University of Richmond
Robins School of Business™

§6. Investment Vehicles

FIN 366: Investments

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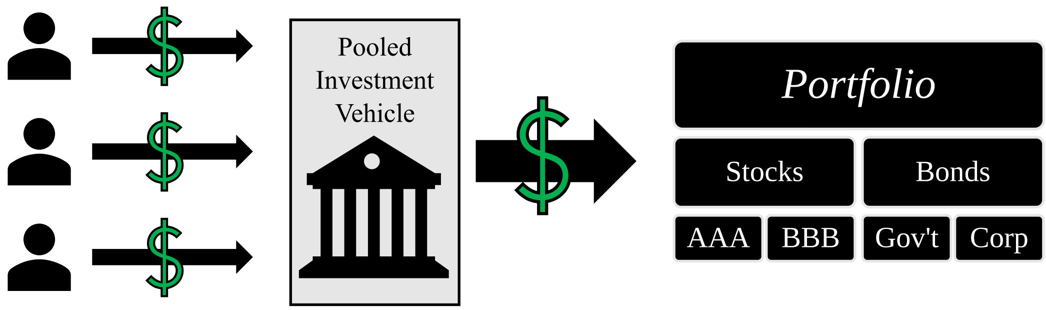
Pooled investment vehicles are entities, often referred to as *funds*, that an adviser creates to pool money from multiple investors. Investors purchase an interest in the fund entity, and the adviser of the fund uses that money to make investments and create **portfolios** of various financial instruments on behalf of the fund. Investors generally share in the profits and losses in proportion to their interest in the fund.[1]

Figure 1: Pooled Investment Vehicles



Pooled investment vehicles are often managed by **institutional investors** or **fund families** (including the "Big Four": **Vanguard**, **State Street**, **BlackRock**, and **Fidelity**). The funds they offer give the benefit of record keeping and **diversification**, which reduces risk through holding several securities for a given dollar amount invested.

Common types of pooled investment vehicles include (1) **investment companies** and (2) **private funds**.

Investment Companies

Investment companies are regulated by the **Investment Company Act of 1940**.[2] Much like publicly traded companies, investment companies:

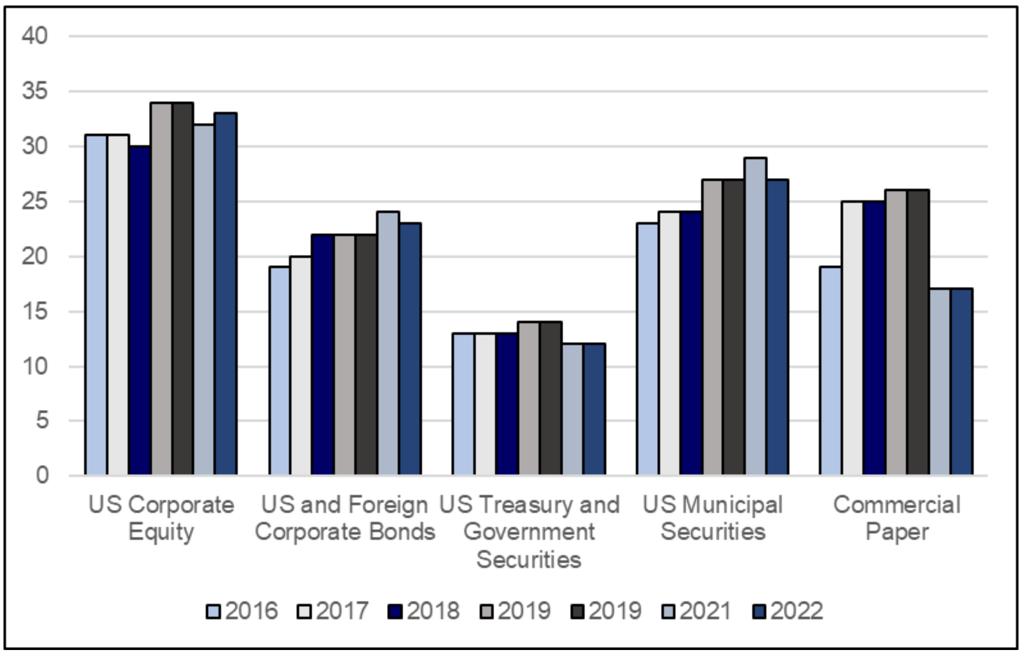
1. Must register with the SEC and file regular disclosures
2. Provide detail on their investments, holdings, and fees
3. Are restricted in how risky their investments can be (i.e., limited leverage, shorting, derivatives, and illiquidity)
4. Generally available to the investing public

Investment Company is an SEC designation[3] consisting of:

1. Open-end funds (mutual funds and ETFs) - $29 *trillion* in assets in US
2. Closed end funds - $252 *billion*
3. Unit investment trusts - $73 *billion*

The Investment Company Institute annually releases a free report with summary information on Investment Companies: https://www.ici.org/fact-book.

Figure 2: Investment Companies' Ownership of Common Asset Classes (%)



Explore the above figure in greater detail in the Excel file *Investment Companies* at josephfarizo.com/fin366.html.

Open-End Funds

Open-end funds are portfolios of securities *bought and redeemed* through a fund sponsor or **fund family** (i.e., Vanguard, Fidelity, Blackrock) that is responsible for maintaining the portfolio of underlying assets.

Mutual Funds

The term **mutual fund** and **open-end fund** are often used interchangeably. They represent mutual ownership by several investors of a portfolio. As of 2022, they hold about $22 trillion in assets.

Example: You want to invest in a mutual fund that tracks the S&P 500 closely. You visit Vanguard's website to create an account and purchase 10 shares of Vanguard's S&P 500 Mutual Fund (ticker VFIAX) which has an **net asset value (NAV)** of $450:

$$NAV = \frac{Market\ Value\ of\ Assets\ in\ Fund - Fund\ Liabilities}{Fund\ Shares\ Outstanding}$$

Market Value of Assets in Fund is the value of all the shares of the S&P 500 the fund owns. *Fund Liabilities* include money the fund owes to operate, such as operational expenses, wages due, and advisory fees. *Fund Shares Outstanding* is the number of shares of the *fund*, the VFIAX, outstanding.

You pay 10 × $450 = $4,500 to Vanguard. Vanguard pools your money with millions of other investors and proportionally purchases all companies in the S&P 500 to divide among investors.

The S&P 500 index rises over the year. The NAV is now $500. You decide to cash out. You *redeem* your shares with Vanguard. Vanguard proportionally sells some of the underlying stock in its portfolio, giving you 10 × $500 = $5,000 in cash, an 11.11% gain. The percent change in the NAV represents an investor's return to holding a mutual fund.[4]

As the example shows, open-end funds are "open" in that when new investors buy into the fund, the investment company purchases new underlying assets (i.e., stocks in the S&P 500). When investors leave the fund, they proportionally sell the underlying assets to pay the investor.

Mutual funds generally wait until the end of the day to "settle," accounting for all the buyers and sellers into and out of the fund on that day.

Exchange Traded Funds

Exchange Traded Funds (ETFs) are similar to mutual funds, but shares of the fund are traded on exchanges throughout the day rather than bought through and redeemed by the investment company at the end of the day.[5] They are growing in popularity relative to mutual funds. As of 2022, they hold about $6.5 trillion in assets.

- Buying on margin and short selling is possible
- Generally, lower costs relative to mutual funds, but subject to bid-ask spreads and broker commissions

> **EXAMPLE:** You want to invest in an ETF that tracks the Russell 3000 closely. You visit BlackRock's website and identify their iShares Russell 3000 ETF (IWV). You log in to your Charles Schwab or Robinhood brokerage account and buy the shares from someone in the market who is selling the shares of this ETF.
>
> Each share is worth $200. You pay a total of 10 × $200 = $2,000 to the seller. You don't need an account with BlackRock, and BlackRock does not need to purchase shares of the underlying assets on your behalf to add to the fund.
>
> The Russell 3000 index rises. As a result, your ETF shares are now worth $250. You decide to sell your shares on an exchange to another investor, making 10 × $250 = $2,500, for a rate of return of 25%. BlackRock does not need to sell shares of the underlying assets on your behalf for you to cash out as another investor paid you for those ETF shares.

Mutual funds and ETFs are "pass-throughs" not subject to double taxation. The fund investor is responsible for paying tax when the investment company earns capital gains or dividends.

Why might excess **turnover**, or buying and selling of securities in the fund's portfolio, be problematic for investors?

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Authorized Participants (APs)[6] are large financial institutions that play an important role in keeping the price of an ETF share in line with its NAV. APs work with the ETF to **create** and **redeem** ETF shares. Thus, the ETF's price and NAV are kept near one another.

> **EXAMPLE:** An ETF has a share price of $100, but the per-share value of the stocks that make up the ETF is $98 (NAV = $98). Demand for ETF shares outpaces that of the underlying stocks, so the AP helps to create new ETF shares. The AP will buy shares of the underlying stocks to exchange for shares of the ETF with the ETF sponsor, and the AP sells these ETF shares to dealers: **creation**.
>
> If an ETF has a share price of $100, but the per-share value of the stocks that make up the ETF is $102 (NAV = $102), the AP helps to reduce the supply of the ETF to bring the price of the ETF up to the NAV. The AP buys shares of the ETF to deliver to the ETF sponsor in exchange for shares of the underlying stocks: **redemption**.

ETFs are generally more **tax efficient** than mutual funds because the fund does not need to sell shares of the underlying stocks when investors want to cash out. A mutual fund, however, must sell shares of the underlying stocks to pay investors that redeem their shares, which can incur a capital gains tax that all investors in the fund bear. When an ETF investor cashes out, they *individually bear* any capital gains tax by selling their shares of the ETF to another investor.

Closed End Funds & Unit Investment Trusts

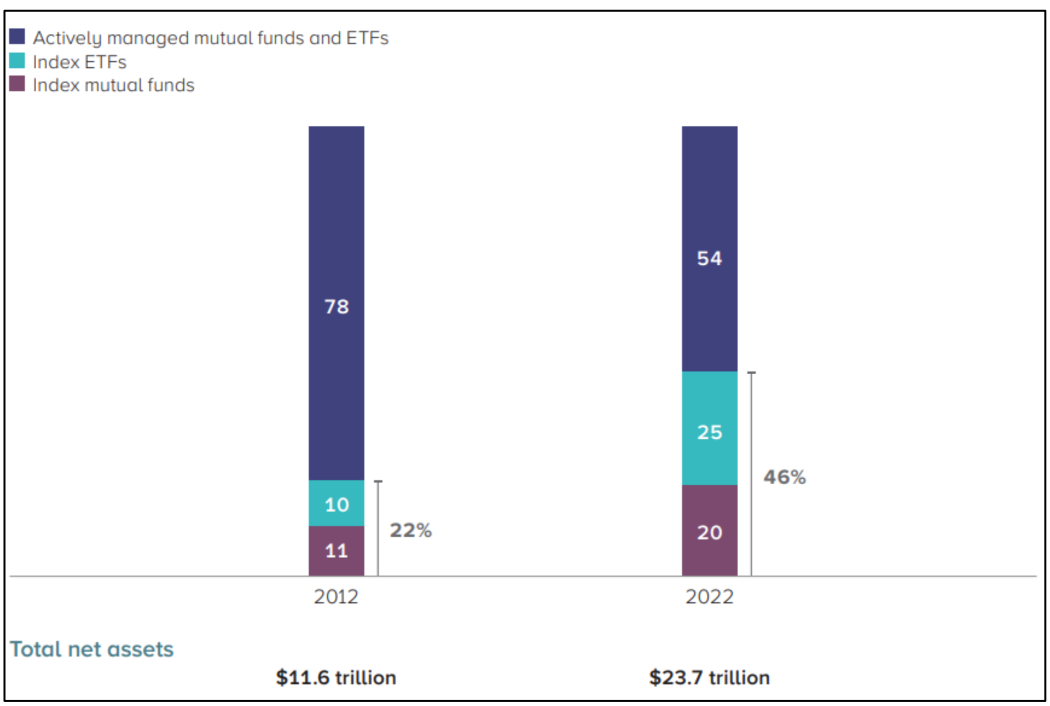
Closed-end funds trade on exchanges. They are a portfolio of pooled assets that raises a *fixed amount* of money through an IPO and do not raise additional funds or redeem shares. The composition of the portfolio can change as the manager sees fit. There are no APs in closed-end fund markets, meaning share prices *can and do* differ from fund NAV.

Unit Investment Trusts are portfolios of securities that *remains the same* throughout the life of the fund. These trusts are often referred to as *unmanaged*. An investor can redeem their shares with the trustee if they wish to cash out (similar to how an investor redeems shares with a mutual fund).

Fund Categories

Active or **actively managed funds** have managers that choose securities to buy and sell for the fund. **Index** or **passive** or **passively-managed** funds mimic an index, such as the S&P 500 or Wilshire 5000. Managers of index funds do not select which assets to include in the portfolio, but they deal with administrative tasks.

Figure 3: Index vs. Active Total Net Assets, ICI 2023 Fact Book[7]



Morningstar offers a mutual fund and ETF screener, as well as in-depth analysis of thousands of mutual funds.

Table 1: Investment Policies and Styles

Category	Description	Example
Money Market	Short-term government and corporate fixed income	Fidelity Money Market Fund[8]
Equity	80%+ in common stock	Fidelity Contrafund[9]
Sector	Equities within a particular industry	State Street SPDR Financials[10]
Bond	Longer-term government and corporate fixed income	Vanguard Total Bond Market[11]
Balanced or Target Retirement	Mix between stocks and bonds, shifting to more conservative through time	TIAA-CREF Lifecycle 2055[12]
Asset Allocation	Mix of different asset classes, changing through time at manager's discretion	American Funds Global Balanced[13]
Environmental, Social, and Governance (ESG)	Investing in sustainable company stocks	BlackRock iShares MSCI USA ESG Select[14]
Leveraged ETFs	Deliver returns 1.5x, 2x, 3x the *daily* return of an index	ProShares Ultra Pro QQQ[15]
Inverse and Inverse Leveraged ETFs	Deliver returns -1, -1.5x, -2x, -3x the *daily* return of an index	Direxion Bear 3x Tech Sector[16]

Leveraged ETFs use derivatives and borrowing to deliver their amplified returns. These securities are very risky and should not be held long-term since they are based on *daily* returns.

Assume you put $100 in an index fund and $100 in a 3x leveraged ETF tied to that same index. If the index falls 5% on the first day and rises 5% on the next day:

	Index	Amount	3x Index	Amount
Beginning		$100.00		$100.00
Day 1	-5%	$95.00	-15%	$85.00
Day 2	5%	$99.75	15%	$97.75

Fees and Expenses

Mutual funds may charge fees upon purchase, annually, and upon redemption to pay for administrative expenses, fund management, and marketing. Fee structure for the fund is disclosed in its **prospectus**[17], a document outlining the firm's strategy, risks, investments, and more (an example here for the Vanguard Mid-Cap Value Fund).[18]

1. **Front-End Load (0 to 6%)**
   - Commission or sales charge paid when purchasing shares
   - About 25% of money invested in mutual funds is in load-bearing funds

2. **Operating Expenses (0.015 to 5%)**
   - Annual
   - Pay manager and staff salaries, operational costs
   - Charged annually as a percent of fund assets

Expense Ratio

3. **12b-1 Charges (0.25 to 1%)[19]**
   - Annual
   - Fee for marketing, promotion, distribution costs

4. **Back-End Load (0 to 6%)**
   - An "exit fee" paid when you redeem your shares and cash out
   - May decrease annually (6% if in first year, 5% if in second year, etc.), percentage of withdrawal

According to the 2023 ICI Fact Book[20], average expense ratios have fallen from about 1% (0.27%) in 2000 to 0.66% (0.05%) in 2022 for active (index) equity mutual funds. ETFs have annual expense ratios and are subject to brokerage commissions and fees, but not loads.

Private Funds

Private funds are pooled investment vehicles *not* subject to the Investment Company Act. This permits private funds to take greater risks and operate with fewer disclosures.[21] They are not, however, exempt from all securities laws. Examples include **hedge funds**, **private equity**, and **venture capital**.

Hedge Funds

Hedge funds are pooled investment vehicles investing across a number of asset classes (often *liquid* assets) and strategies. Assets under management are about $5 trillion.

- Do not need to fully disclose holdings and strategy to the public
- Available only to institutions, wealthy, or skilled **accredited**[22] investors
- Often require minimum investments of $500,000 to $1 million
- Much more flexibility in shorting, leverage to invest, derivatives, physical asset investing, and currency speculation
- Often have a **2 and 20** fee structure, where the investor pays the fund a 2% annual management fee on the amount invested, plus a 20% performance fee on any profits the fund generates

Examples: Renaissance Technologies and AQR

Private Equity Funds

A **private equity fund** is a pooled investment vehicle, generally open to accredited investors and institutions, that often invests in public companies to take them private and improve efficiency. Their investment horizons tend to be around 5 years, at which point they exit by either selling a firm or taking the firm public to cash out. Assets under management are about $5 trillion.

- Often take on significant leverage to make acquisitions
- **Limited Partners** (LPs) are the investors, while **General Partners** (GPs) are the managers of the portfolio

Examples: Apollo Global Management and KKR & Co

Venture Capital

Venture capital funds consist of investments in early-stage companies. Typically, the fund is open to accredited investors and institutions, provides startup capital and management, and exits a position after a merger, acquisition, or IPO of the company it invests in. Assets under management are about $1-2 trillion.

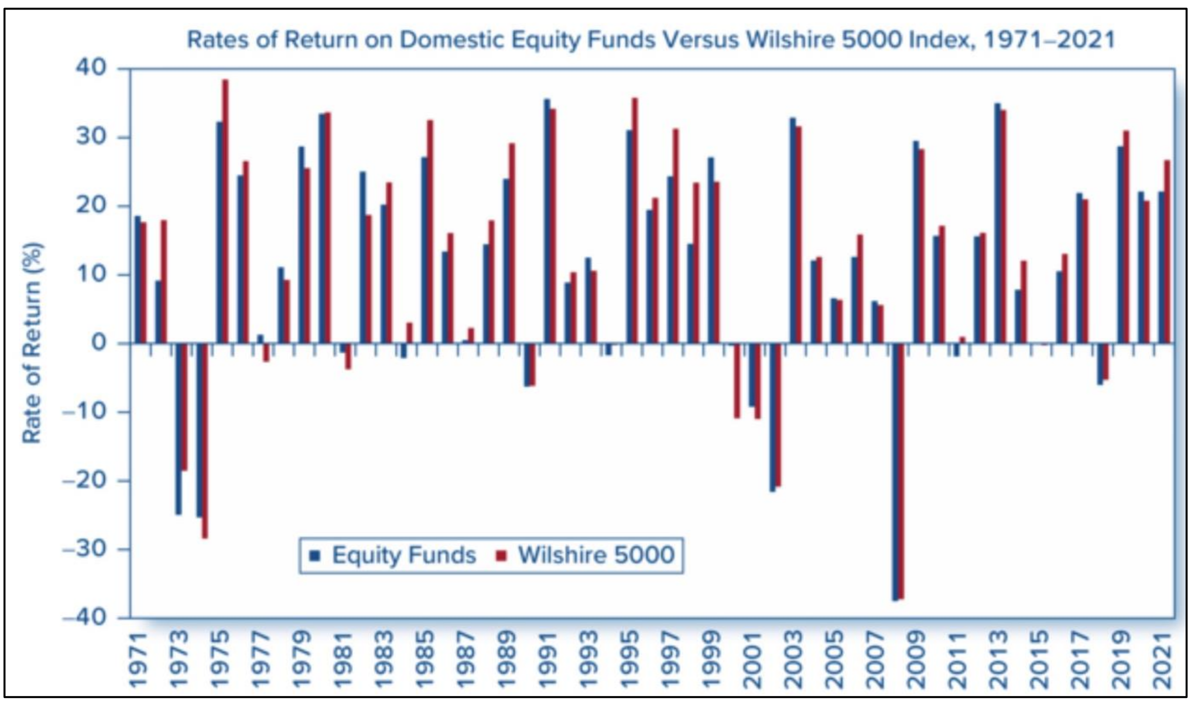
Examples: Sequoia Capital and Kleiner Perkins

> Private funds are often still required to comply with the **Investment Advisers Act**, which requires they file a **Form ADV** to disclose their fees and strategies. You can search for Form ADVs at https://adviserinfo.sec.gov/. Hedge funds managing more than $100 million (as well as investment companies) also file SEC **Form 13F** on EDGAR, which discloses their equity holdings each quarter.

Performance

In 30 of the 50 years (60% of the time) from 1971 to 2021, active diversified equity mutual fund average performance has trailed the market overall (Wilshire 5000). On average, the market returned 12.5% per year while the average active fund returned 11.5%.

Figure 4: Mutual Fund Performance (from BKM 13ed, 2024)



Hedge funds and private equity at times have offered attractive returns in excess of the market overall. However, given the substantial risks they take and the illiquidity of some of their assets, it is difficult to conclude the returns they generate are better than the market overall on a risk-adjusted basis.

Critical Thinking Questions

1. Describe the components of a fund's NAV. How is the NAV used to determine an investor's return to holding a fund?
2. What is the primary way in which mutual funds and ETFs differ?
3. What are benefits that ETFs offer over mutual funds?
4. Describe why ETFs are "tax efficient" relative to mutual funds. Explain why an investor redeeming their shares with a mutual fund might result in a tax liability for all investors in the fund, but an investor exiting their ETF position only results in a tax liability to the individual investor.
5. How are closed-end funds *similar* to ETFs? In what way are they *different* from mutual funds?
6. What type of investment company comprises the greatest percentage of total net assets of all investment companies?
7. Which type of investment company is growing in popularity, and why might this be?
8. Describe the distinction between active and index funds.
9. You invest $10,000 in a mutual fund and $10,000 in an ETF at noon on a Tuesday. Why does your account show you immediately own the ETF at noon but must wait until the market closes to show you own the mutual fund?
10. An ETF's share price exceeds that of its NAV. What does an AP do in this scenario?
11. A closed end fund's share price is lower than that of its NAV. What does an AP do in this scenario?
12. Below are brief descriptions of various investment funds. Identify which type of fund each is:
    a. Consists of holdings in companies that have pledged to be carbon-neutral before 2050
    b. Invests in fixed income and equity securities, switching weightings of each as the manager chooses.
    c. A portfolio that delivers 2x the daily return of the NASDAQ index.
    d. Invests in Exxon, Chevron, Conoco Phillips, and Kinder Morgan, as well as other similar companies.
    e. Holds equity shares in proportion to the CRSP Total Market Index.
    f. A fund that invests more in conservative fixed income securities and less in risky equity securities over time.
    g. Holds commercial paper, government securities, and certificates of deposit.
    h. Invests in common stock that the managers decide is most likely to perform well into the future.
    i. An index fund whose shares can be bought on margin or sold short.
13. What comprises a fund's annual expense ratio?
14. The S&P 500 returns about 11% per year. Many investors hold S&P index funds in their retirement accounts. Why shouldn't they hold a 3x leveraged ETF tied to the S&P instead?
15. Characterize the average performance of mutual funds over the last several years. What might explain this performance relative to a broad market index?
16. Why are hedge funds, private equity funds, and venture capital funds not considered investment companies? What do each of these funds specialize in, and what type of investor may be attracted to them and permitted to invest in them?

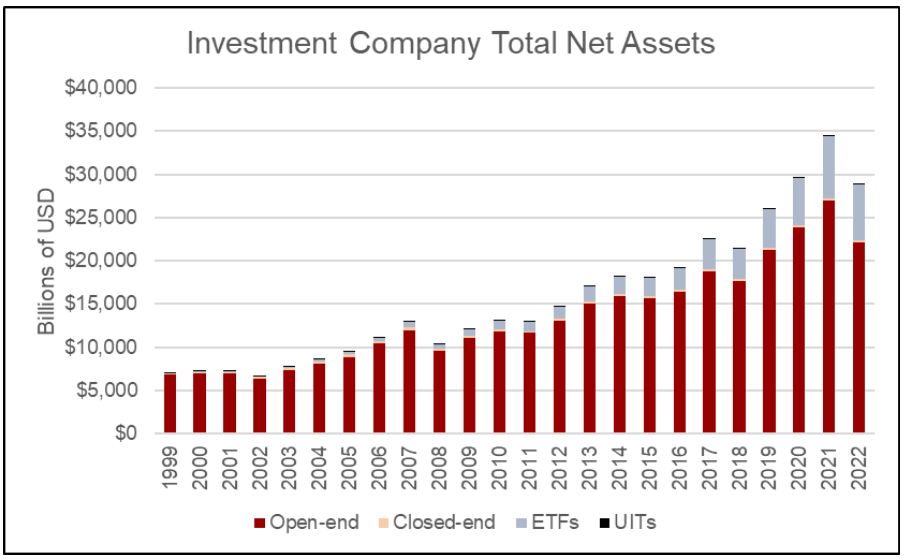
17. Why are private funds generally only available to accredited investors?
18. Where can an investor find the equity securities a hedge fund holds?
19. Given what we know about the average performance of mutual funds, investment companies, and private funds, why would an investor pay fees to invest in these funds?
20. Rank the following from most to least liquid in terms of their investments: (1) ETFs, (2) private equity, (3) hedge funds.
21. How does active mutual fund performance help to explain the growth of indexed investing?
22. CHALLENGE Suppose a mutual fund manager has been very successful in exploiting anomalies and buying stocks that are mispriced. As a result of the manager's excellent performance, the manager has attracted more and more **inflows** as many investors purchase shares in their mutual fund. Why might these inflows make it challenging for the manager to continue to identify anomalies and perform well in the future?
23. CHALLENGE A mutual fund can become "**closed**" to new investors if it no longer accepts additional money investors. Related to the question above, why might a mutual fund "close"? Does a mutual fund closing make it a "closed end fund"?
24. CHALLENGE Prices of closed-end funds trading in markets often differ substantially from their NAV. For example, the cost of a closed-end fund's share on an exchange could be $100 even though the per-share value of all the assets in the closed-end fund is worth $106! If the price of a closed-end fund's shares is greater than its NAV, it is trading at a **premium**. If the price of a closed-end fund's shares is less than its NAV, it is trading at a **discount**. Explain why you as an investor might want to purchase closed-end funds trading at discounts?

ANALYTICAL QUESTIONS

1. Using the figure below from CEFconnect.com, identify which of the closed-end funds are trading at a premium and discount to NAV. If you could only buy one of these funds based on solely on the size of its difference from NAV, which would it be and why?

Ticker	Fund Name	Strategy	Closing Price	Price Change	NAV
CLM	Cornerstone Strategic Value	Equity-U.S. Equity	$7.06	-$0.13	$6.70
CRF	Cornerstone Total Return Fund	Equity-U.S. Equity	$7.02	-$0.09	$6.43
NBXG	Neuberger Brmn Nxt Gnrtn Cnnctvty	Equity-U.S. Equity	$11.07	-$0.09	$13.34
FXBY	FOXBY CORP	Equity-U.S. Equity	$13.42	$0.00	$23.20
ADX	Adams Diversified Equity Fund	Equity-U.S. Equity	$17.56	$0.01	$20.68

2. Use the figure below, pulled from ICI data and the Excel file *Investment Companies* available at josephfarizo.com/fin366.html to answer the questions that follow. Note that "open-end" in the figure refers to mutual funds.



   a. What benefits of ETFs that we discussed might explain the trend you see in this figure?
   b. What do you think causes the substantial drop in the value of assets held by investment companies from 2007 to 2008 and from 2021 to 2022?
   c. What might explain why UITs are a very small share of investment companies overall? (They are represented by the small dark line at the top of each bar)

CFA Questions

Answers are in the *Notes & References* section below.[23]

1. Which of the following forms of pooled investments is subject to the *least* amount of regulation?
    a. Hedge funds
    b. Exchange traded funds
    c. Closed-end mutual funds

2. Which of the following investment products is *most likely* to be at their net asset value per share?
    a. Closed-end fund at a premium
    b. Open-end mutual funds
    c. Closed-end funds

3. Portfolios are *most likely* to provide:
    a. Risk reduction
    b. Risk elimination
    c. Return maximization

4. In a "1.75-and-18" hedge fund fee structure, the "1.75" refers to the hedge fund's:
    a. 12b-1 fee
    b. Performance fee
    c. Management fee

NOTES & REFERENCES

[1] This is adapted from the SEC definition, available at: https://www.sec.gov/education/glossary/jargon-z#PIV.
[2] Full text available at https://www.govinfo.gov/content/pkg/COMPS-1879/pdf/COMPS-1879.pdf
[3] See the definition at https://www.sec.gov/answers/mfinvco.htm.
[4] The rate of return may also include distributions paid (i.e., dividends): $(NAV_1 - NAV_0 + \text{Distributions}) \div NAV_0$
[5] See https://www.sec.gov/investor/alerts/etfs.pdf.
[6] See https://www.sec.gov/investor/alerts/etfs.pdf.
[7] See https://www.icifactbook.org/pdf/2023-factbook-ch2.pdf
[8] Money market fund example: https://fundresearch.fidelity.com/mutual-funds/summary/31617H201
[9] Equity fund example: https://fundresearch.fidelity.com/mutual-funds/summary/316071109
[10] Sector fund example: https://www.sectorspdr.com/sectorspdr/sector/xlf
[11] Bond fund example: https://investor.vanguard.com/mutual-funds/profile/overview/vbtlx
[12] Balanced fund example: https://www.tiaa.org/public/investment-performance/investment/profile?ticker=34211329
[13] Asset allocation fund example: https://www.capitalgroup.com/individual/investments/fund/ffggx
[14] ESG fund example: https://www.blackrock.com/us/individual/products/239692/ishares-msci-usa-esg-select-etf
[15] Leveraged ETF example: https://www.proshares.com/our-etfs/leveraged-and-inverse/tqqq
[16] Inverse ETF example: https://www.direxion.com/product/daily-technology-bull-bear-3x-etfs
[17] See https://www.investor.gov/introduction-investing/investing-basics/glossary/mutual-fund-prospectus.
[18] Sample prospectus: https://personal.vanguard.com/us/faces/JSP/Funds/ProspRep/FundProspectusReportsWinJSP.jsp?fundId=5835&isReqFromProducts=true
[19] 12b-1 is the name of the SEC rule that permits this fee: https://www.ecfr.gov/current/title-17/chapter-II/part-270/section-270.12b-1
[20] 2023 ICI Factbook Quick Facts Guide: https://www.icifactbook.org/pdf/2023-factbook-quick-facts-guide.pdf
[21] See https://www.sec.gov/education/capitalraising/building-blocks/starting-a-private-fund
[22] SEC definition of accredited investors: https://www.sec.gov/news/press-release/2020-191
[23] CFA Question answers: 1)A, 2)B, 3)A, 4) C