Professional management ▪ Liquidity ▪ Convenience 	<ul style="list-style-type: none"> ▪ No guarantees ▪ Fees ▪ Tax effect

E. Exchange-traded funds (ETFs)

An **exchange-traded fund** (ETF) is an indexed fund; its composition matches the specified index. The first exchange traded fund (ETF) was in 1993, which is a Standard & Poor's Depository Receipts (SPDRs) ETF, created by the AMEX. Examples of ETFs include [QQQs](#), [iShares](#), [SPDRs](#) and [Diamonds](#).

The management fee of an ETF is low, approximately 12bp, and an ETF's price is generally close to its NAV.²



Exchange traded funds, while a currently a small portion of the indirect investment market, have been growing in popularity.

Exchange-traded funds

Advantages

- Tax advantage vis-à-vis mutual funds [i.e., tax efficient]
- Low turnover within the fund (and hence lower fees).
- Investors can buy or sell ETFs any time during market hours.

Disadvantages

- Transactions fees for buying and selling

F. Mutual fund fees and performance

One of the current issues regarding funds is the fee structure and disclosure of these funds. Many funds are not forthcoming in disclosing their fees to investors, which has caused concerns.

Funds may be **load** or **no-load funds**. The distinction between load and no-load is with respect to whether the fund has a **sales load**, which is a charge either up front or when the investor redeems the shares (that is, a **deferred sales charge**). Loads (that is, sales charges) range from 1% to 9% of the investment's value.

Whether a fund is a no-load or load fund, there are still many other types of fees that the investor may incur, including:

- **Redemption fee**, paid to fund to defray costs associated with sale of shares (SEC limits to 2%);
- **Purchase fee**, paid to the fund (not broker) to defray fund's cost associated with purchase;

² 100 basis points (BP) is equivalent to 1%. Therefore, 12 bp is 0.12%.

- **Exchange fee**, paid when an investor transfers his/her funds to another fund in the same group.
- **Account fee**, which is a separate fee associated with the maintenance of the fund;
- Management fees, which are paid out of fund assets to adviser for services; and
- **12b-1 fee**, which is a distribution fees for marketing and selling shares [NASD limits to 0.75% per year].

There is no evidence that load funds do better than no-load funds. Performance of a fund is dependent on the management of the portfolio and the fees other than the loads that the fund may charge.

Funds that invest in stocks tend to outperform the market by 1.3% per year, before considering expenses and returns on non-stock investments. The net returns on funds under-perform the market by 1%. Of this difference, 0.7% is due to underperformance of non-stock holdings and 1.6% is due to expenses and transactions costs.

For more information, check out the SEC's guide to [mutual funds](#) and [mutual fund fees](#). For news or data on mutual funds, check out:

- [CNN Money Mutual Funds site](#)
- [Mutual Funds: Investing in America's Future, Investment Company Institute](#)
- [Morningstar.com](#)
- [Yahoo! Finance Mutual Funds Center](#)

Current issues regarding mutual funds

1. **Mutual fund governance.** The Securities and Exchange Commission is proposing that mutual funds adopt governance such that the Board of Directors is comprised of 75% independent directors and chaired by an independent director.
2. **Redemption fee rule.** The Securities and Exchange Commission is proposing amendments to the redemption fee rule that would provide more transparency for mutual funds regarding the investments made by accounts held by broker-dealers for clients. This is in response to market timing problems revealed in 2005.

2. Learning outcomes

- LO1 Distinguish between indirect and direct investing
- LO2 Calculate the discount and investment yields.
- LO3 Calculate the tax equivalent yield on an investment given the tax-exempt yield.
- LO4 Distinguish between an investment grade and speculative bond on the basis of bond ratings.
- LO5 Describe the process by which asset-back securities are created.
- LO6 List the cash flows expected from stocks and bonds
- LO7 Define and give an example of a derivative security.
- LO8 List the advantages and disadvantages of unit investment trusts, closed-end funds, open-ended funds, and exchange traded funds.
- LO9 List the types of fees investors pay for no-load and load funds.
- LO10 Calculate the net asset value of a fund.

3. Module tasks

A. Required readings

- Chapter 2, "Investment Alternatives," *Investments: Analysis and Management*, by Charles P. Jones, 9th edition.
- Chapter 3, "Indirect Investing," *Investments: Analysis and Management*, by Charles P. Jones, 9th edition.

- [Invest Wisely: An Introduction to Mutual Funds](#), Securities and Exchange Commission.

B. Optional readings

- [Appendix 3-A](#)
- [Investment Choices](#), a compilation by the Securities and Exchange Commission of basic information on the different types of direct and indirect investments.

C. Practice problems sets

- [Textbook author's practice questions, with solutions, for Chapter 2](#)
- [Textbook author's practice questions, with solutions, for Chapter 3](#)
- [Studydrive® activity](#)

D. Module quiz

- See the course schedule for the quiz window.

E. Project progress

- Meet with your group members online and assign duties.
- Learn about your company's industry.
- Follow current events pertaining to your own company.

4. What's next?

In Module 3, we'll take a look at how securities are traded. Specifically, we will examine the different markets that exist in the U.S. and elsewhere, the mechanics of trading, and market barometers (a.k.a. market indices).