Industry Surveys

Asset Management & Custody Banks

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CHARTS & FIGURES

NEW THEMES

What's Changed: One trend emerging in private equity is the rise of perpetual capital. Check out our analysis on page 17.

What's Changed: M&A volume in 2022 remained high, but deal value fell significantly compared to 2021. See page 24.

EXECUTIVE SUMMARY

CFRA has a neutral fundamental outlook on the Asset Management and Custody Banks sub-industry, amid our view that secular challenges in this industry will persist and be exacerbated by a more challenging operating environment in 2023 amid more muted market returns. Below we outline our thoughts on several trends that will impact the industry in 2023 and beyond.

Exchange Traded Funds Exhibit Remarkable Resiliency

After a record 2021 marked by some $900 billion in ETF inflows, expectations for 2022 were dampened by the market's correction. However, inflows into ETFs totaled more than $600 billion in 2022, greater than all previous annual inflow volumes with the exception of 2021's. The record-setting demand for these low-cost investment vehicles has been remarkable, particularly amid the correction in both equity and fixed income markets that persisted for much of 2022. Market leaders Vanguard and BlackRock accounted for the majority of the inflow volume, though a number of smaller, specialized ETF providers have also gained traction. While these record-setting inflow trends bode well for the handful of leading ETF providers, they also represent a continuation of the trend toward lower-cost passive investment strategies that exert downward pressure on active asset managers' business models. The competitive landscape may shift a bit in 2023 as some high profile new entrants seek out their share of these rapidly growing assets, while fund innovation is likely to center around a continued blurring of the lines between active and passive investing.

Traditional Asset Managers Have Been Diversifying Their Asset Mixes Via Acquisitions

While there were no "blockbuster" deals in 2022, merger and acquisition (M&A) activity in the asset management pace remained relatively brisk in 2022. There were 305 asset manager M&A transactions (encompassing some $507.2 billion of assets under management), with a total deal value of around $3.3 billion in 2022. This compares to 2021, when 317 deals (covering more than $1.2 trillion of assets under management) transacted for around $12.9 billion. Some of the more notable transactions involved traditional asset managers (like AllianceBernstein and Franklin Resources) acquiring assets in the private credit and/or alternative space as a way to diversify, a trend we see accelerating in coming periods, particularly among asset managers without a significant presence in passive investments (like ETFs).

Private Equity Business Models Continue to Evolve Amid Favorable Long Term Secular Trends

CFRA has a positive fundamental outlook on the private equity subset of the asset management industry, driven by favorable demand trends that will likely remain largely intact, despite the rise in interest rates, as many institutional investors continue to increase their exposure to alternative investments, including those in private equity. Fundraising remains very strong and with nearly $2 trillion in estimated "dry powder" or capital available to be deployed, we expect private equity deal-making to remain active in 2023. However, many top private equity firms have also shifted their business mixes to include business with recurring revenue streams (like insurance and more traditional asset management) as a way of diversifying and increasing levels of permanent capital.

Shares of Publicly Traded Asset Managers Start 2023 in Recovery Mode

Most publicly traded asset managers felt the impact of declining asset values brought on by rising inflation and the Fed's aggressive tightening actions in 2022. As a result, the S&P Asset Management and Custody Bank sub-industry index declined by 22.3% in 2022, versus the 12.4% decline in the S&P Financials Index and the 19.4% drop in the S&P 500 during the same period. However, the shares of asset managers began 2023 in an upward trend on hopes the Fed can engineer a soft landing and begin cutting rates, and the group climbed 9.8%, year to date through January 31, 2023, topping the 6.5% rise in the Financial sector and the 6.2% advance in the S&P 500 changes. However, any sustained recovery in asset values will likely provide a catalyst for most asset managers' shares.

ASSET MANAGEMENT & CUSTODY BANKS

Outlook: Neutral

MARKET CAP BREAKDOWN*

(as of January 31, 2023)

RANK NO.	COMPANY NAME	MARKET CAP ($ billion)
1	BlackRock	113.7
2	Blackstone	68.2
3	KKR & Co.	48.1
4	BNY Mellon	40.9
5	Apollo	40.5
	Others†	181.0

Source: CFRA, S&P Global Market Intelligence.
*Companies included in the S&P 1500 index.
†Refer to the Comparative Company Analysis section of this survey for other companies in the industry.

ETF FOCUS

XLF Financial Select Sector SPDR	AUM ($M) 33,131.9	Expense Ratio 0.10
VFH Vanguard Financials	AUM ($B) 9,206.0	Expense Ratio 0.10
IYF iShares U.S. Financials	AUM ($B) 2,115.7	Expense Ratio 0.39
IYG iShares U.S. Financial Services	AUM ($B) 1,505.3	Expense Ratio 0.39
FNCL Fidelity MSCI Financials Index	AUM ($B) 1,566.9	Expense Ratio 0.08

BY THE NUMBERS

$6.5 trillion
U.S ETF assets in 2022

$22.1 trillion
U.S. mutual fund assets in 2022

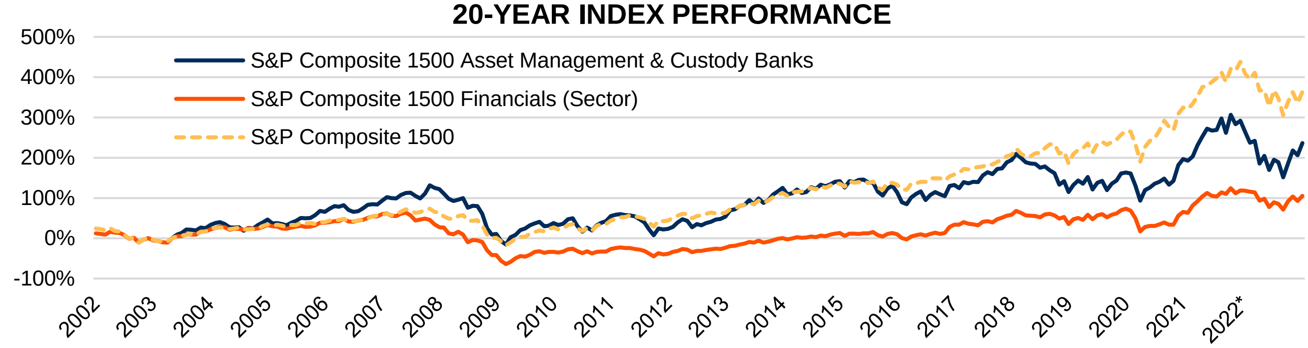
95%
Share of ETF assets held by the top five ETF providers as of February 3, 2023

$32.3 trillion
U.S. retirement market assets in Q3 2022

63%
U.S. households with tax-advantaged retirement savings

$129,157
Average 401(k) balance in 2021

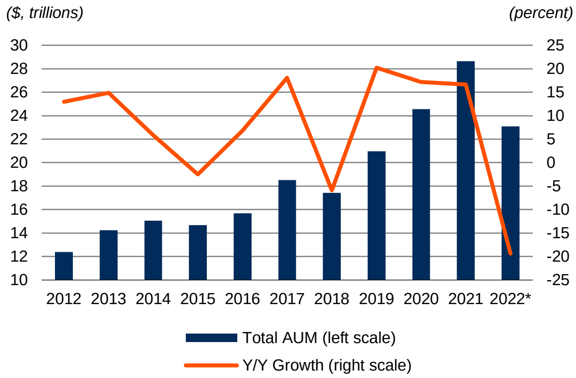
20-YEAR INDEX PERFORMANCE



*Data through January 31, 2023.
Source: S&P Global Market Intelligence.

FINANCIAL METRICS

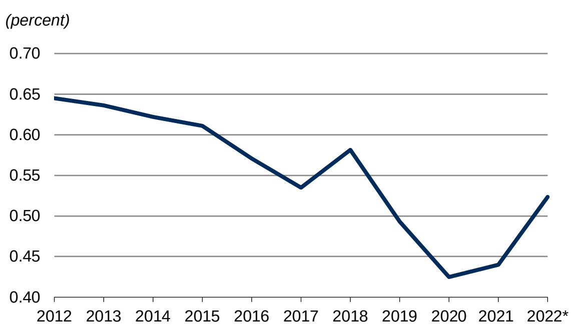
Assets Under Management (AUM) Growth



*Data through Q3.
Source: CFRA, S&P Global Market Intelligence.
Note: The spike in 2020 total AUM was due to Franklin Resources' acquisition of Legg Mason.

- ◆ Growth in AUM, coupled with the mix of those assets (and their related fee structures), is a primary driver of revenue gains for the asset management industry.
- ◆ CFRA expects AUM to rise by 6% to 10% in 2023. This growth assumes a modest recovery in asset values (particularly in equity holdings) as Fed tightening actions begin to wane. The recovery in asset values expected in 2023 belies some secular challenges for this industry, however. The continued downward pressure on asset management fees, amid an ongoing and accelerating shift to passive and money market investments (both of which generate lower fees), will dampen the growth in asset management fees – a key revenue source.

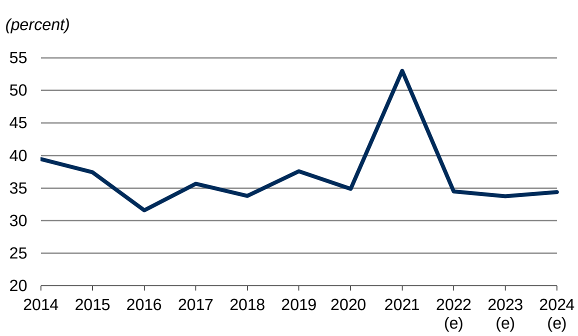
Revenue / AUM Ratio



*Data through Q3.
Source: CFRA, S&P Global Market Intelligence.

- ◆ The ratio of revenue to AUM is a good metric to assess the profitability and mix shift of a particular firm compared to the broader industry.
- ◆ Passive investment fees have recently undercut those of actively managed funds. A new wave of price competition is emerging in the active investment management space, including the introduction of no-fee ETFs, leading to a downward trend in the past few years. However, we expect an upward trajectory in the revenue/AUM ratio and see a leveling off in the coming periods.

Net Operating Margin

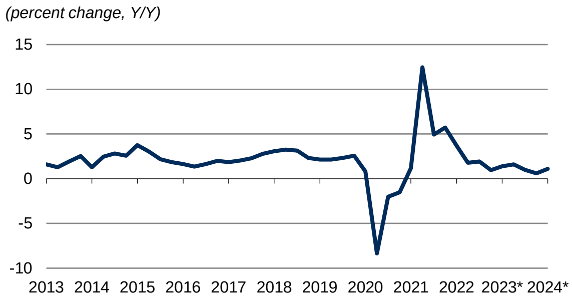


Source: CFRA, S&P Global Market Intelligence.

- ◆ A combination of a deceleration in AUM growth and downward pressure on fees has pressured the margins of most asset managers and custody banks in the past few years.
- ◆ Some firms have responded by embracing technology to cut costs and enhance client engagement, while others have struggled with high levels of fixed costs that continued to pressure margins. We expect several firm-wide cost-cutting and restructuring initiatives undertaken in recent years will help stabilize operating margins. We forecast operating margin to reach 33.8% in 2023 and 34.4% in 2024.

KEY INDUSTRY DRIVERS

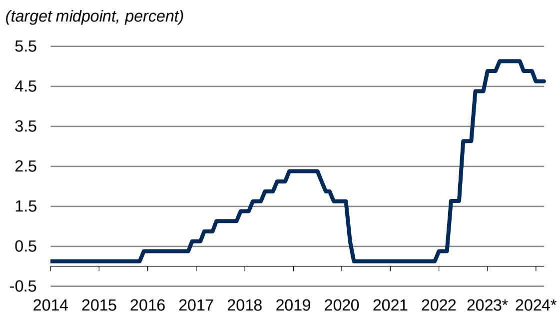
U.S. Real GDP Growth



*Actual data through Q4 2022, projected data by Action Economics.
Source: Bureau of Economic Analysis, Action Economics.

- In December 2022, the Federal Open Market Committee updated its forecasts for U.S. real GDP growth, where it is expected to grow 0.5% in 2023 (versus an earlier prediction of a 1.2% growth), 1.6% in 2024 (versus an earlier forecast of 1.7%), and 1.8% in 2025. This compares with the forecast from Action Economics, which sees a 1.2% real GDP growth in 2023.
- The World Bank projected global GDP to grow by 1.7% in 2023 and 2.7% in 2024.

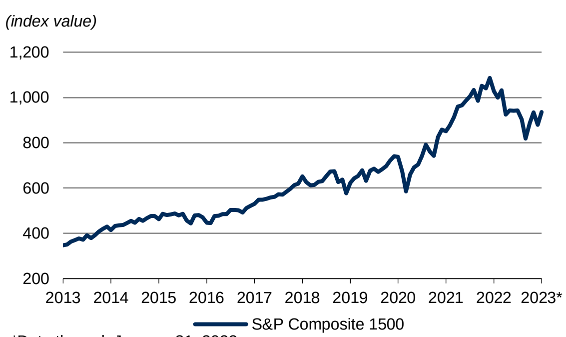
U.S. Interest Rates



*Actual data through Q4 2022, projected data by Action Economics.
Source: U.S. Federal Reserve, Action Economics.

- Action Economics expects the Fed funds rate to average 4.96% in 2023 versus 1.90% in 2022.
- The yield curve (usually the 10-year versus the 2- year Treasury spread) is expected to remain positively sloped through 2023, though the yield on the 2-year Treasury note is expected to average 4.04% in 2023 and 3.58% in 2024. The yield on the 10-year Treasury is forecasted to average 3.54% in 2023 and 3.46% in 2024.
- From an investment perspective, a persistently and historically high interest rate environment presents both positive and negative catalysts for financial stocks. This is evidenced by the performance of the Financials sector during 2022. The 12.1% decline in the S&P Financials sub-index during 2022 included a 21.7% decline in the Asset Management & Custody Banks sub-group, partly offset by strength in the insurance space, paced by a 25.3% rise in the reinsurance sub-group.

Stock Market Performance



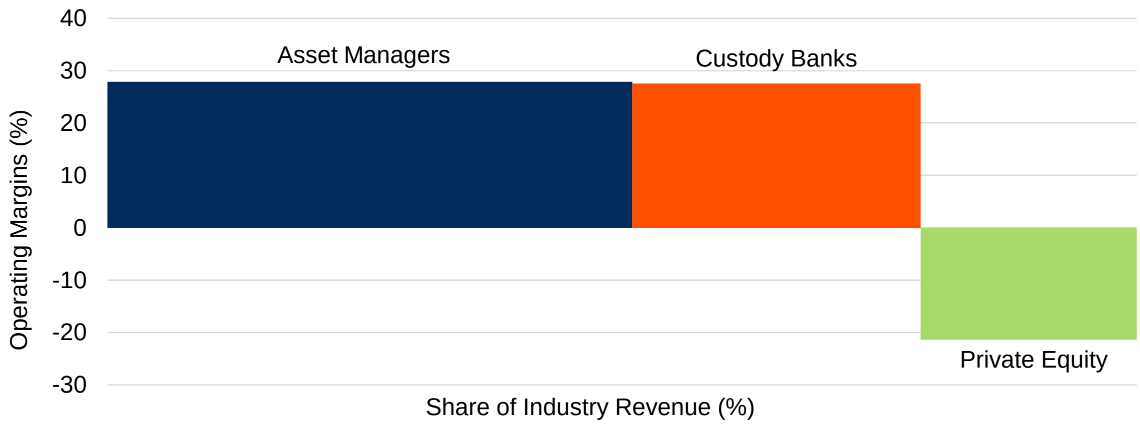
*Data through January 31, 2023.
Source: S&P Global Market Intelligence.

- Despite outflows, equity strategies still represent nearly half of the asset management industry's AUM base, and about two-thirds of ETF AUM. Hence, the direction of these assets is an important driver to overall results, particularly as fees come under pressure.
- CFRA's 12-month forward S&P 500 target is 4,575 (as of February 1, 2023).

INDUSTRY TRENDS

Asset managers are entering 2023 without the tailwind of a recovery in asset values that drove results in 2021, though asset values have started to recover from 2022's selloff. Moreover, many of the secular challenges facing traditional asset managers still remain. However, demand for saving and investment products is being buoyed by demographics and a labor market recovery. Government actions taken in the last several years to address the retirement crisis, masked by the effects of the pandemic, may also soon enhance the long-term demand for savings and retirement products as an aging population needs to save for retirement. CFRA has a neutral fundamental outlook on the Asset Management and Custody Banks sub-industry, based on our view that favorable demographic trends are being offset by a secular shift to passive investing, coupled with heightened technological challenges, that have threatened the very existence of some asset managers. This group contains three main sub-sets – asset managers, custody banks, and private equity firms. Highlighted below is CFRA's overview of each group, as well as legislative and regulatory issues that impact the entire industry.

PROFIT SHARE MAP OF ASSET MANAGEMENT & CUSTODY BANKS SUB-INDUSTRY
(as of the third quarter of 2022)



Source: CFRA, S&P Global Market Intelligence.

Competitive Environment

PORTER'S COMPETITIVE MATRIX FOR ASSET MANAGEMENT & CUSTODY BANKS SUB-INDUSTRIES

	COMPETITIVE RIVALRY AMONG EXISTING FIRMS	CUSTOMER BARGAINING POWER	THREAT OF SUBSTITUTION	THREAT OF NEW ENTRY
ASSET MANAGERS	Driven by performance and cost. Can be mitigated by superior performance and ease of transacting	Strong among institutional clients, mitigated by regulatory constraints	Threat is high and driven by growing popularity of ETFs	Threat still exists, but the changing nature of distribution has limited the "shelf space" at large advisors and brokers, creating a greater moat around top tier products
CUSTODY BANKS	Limited by the concentrated nature of this business. Increasingly being driven by tech and breadth of capabilities	Limited by the concentrated number of industry participants, influenced by a suite of capabilities offered by each firm	Threat is very low, given the complex nature of the custody and clearing business	Threat is low, but if incumbents stumble in their technology initiatives, the threat could rise
PRIVATE EQUITY	Limited by the industry's high capital requirements, heightened by threat from other sources of capital (hedge funds, sovereign wealth funds, insurers, investment banks)	Impacted by the concentration of clients within a particular firm, mitigated by a private equity firm's specialization of in-demand capability	Driven by competing investment vehicles and their respective performance and returns. Can be mitigated by strong performance	Threat is low, though capital required limits new entrants

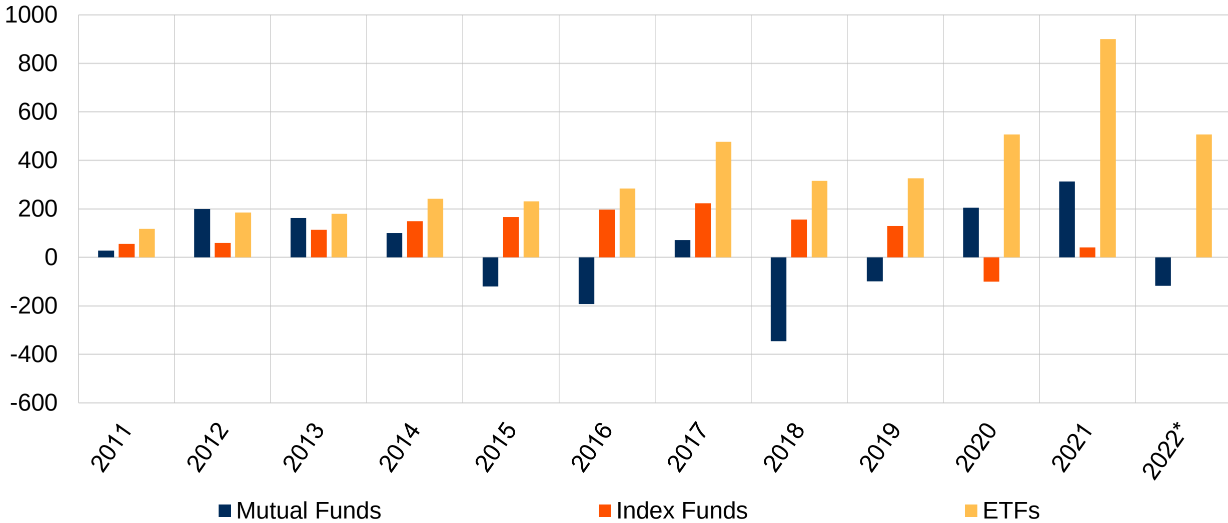
Source: CFRA Research.

Asset Managers

Recent Fund Flows Highlight Diverging Trends

The latest available asset management fund flow trends highlight the diverging trends between mutual funds (particularly equity mutual funds) and exchange traded funds (ETFs), continuing a multi-year trend. Specifically, mutual funds continue to suffer net asset outflows at the expense of ETFs, which we estimate garnered inflows of around $625 billion in 2022, down from the $900 billion of net inflows recorded in 2021 but still the second best year on record for ETF flows. Flows into fixed income ETFs also drove about one-third of ETF inflow volume in 2022, though domestic and international equity inflows still accounted for more than 60% of net. Money market flows shifted rather considerably during 2022, as net outflows early in 2022 quickly reversed course as investors shifted to a more defensive strategy. As 2023 progresses, we expect investors to tread back into equities and fixed income vehicles as the earlier selloff creates more attractive valuations, though we expect the ongoing shift from mutual funds to ETFs to continue. This shift will likely exert additional downward pressure on asset managers' revenue streams, since we estimate the weighted average index equity ETF expense ratio to be 0.18% to 0.20% and the average money market account expense ratio was 0.22%, versus 0.50% for the average equity mutual fund.

FUND FLOWS
($, in billion)



*Mutual funds data as of December 2022, ETFs data as of November 2022, index funds latest available data as of 2021.
Source: Investment Company Institute, ETF.com.

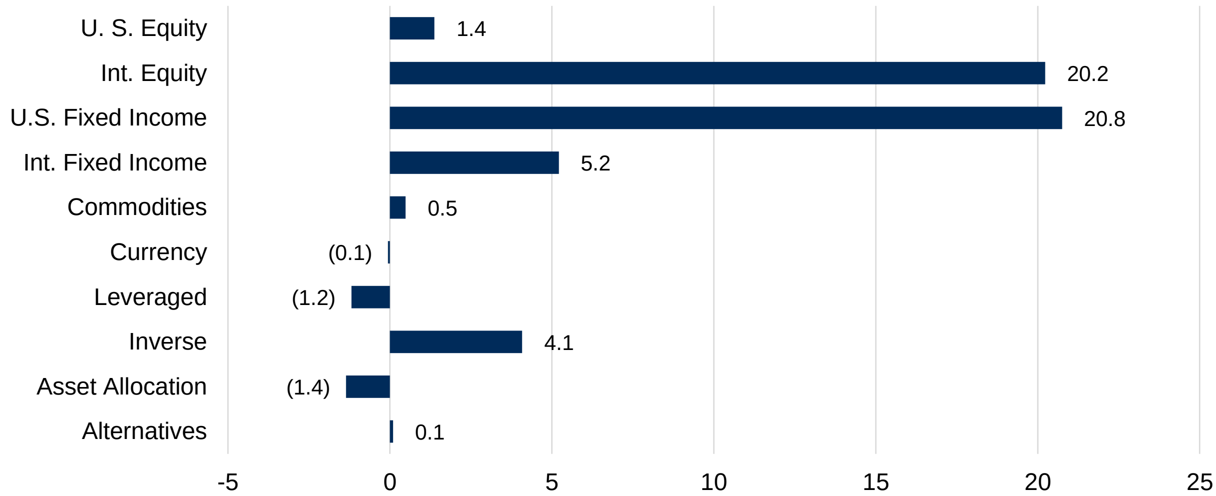
Despite this erosion in active equity assets, domestic and global equity mutual funds remain a core product for active managers, accounting for more than half of mutual fund assets under management (AUM). Because the average fee structure (about 0.58% of AUM) for equity mutual funds is one of the highest in the industry, equity mutual funds remain a key revenue source for many asset managers, but also a source of vulnerability since equity mutual funds have suffered the greatest level of net asset outflows. Note: the data in the table below is for the entire asset management industry, which includes a number of privately held firms. The discussion that follows is based on data from publicly traded asset managers in our analytical coverage universe.

MUTUAL FUND ASSETS UNDER MANAGEMENT BY STRATEGY
(in $, billions)

FUND TYPE	DEC 2022	NOV 2022	% CHANGE
Domestic Equity	8,721	9,291	-6.1
World Equity	2,630	2,756	-4.6
Hybrid	1,488	1,546	-3.8
Taxable Bond	3,755	3,812	-1.5
Municipal Bond	737	753	-2.2
Money Market	4,777	4,671	2.3
Total AUM	22,108	22,830	-3.2

Source: Investment Company Institute.

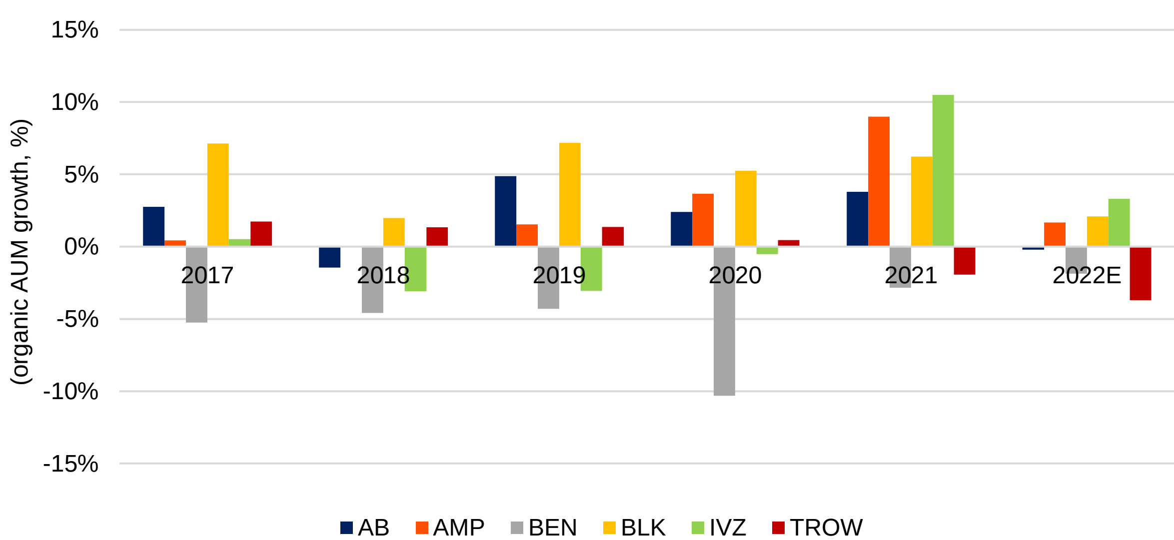
ETF FUND FLOWS BY ASSET CLASS 2023*
(in $, billions)



*As of January 31, 2023.
Source: ETF.com.

The Ability to Grow Organically Will Be a Key Differentiator Among Asset Managers
As the chart below highlights, organic growth trends have varied by firm, but have remained fairly consistent among the historically solid performers, like BlackRock (BLK), AllianceBernstein (AB), and Ameriprise Financial (AMP). The ability to grow AUM through asset inflows will provide the shares of those firms with a catalyst for outperformance during periods of more modest market appreciation, in our view.

ORGANIC AUM GROWTH TRENDS BY FIRM (FUND FLOW RELATIVE TO AUM)*



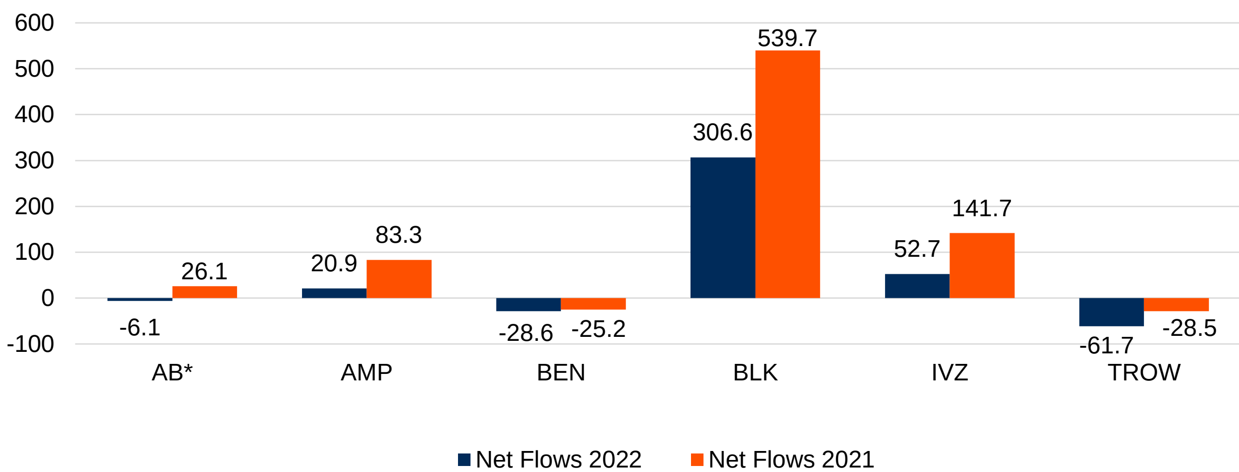
*Data for AB and AMP as of the first nine months of 2022. Data for BEN, BLK, IVZ, and TROW for full year 2022.
Source: CFRA, S&P Global Market Intelligence.

Fund Flow Trends Vary Widely by Firm

As the chart below indicates, fund flow trends vary widely by firm, a bifurcating trend CFRA thinks investors need to focus on in the coming year, as revenue growth in 2023 will likely be more dependent on organic growth amid more muted performance expectations. Many active managers (including BEN and TROW) experienced net outflows, particularly in equity products, as investors shifted to lower cost and more liquid ETFs, continuing a multi-year trend. There were a handful of standouts, though. Most notably, BLK experienced $307 billion of net inflows during 2022, reflecting strong fixed income mandates and its continued dominance of the ETF space with its iShares ETF franchise. While BLK continues to lead the pack on an absolute basis, relative to its size, Invesco (IVZ) produced a decent $52.7 billion of net inflows in 2022, though the bulk of these were into money market accounts, which generate a lower level of fees than equity or fixed income accounts.

FUND FLOW TRENDS BY FIRM

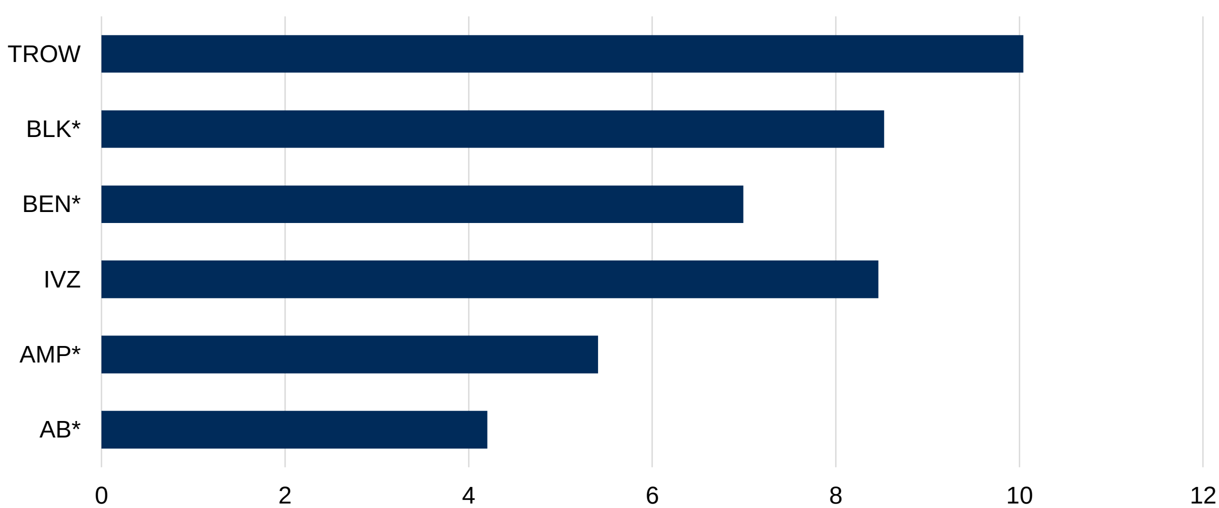
(for the full year of 2022, in $, billions)



Source: S&P Global Market Intelligence, Company Reports.

10-YEAR COMPOUND ANNUAL RATE OF AUM (2011 to 2022)

(in percent)

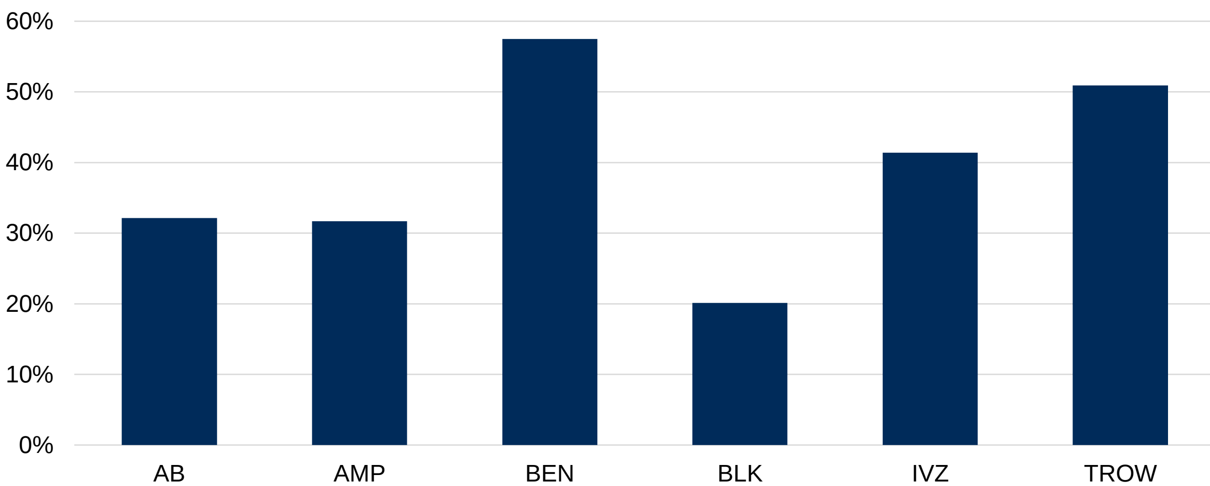


*Latest available data as of Q3 2022.

Source: S&P Global Market Intelligence, company reports.

Long-Term AUM Growth Rates Reflect Differing Strategies
Considering the confluence of events that have impacted asset managers in recent years, including equity market volatility and a secular shift to passive investing, it is appropriate to take a longer-term view of AUM growth trends. As the chart above indicates, compound annual growth rates over the last 10 years have varied rather significantly by firm. At the top of this heap are firms that have grown above the industry average via an array of strategies. TROW's above-peer rate of growth reflects its stable of actively managed funds with superior performance. We think TROW is at an inflection point, and are concerned that future growth may lag historical trends amid erosion in both fund performance and in organic AUM growth. Conversely, passive investments, like ETFs, are key to the above-peer growth trends at both BLK and IVZ. IVZ has also enhanced its growth prospects through acquisitions. This strategy has also helped growth trends at BEN, and is a trend CFRA expects to see more of in 2023 and beyond, as firms seek diversification, increased growth, and economies of scale. M&A activity among asset managers is also likely to come from outside the industry, as wealth management and brokerage firms seek exposure to the asset management space. Finally, activism in the asset management space is another factor that will indirectly, but significantly, influence growth prospects, as underperforming firms come into activists' crosshairs and are implored to ramp up growth or offer themselves up for sale as a way of increasing value to investors.

REVENUE-TO-AUM RATIO
(as of the full year of 2022, in percent)

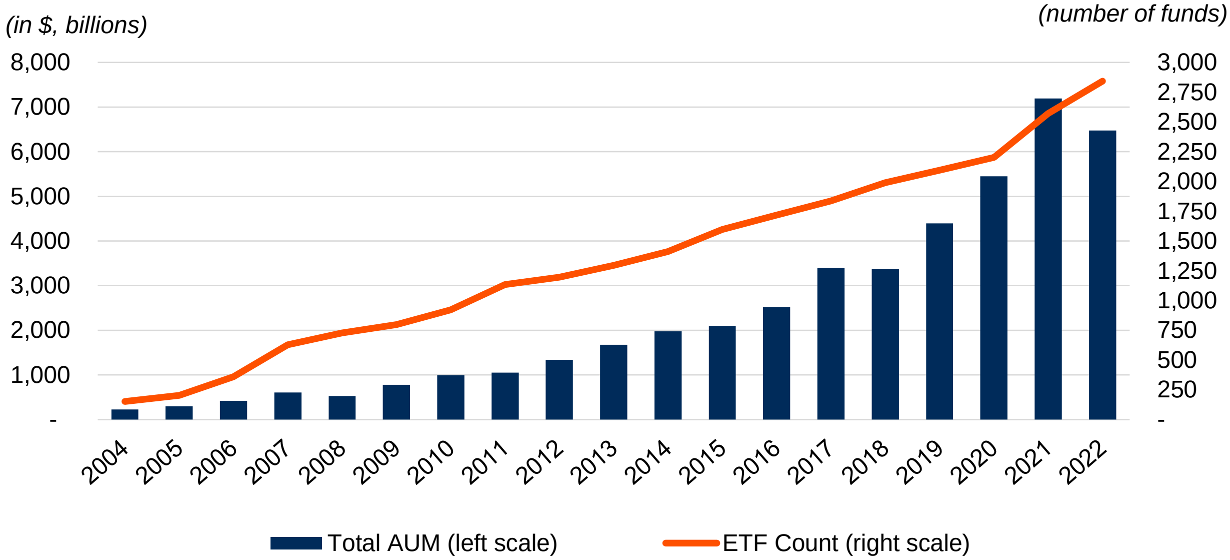


Source: S&P Global Market Intelligence, Company Reports.

These differentiated strategies have helped counter the downward pressure on revenues. An analysis of industry revenue trends highlights the impact of AUM mix on revenues. The ratio of revenue to AUM differs rather markedly by firm, reflecting their differing mix of AUM. BLK, with more than half of its AUM in lower-fee index and ETF products, not surprisingly is at the low end of this range, while BEN, whose AUM mix is almost entirely in actively managed funds (many of which are in proprietary products), is at the other end of the spectrum.

ETFs Remain a Source of Growth and Innovation, But Also a Bifurcating Force for Asset Managers
From their origins in the early 1990s, ETFs have probably been one of the most heartily embraced product innovations in the asset management industry. As their name implies, ETFs are pooled investment vehicles with shares that can be bought or sold throughout the trading day on a stock exchange at a market determined price. This intraday tradability, coupled with the funds' transparency, tax efficiency, and access to specific markets and/or sectors, has aided their acceptance by both institutional and retail investors. We estimate that assets in ETFs grew at a CAGR of around 16.5% during the 10-year period from 2012 through 2022. This is about double the 10-year CAGR for worldwide regulated open-end funds (which include mutual funds, exchange-traded funds, and institutional funds). CFRA estimates that AUM for U.S. ETFs ended 2022 at just under $6.5 trillion.

ETF GROWTH TRENDS



Source: Investment Company Institute.

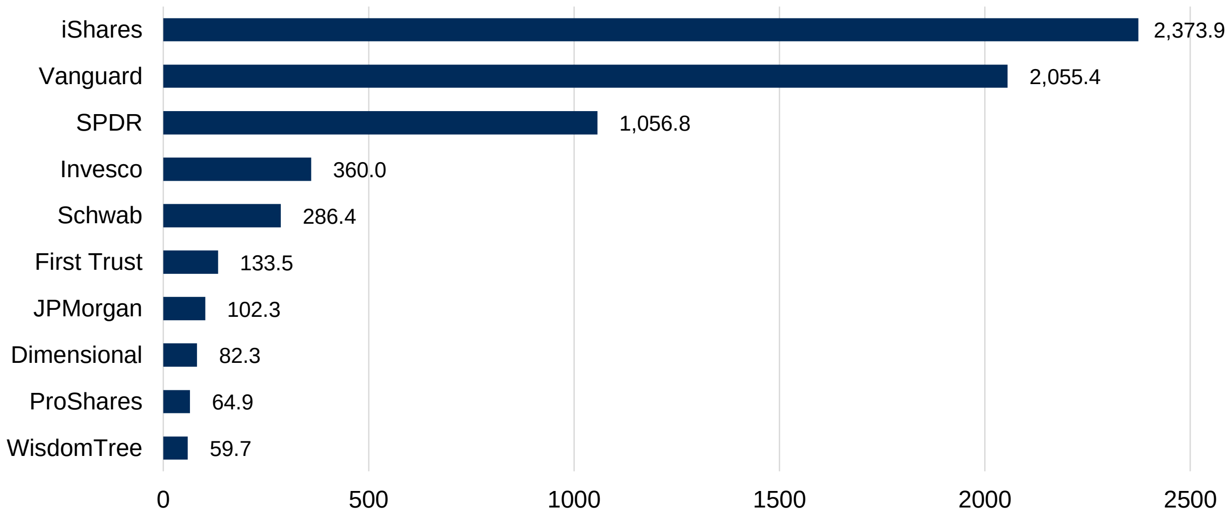
As data in the chart below *(Top 10 ETF Providers)* indicates, the ETF market is dominated by a handful of firms like BlackRock, State Street, and Vanguard. However, there are a number of interesting trends to watch among some of the second-tier players, like Charles Schwab and Invesco. BlackRock, whose iShares ETF franchise is the market leader, has more than 900 funds and over $2.3 trillion in AUM within its suite of ETFs, paced by its iShares Core S&P 500 ETF (IVV). Just behind BlackRock is privately held Vanguard Group, whose ETF AUM base is just over $2 trillion. A distant third is State Street, a pioneer in the space and creator of the first ETF, created and branded with S&P under the SPDR (S&P Depositary Receipt) name, and now manages more than $1 trillion in more than 100 different ETF strategies.

Barring an aggressive takeover play (which we do not anticipate), the ranks of the top three ETF providers are not likely to change materially. However, below this group are a handful of firms that have aggressively made inroads into this space. Invesco (IVZ), the fourth largest ETF provider, with around $360 billion of AUM, has been expanding and broadening its asset mix and product offerings through acquisitions. We expect this to remain central to the firm's growth strategy. IVZ's latest deal was announced in October 2018 when it agreed to acquire Oppenheimer Funds, Inc. from mutual insurer Mass Mutual for some $5.7 billion in cash and stock. This deal, which closed in late May 2019, propelled IVZ's AUM base to some $1.2 trillion. IVZ previously expanded its presence in the ETF market through two key acquisitions in 2017. In September 2017, IVZ agreed to acquire Guggenheim Investments' ETF business, with some $36.7 billion of AUM at the time the deal was announced. That followed the August 2017 acquisition of Source, a leading European-based ETF provider with $26 billion of AUM. Though market reactions to IVZ's deals have been mixed, we expect the firm to continue to build its ETF presence (which now accounts for more than 20% of total AUM) this way.

Charles Schwab has applied its strategic skills as a disruptor in discount brokerage industry to the ETF space, where it has emerged as one of the fastest growing participants. With a curated line-up of low-cost ETFs, Schwab has more than doubled its ETF AUM in the last two years, and we expect additional growth, possibly from acquisitions.

Given the downward pressure on ETF fees, CFRA expects consolidation among smaller ETF providers to increase. We see this being driven by two factors – the need for smaller ETF providers to gain economies of scale and a desire on the part of asset managers and financial intermediaries to gain or increase their exposure to this market.

TOP 10 ETF PROVIDERS
(ranked by total AUM as of February 3, 2023, in $, billions)



Source: ETF.com.

Custody Banks

Tech Capabilities Will Differentiate (and Possibly Bifurcate) Custody Banks

The custody business is one of the most heavily concentrated areas within the financial services sector. CFRA estimates that the top four custody banks – State Street Corporation (STT), The Bank of New York Mellon (BK), JPMorgan Chase (JPM), and Citigroup (C) – control more than 80% of industry revenues. The "pure plays" in this space are STT and BK, plus the somewhat smaller custodian, Northern Trust Corporation (NTRS). While JPM and C have a significant presence in this space, they are classified for investment purposes as large-cap diversified banks since they have a broader mix of business.

Historically, this concentrated group has offered an array of so-called "back office" functions: accounting, record-keeping, cash management, some operations outsourcing, securities lending, compliance, and pricing and performance analytics. Most of these capabilities are fairly commodity-like, so differentiation among firms is a challenge. Moreover, their commodity-like nature renders custody services very price-competitive, making scale an important element of most firms' business models. The offset to this is that this need for scale has established a fairly large moat around the existing players, limiting the ability of new entrants to gain a foothold in this space. Also, once a custody relationship has been established, it tends to be long-term in nature since there is an enormous amount of costly and time-consuming onboarding required.

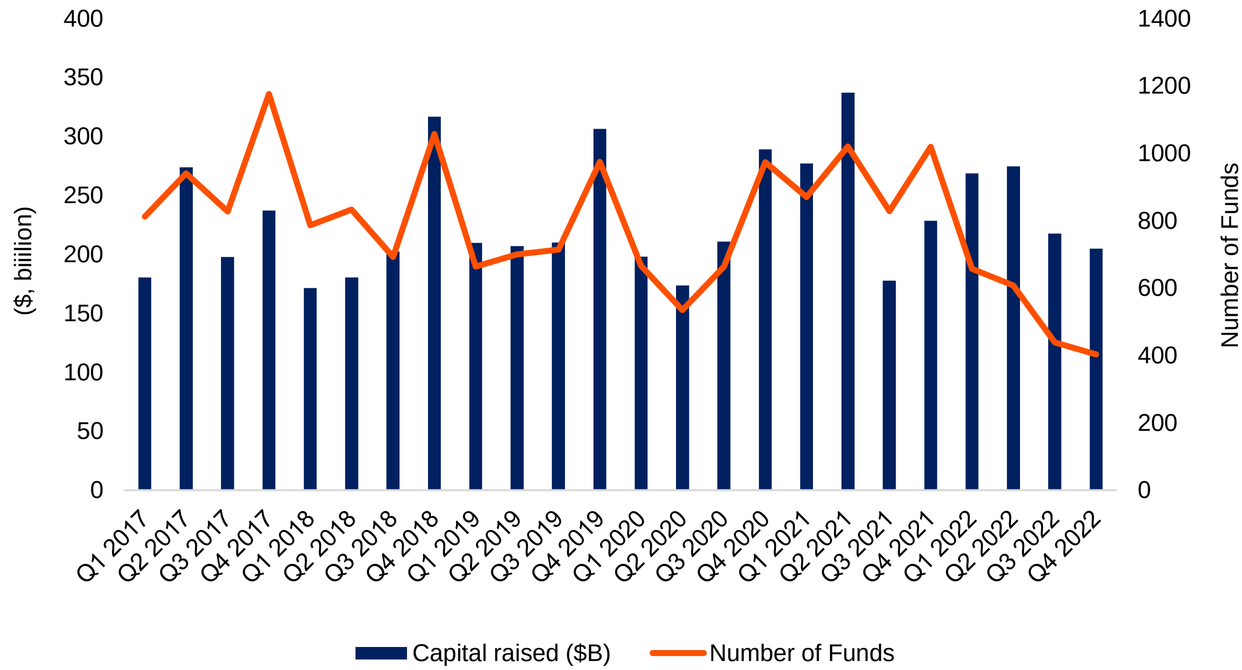
However, a bit of an arms race has emerged in the custody space, as the rapid pace of technological change in the broader financial services sector has impacted custody banks. CFRA views this as a bifurcating force within the industry, threatening to cleave this space into two camps – tech leaders and tech laggards.

Perhaps the biggest threat to the core custody and settlement business model is distributed ledger technology (DLT) or blockchain technology. Because DLT functions as an online ledger, allowing individuals and companies to make financial transactions directly with one another, an argument can be made that blockchain technology would render many custodial functions (like trade settlement, reconciliation, asset securing, and proof of ownership) obsolete. At this juncture, CFRA believes this argument is valid from a theoretical perspective, but that from a practical application, it is still premature. However, we view the long-term threat as real and believe it imperative for custody banks to "up their game" and more deeply penetrate their clients' operational ecosystems to increase their value proposition and stave off disintermediation.

Private Equity

Long-Term Fundamental Outlook Remains Positive Despite Difficult Near-Term Comparisons
CFRA has a positive fundamental outlook on the private equity subset of the asset management industry, driven by favorable demand trends that will likely be enhanced by multiple opportunities for private equity firms to leverage disruptions in various industries' business models. Despite the outlook for higher interest rates in 2023, a still relatively low interest rate environment has also driven many institutional investors to increase their exposure to alternative investments, including those in private equity. CFRA expects this trend to continue and even accelerate. The still-healthy demand for private equity and alternative investment vehicles has enabled private equity firms to raise funds at a healthy clip. Based on data from S&P Global, private equity fundraising reached a new high of over $1 trillion in 2021, and has remained brisk during 2022 (despite the rise in interest rates), with nearly $966 billion raised.

PRIVATE EQUITY FUNDRAISING TRENDS 2012-2022



Source: S&P Global Market Intelligence. Prior year data has been restated.

Company-specific fundraising trends have varied, though. As the table below highlights, fundraising trends have varied by firm, with Blackstone leading the pack on an absolute and relative basis, with particular strength in its real estate and credit funds. Carlyle, currenty in the throes of some managerial turmoil, has lagged its peers in fundraising. Apollo's success at addressing some company-specific challenges (including the controversy surrounding founder Leon Black's ties to disgraced financier Jeffrey Epstein) and a strategic shift to a greater focus on perpetual capital products have aided fundraising results in 2022. KKR's year-over-year comps are tough after a very strong 2021, but year-to-date fundraising trends reflect strength in its core units, particularly the Real Assets group.

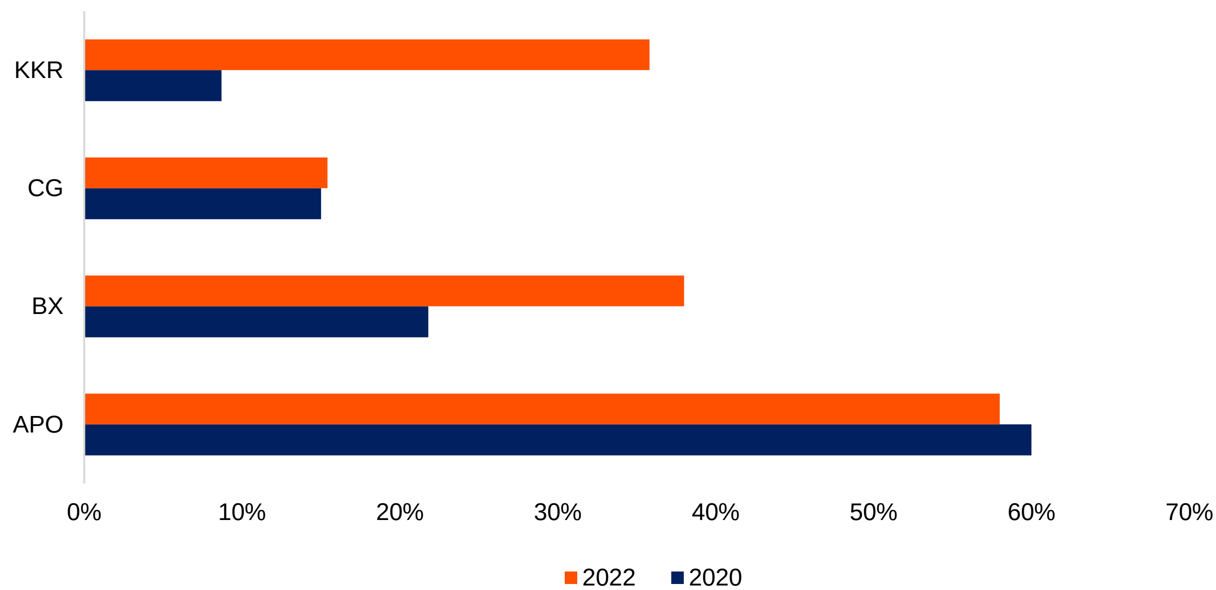
FUNDRAISING TRENDS BY FIRM

FIRM	2021 FUND FLOWS ($ Bil)	2021 AUM ($ Bil)	2021 FUND FLOWS TO AUM	2022 FUND FLOWS ($ Bil)	2022 AUM ($ Bil)	2022 FUND FLOWS TO AUM
APO	67.5	497.6	13.6%	110	515	21.4%
BX	270.5	880.9	30.7%	339.7	940.8	36.1%
CG	51.3	301	17.0%	52.1	376	13.9%
KKR	121	471	25.7%	99	491	20.2%

Source: Company filings. Data for 2022 is for the trailing 12 months ended June 30, 2022.

An emphasis on perpetual capital will broaden access to private equity funds and provide another source of more predictable AUM gains. One trend emerging in private equity is the rise of perpetual capital, or fund structures that don't contain the drawdowns, capital calls, exit deadlines, and other less-liquid features contained in traditional private equity funds. As a result of this shift, a greater array of investors, including individual high net worth investors, now have access to private equity funds. This shift has been dramatic, as highlighted in the chart below, which illustrates the amount of capital at the leading private equity firms that was perpetual in 2022 versus just two years ago.

PERCENTAGE OF ASSETS UNDER MANAGEMENT IN PERPETUAL CAPITAL (2022 vs. 2020)



Source: Company filings. Data for 2022 is as of June 30, 2022.

The search for perpetual capital has led private equity firms to the insurance industry. While the forces that brought insurers together with private equity firms are multi-faceted, a prolonged low interest rate environment, which pressured insurer margins in long-term obligations like annuities, was a significant one. During the last several years, a number of insurers, including Allstate, American Financial Group, and American International Group, decided that life insurance and annuities were not central to their long-term strategies, and many shed these capital-intensive units. At the same time, private equity firms began seeking more stable forms of investible, perpetual capital.The combination of these two forces led to a flurry of insurer-private equity transactions, including those by the leading private equity firms, highlighted in the chart below.

One significant differentiating factor among private equity firms' insurance strategies is the degree to which they took outright ownership stakes in insurance organizations. Some acquired blocks of business, like an annuity book of business an insurer was offloading. Others, including APO, CG, and KKR, acquired a controlling interest or total ownership of an insurance entity. Blackstone has had an insurer solutions group longer than many of its private equity peers, and has the largest presence in this space, but without a significant direct ownership stake in an insurer. While the ownership of an insurer enables a private equity firm to book a source of (theoretically) more stable earnings, valuations for insurers are much lower than those of private equity firms. Hence, there is a risk to those firms with significant stakes that their shares' valuations could contract as their business mixes and profit streams are tilted more heavily toward insurance.

Despite the recent rise in interest rates, CFRA believes the insurer-private equity relationship will remain intact, as insurers still need long duration investment vehicles to support their long-term policy obligations, and private equity firms are equipped to offer customized investment solutions to fit this need. One uncertainty we see, though, is the degree to which private equity firms with an existing insurance ownership stake would seek to build out those stakes and achieve greater economies of scale through additional acquisitions.

INSURANCE STRATEGIES BY FIRM

APO

Greatly expanded insurance presence through January 1, 2022 all-stock merger with annuity writer Athene

Earlier transactions included the 2014 purchase of Bermuda-based reinsurer Athora

Provides asset management and advisory services to Athene and Athora

BX

Blackstone Insurer Solutions is an insurance focused asset management platform that manages assets of several insurers, including AIG

BX has the largest and longest presence in this space, without taking significant ownership stakes directly in insurers

CG

Acquisition of 19.9% of Fortitude Re in 2018 formed the cornerstone of CG's Insurance Solutions Group

Scope of unit expanded in early 2022 with acquisition of controlling interest in Fortitude Re

Unit offers liability funding, reinsurance, portfolio construction and asset management services

KKR

Acquisition of 61.5% of life insurer Global Atlantic in February 2021 launched KKR's insurance practice

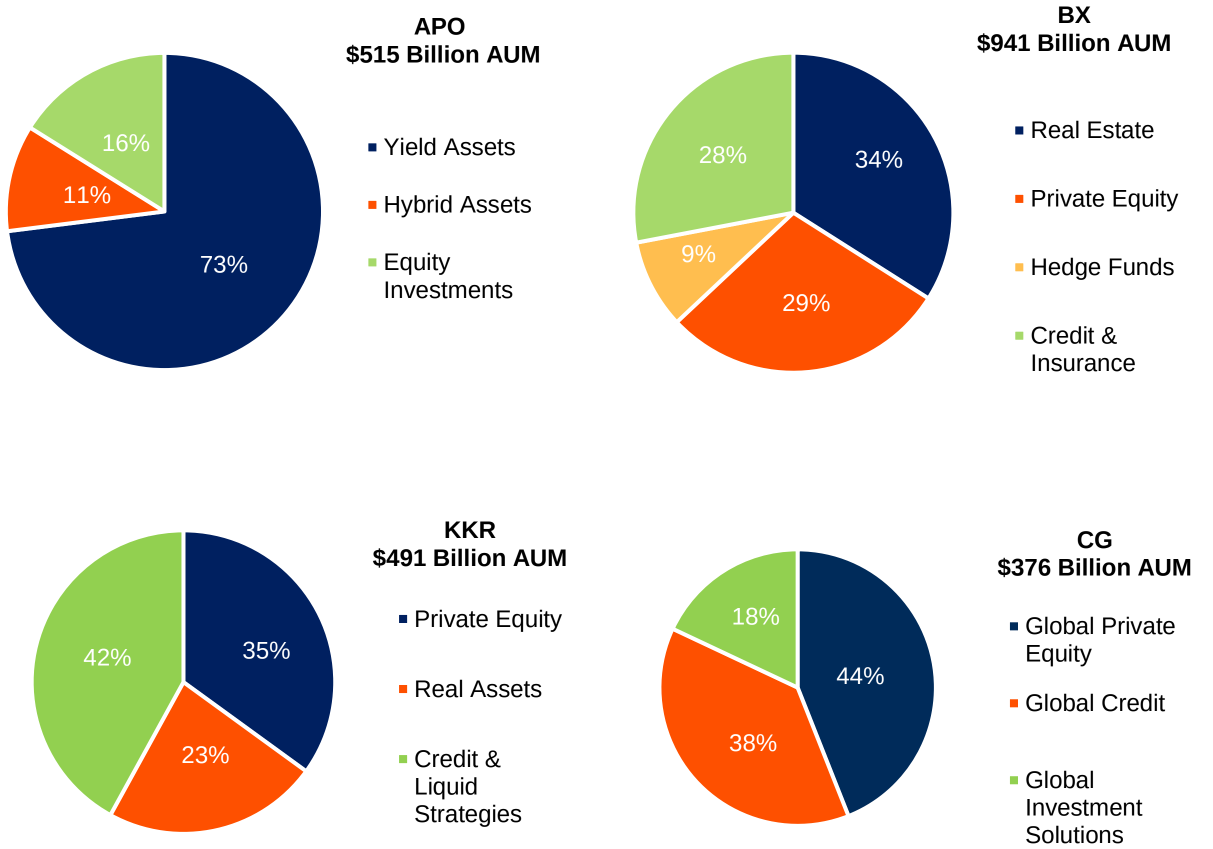
Global Atlantic offers a suite of annuity and retirement products

KKR serves as an investment advisor to Global Atlantic

Source: CFRA, company filings.

Asset Allocation Strategies Vary by Firm, but Remain Centered Around Credit and Real Estate Assets
Most private equity firms' invested asset base is fairly well diversified (though APO's is more heavily concentrated in credit assets than most peers), and in recent periods many have pivoted to a more real estate-focused invested asset strategy.

ASSETS UNDER MANAGEMENT BY SEGMENT – LEADING PRIVATE EQUITY FIRMS

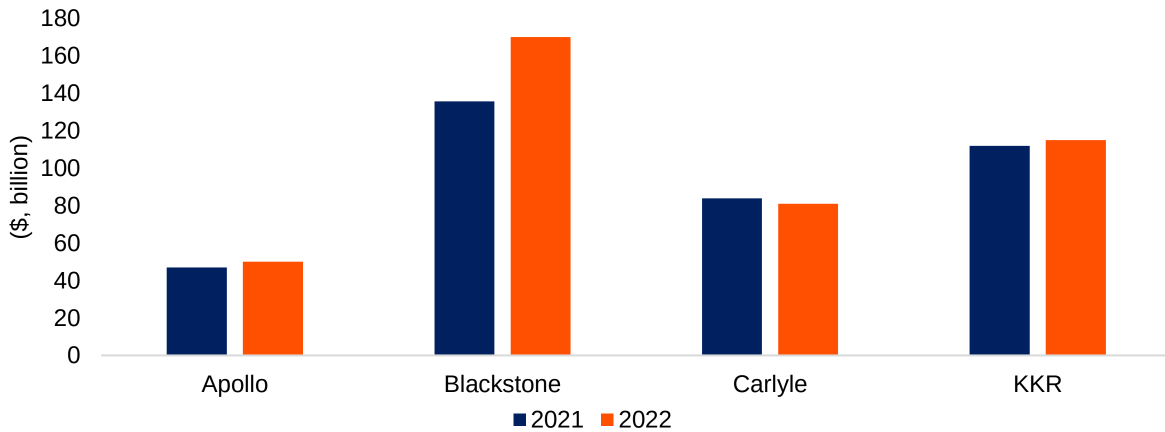


Source: Company filings. Data as of June 30, 2022.

Most firms measure profitability on the basis of distributable earnings. Distributable earnings (a non-GAAP measure) are defined as “the sum across all segments of: (a) Total Management, Advisory and Other Fees, Net, (b) Interest and Dividend Revenue, (c) Realized Performance Fees, and (d) Realized Investment Income (Loss); less (a) Compensation, excluding the expense of equity-based awards, (b) Realized Performance Fee Compensation, (c) Interest Expense, (d) Other Operating Expenses, and (e) Taxes and Related Payables Under the Tax Receivable Agreement”. While most private equity firms also report economic net income and GAAP net income, most guide around distributable earnings, believing this offers a more transparent representation of the drivers of profitability. Previously, most reported economic net income, which includes both realized and unrealized gains or losses on assets. Distributable earnings exclude these mark-to-market valuations, which tend to produce more stable results. The exception in this group is Apollo, whose pivot to a more insurance-based model has resulted in the firm reported profitability on the basis of “adjusted net income”, akin to operating profits reported by an insurer.

“Dry powder” remains plentiful at most firms. Dry powder, the colloquial term for capital committed to a private equity firm that has not yet been deployed into an active investment, is akin to unspent cash available to be invested. Because it is also a highly liquid asset, investor also gauge a firm’s level of dry powder during times of distress to assess a firm’s liquidity or cash cushion. After several years of robust fundraising and in the wake of the pandemic (which led to a short-term pause in some private equity activity), most private equity firms have robust levels of dry powder to deploy. Most notable, we think, is the uptick in dry powder at Blackstone, while most other private equity firms reported more modest increases, or, at Carlyle, a small decline.

DRY POWDER (2021-2022)

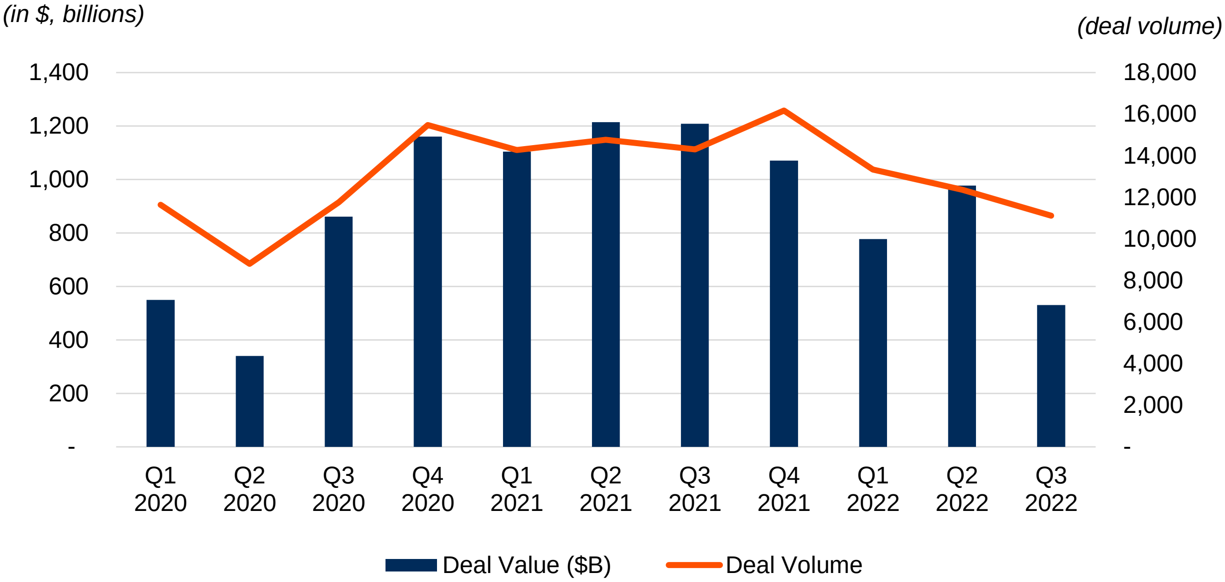


Source: Company filings. 2022 data as of June 30, 2022; 2021 data as of December 31, 2021.

Based on data from S&P Global, private equity and venture capital deal volume totaled 10,768 deals in 2021 with a total deal value of just under $882 billion, which surpassed our estimate of deal volume of over $700 billion. As of the third quarter of 2022, deal volume equaled 11,118, and year-to-date deal value totaled around $531 billion.

As the chart below highlights, overall merger and acquisition (M&A) deal activity has gradually recovered after a disruption in early to mid-2020 brought on by Covid-19 and the attendant market correction and volatility in its aftermath. Against that broader backdrop, we expect private equity's participation in M&A activity to also resume, driven in part by the private equity industry's estimated $1.9 trillion of capital available to invest – or "dry powder" in common industry parlance – at year-end 2021. In the immediate aftermath of Covid-19, most deal activities came to a halt as many private equity firms focused on increasing the value of their existing portfolio holdings.

GLOBAL M&A ACTIVITY 2020-2022*
(in $, billions)



*Latest available data.
Source: S&P Global Market Intelligence.

Operating Environment

Financial Results in 2022 Slipped After a Strong Recovery in 2021
Asset managers rebounded in 2021 from very mixed results during 2020 and ended the year on a strong note. Total revenues for the entire group – asset managers, custody banks, and private equity firms – advanced by nearly 50% Y/Y in 2021, to $164.1 billion, from $109.7 billion in 2020. Growth varied rather significantly among industry segments, though. Private equity firms saw the sharpest advance in revenues, as most had healthy asset inflows and saw their performance-based revenue streams increase as asset values recovered. As a result, revenues for publicly traded private equity firms in our coverage universe surged to $61.6 billion in 2021, up from $19.9 billion in 2020. While these numbers are encouraging, we caution they are not likely a sustainable long-term run rate. However, private equity firms also have the most favorable growth prospects in the asset management space, in our view, despite the threat from rising interest rates. Underlying fee revenue growth for most private equity firms (before the impact of market performance driven revenues) has averaged around 5% to 10%, above most other asset managers.

Traditional asset managers' growth remains impacted by secular challenges from a shift to passive investment strategies that continue to exert downward pressure on fees. However, these secular pressures were offset in 2021 by the recovery in asset values and some decent organic growth trends at some of the larger firms, which propelled Y/Y revenue growth for traditional asset managers up by nearly 19% in 2021, to $67.5 billion, from $56.8 billion.

Custody banks' top-line results remained hampered by a still-low interest rate environment, which constrained net interest income (that typically accounts for between 15% and 25% of custody banks' total revenues), though asset-based fee revenues for most firms benefit from the recovery in asset values during 2021. As a result, total revenues for custody banks in the 12 months ended December 31, 2021 rose by only 5.1%Y/Y, to $34.8 billion from $33.1 billion.

The correction in asset values brought on by a more aggressive Fed seeking to tame inflation took a toll on top line results at nearly every asset manager (albeit to varying degrees) during the first nine months of 2022. Total revenues for this group declined by over 24% (to $93.8 billion from $124.0 billion), year-over-year, in the first nine months of 2022. However, results varied considerably by business model. Traditional asset managers, whose revenue is tied to fees on AUM that were battered in the market selloff, posted a modest 2.3% decline in revenue. Harder hit were private equity firms, whose revenue stream includes performance-based revenues. This group took the most significant revenue hit with a 61% drop, year-over-year, in the nine months ended September 30, 2022 (to $19 billion from $48.7 billion). Conversely, custody banks, which benefited from the rise in net interest income brought on by higher interest rates, posted a 2.7% rise in revenues, year-over-year, in the first nine months of 2022 (to $26.7 billion from $26.0 billion).

Industry Expense Levels Varied Considerably, Depending on Business Model

Total expenses climbed by nearly 35% in 2021, to $97.7 billion, from $72.6 billion in 2020. The most significant factor behind this surge was the more than tripling to $29 billion from $9.6 billion of private equity expenses, largely reflecting higher performance-based compensation expenses. We do not see this as a run rate heading into 2022, though CFRA expects private equity expense levels to increase commensurate with revenue levels, given the proportion of total expenses tied to compensation (which is influenced by performance).

After previously implementing an array of cost-cutting initiatives designed to address their eroding fee structures, a number of traditional asset managers increased their technology expenditures. Expense levels for traditional asset managers climbed by nearly 12% in 2021. Custody banks' relatively contained 5.6% rise in expenses reflects the impact of a number of cost-cutting initiatives underway at several of the major banks, like Bank of New York Mellon and State Street. Both firms have been cutting operating expenses in an effort to boost margins and free up capital to redeploy into technology upgrades. Nine-month 2022 expense levels rose by 6.1%, year-over-year, for the entire industry, as a 2.5% constrained rise in traditional asset managers' expense levels was offset by a 4.8% rise in custody banks' expense levels, and a 12.9% rise in private equity expenses.

Pretax operating margins widened in 2021 to 40.4% from 33.9%, as the surge in revenues more than offset the higher expense levels. We caution that these margin levels are not likely sustainable in the long term, evidenced by the contraction in pretax operating margins in the first nine months of 2022, to 17.8%, from 44.9% a year ago. However, the 2022 year-to-date results are also skewed by depressed private equity profits on lower asset values.

Pretax profits for the entire industry nearly doubled, year-over-year, in 2021, to $70.6 billion from $35.9 billion. The primary factor driving this growth was the more than tripling of private equity pretax profits in 2021, to $35.9 billion from $9.7 billion in 2020. Traditional asset managers also posted a healthy 47.6% rise in pretax profits in 2021 (or $24.8 billion versus $16.8 billion). Custody banks were the laggard group in terms of pretax profitability, with a modest 4.3% rise in pretax profits in 2021 (to $9.8 billion from 9.4%).

Many of the strong gains this industry posted in 2021 were erased in the first nine months of 2022, and industry pretax profits plummeted by nearly 70%, year-over-year, to $16.7 billion from $55.7 billion. Once again, private equity profitability took the hardest hit, with a nine-month pretax GAAP loss of nearly $4.1 billion contrasting with year-ago pretax profits of $29.9 billion. Traditional asset managers saw their pretax profits drop by 26%, to $13.4 billion from $18.2 billion, while custody banks fared the best, with a 2.7% drop in pretax profits (to $7.3 billion from $7.5 billion).

The Industry's Tax Burden Varies by Business Model

The tax burden for the publicly traded custody banks, asset management, and private equity firms in our coverage universe averaged 15.8% in 2021, versus 17.8% in 2020 and 15.1% in 2019. Results varied widely by sub-group, though. Private equity's tax rate in 2021 averaged 11.5%, versus 12.8% in 2020. Traditional asset managers' average tax rate equaled 22.2% in 2021, up from 20.2% in 2020, and versus

20.6% in 2019. Custody banks' tax burden averaged 19.8% in 2021, versus 19.1% in 2020 and 19.5% in 2019.

Following taxes, and before minority interests, net income for the asset management industry more than doubled year-over-year in 2021, to $59.4 billion, from $29.5 billion in 2020. Pacing this strong showing was the private equity, which produced a near tripling of after-tax profits in 2021 (to $31.8 billion from $8.5 billion in 2020). Traditional asset managers also produced a robust 46.2% rise in after-tax profits (to $19.6 billion in 2021 from $13.4 billion in 2020). Custody banks' profitability lagged the other groups in 2021, as this less volatile group posted a modest 5.3% rise in after-tax profits in 2021 (to $8.0 billion from $7.6 billion in 2020).

After-tax profitability for publicly traded asset managers declined by nearly 73%, year-over-year, in the first nine months of 2022, to $12.9 billion from $47.0 billion. The sharpest year-to-date decline was felt by private equity firms, which posted a $3.5 billion GAAP net loss in the first nine months of 2022, versus a profit of $26.8 billion a year earlier. Traditional asset managers posted a 26% decline in their after-tax profits (to $10.5 billion from $14.2 billion), while custody banks' net profits declined by just under 2%, to $5.9 billion from $6.0 billion.

Outlook for 2023

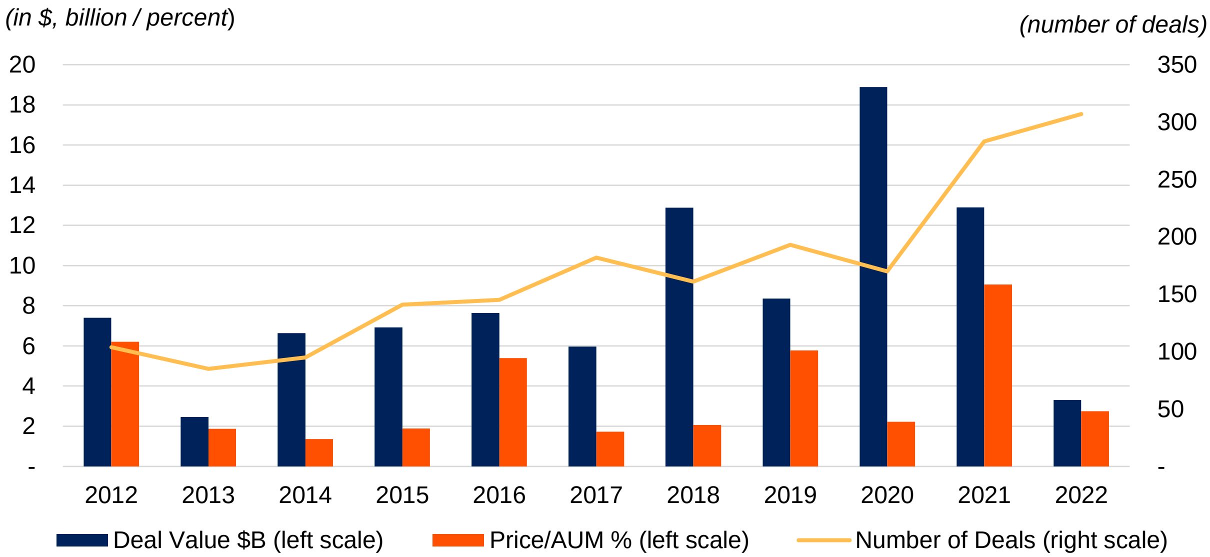
CFRA anticipates organic revenue growth for the Asset Management and Custody Banks sub-industry group will be up by 4% to 7% in 2023. Embedded in this forecast is our assumption that an easing of interest rate pressures that began to ease in 2022 will produce a 3% to 6%% rise in custody bank revenues in 2023. Asset management revenues in 2023 will likely recover from the pressured results posted in 2022, and are expected to rise by 4% to 8% in 2023 (assuming no significant contraction in economic and/or investment conditions and a modest recovery in asset values). Our forecast for private equity revenue growth assumes a more modest rate of growth in asset values, coupled with positive asset inflows and continued favorable capital raises, producing revenue growth of 8% to 12% in 2023.

M&A Environment

The decline in asset values witnessed during 2022 as the Fed raises rates to battle historically high levels of inflation has taken its toll on the shares of publicly traded asset managers. During 2022, the S&P Asset Management and Custody Bank sub-industry index declined by 21.7%, versus the 19.4% decline in the S&P 500 during the same period. This sub-group has the dubious distinction of being one of the worst performing groups within the financial sector in 2022. This downward pressure on revenue levels from the drop in asset values adds more strain to an industry already pressured by secular changes. CFRA expects shifting consumer preferences that favor passive investing over actively managed mutual funds, coupled with continued downward pressure on asset management fees across most asset classes, to fuel merger and acquisition (M&A) activity in coming periods. Historically, M&A activity in the asset management space has been driven by two needs – scale and diversification. Against that backdrop, CFRA expects an uptick in industry consolidation among smaller asset managers seeking to build scale, while some larger asset managers may seek to diversify their AUM mixes or technology capabilities and will likely do so through acquisitions. While demand for a fee-based revenue stream from banks and insurers may subside a bit amid the rise in interest rates and following the mixed rate of success many of these forays into wealth and asset management have produced, the desire to diversify may continue to drive M&A activity. So too will increased activism within the asset management industry, as external investors see opportunities to agitate for change that often involves a merger or sale of a target company.

ASSET MANAGEMENT M&A TRENDS 2011-2022

(in $, billion / percent)



Source: S&P Global Market Intelligence.

While M&A volume did not fall precipitously in 2022, deal value did. Based on data from S&P Global, there were 307 asset manager M&A transactions (encompassing some $507.2 billion of AUM), with a total deal value of around $3.3 billion in 2022. This compares to 2021, when 283 deals (covering more than $1.2 trillion of AUM) transacted for around $12.9 billion. The average price/AUM for these deals was 2.75% in 2022, versus 9.06% in 2021. Given the potentially disparate nature of the transactions, we caution against using the price/AUM valuations as a run rate or to directly compare the year-to-year ratios.

Despite the lower value of transaction in 2022, some trends emerged in the 2022 activity. Some of the more notable transactions involved a traditional asset manager acquiring assets in the private credit and/or alternatives space. Specifically, on July 1, 2022, AllianceBernstein Holding L.P. (AB) completed its acquisition of Minneapolis, Minnesota-based CarVal Investors for $750 million and an undisclosed multi-year earn-out, subject to certain targets being reached. CarVal is a privately-held asset manager with about $15 billion of AUM, primarily focused on opportunistic and distressed credit, renewable energy infrastructure, specialty finance, and transportation investments. This transaction is just one element of AB’s expansion into the private alternative space. AB announced in late June 2022 that it had entered into a strategic partnership with Impact Engine, a private equity and venture capital investment firm with a focus on impact investing. This new partnership with AB is set to focus on creating purpose-driven investment offerings for AB’s Bernstein Private Wealth Management unit with a focus on environmental sustainability, economic opportunity, and health equity across the venture capital, growth equity, and buyout fund space.

Franklin Resources, Inc. (BEN) extended its foray into the alternative asset management space in late 2022 when it acquired BNY Alcentra Group Holdings, Inc., a European credit and private debt manager with $38 billion of AUM, from BNY Mellon, for $350 million in cash at closing and up to another $350 million, subject to certain earn-out agreements over the next four years. BEN has also agreed to purchase all seed capital investments from BNY Mellon related to Alcentra, which were valued at about $305 million when the deal was announced, though terms of that transaction were not disclosed.

BEN completed its acquisition of rival asset manager Legg Mason Inc. (LM) for $50 a share in cash on July 31, 2020. Total consideration for the deal was about $6.5 billion, including the assumption of about $2 billion of LM debt. The combined entity had just under $1.4 trillion of AUM (as at December 31, 2022), propelling it to the upper ranks of asset managers. The deal also shifted the AUM mix of the combined firm to one that is 48% fixed income, 33% equities, and 19% money market and other assets. We expect the deal to be accretive to BEN after the implementation of a post-merger restructuring. Like many peers, BEN has seen its AUM pressured by net asset outflows, partly due to a shift in investor preferences to passive investments (like ETFs), something the deal with LM does not address.

While the BEN-LM merger can be characterized as a classic consolidation play, a more recent deal announced by BEN represents another trend within asset management M&A. In early January 2022, BEN completed its acquisition of O’Shaughnessy Asset Management, LLC (OSAM), a specialized asset manager with $6.4 billion of AUM when the deal was announced in September 2021. While OSAM’s size was not material enough for BEN to disclose the term of the transaction, the deal provides BEN with additional capabilities in the separately managed account business and enhances BEN’s factor-based and ESG capabilities.

T. Rowe Price Group, Inc. (TROW), the $1.3 trillion (AUM) asset manager that has had some negative fund flow trends in its core equity products recently, expanded its reach into the private credit investment space in late 2021 via its acquisition of Oak Hill Advisors, for $4.2 billion, mostly in cash. Oak Hill, an alternative credit asset manager, had about $56 billion of AUM at the time of the merger, and represents for TROW an opportunity to accelerate its expansion into alternative credit investments.

One of the most significant transactions in 2021 closed on March 1, when Morgan Stanley (MS) acquired Eaton Vance Corporation (EV) for cash and stock in a deal valued at around $7 billion (about $56.50 per EV share, plus a $4.25 a share pre-closing one-time dividend). The acquisition of EV, with about $500 billion of AUM in several proprietary strategies, including its Calvert unit, a leader in socially responsible investing, strategically enhances MS’s burgeoning investment management and wealth management capabilities in a deal accretive to both firms.

Invesco (IVZ), a global asset manager with more than $1.4 trillion of AUM (at year end 2022), has been addressing its eroding organic growth and shift in investor preferences by broadening its asset mix and product offerings through acquisitions. These efforts yielded results in 2021. Relative to its size, IVZ produced the most impressive fund flows in the 12 months ended September 30, 2021, with inflows of $120.5 billion on an AUM base of around $1.53 trillion as of September 30, 2021, producing an organic rate of AUM growth of nearly 9%. While some of these flows were into short-term assets (like money market assets), passive investments (ETFs) accounted for nearly half (or $56.8 billion) of IVZ's fund flows. Unfortunately, difficult market conditions in 2022 stopped this momentum, and IVZ experienced $500 million in long-term net asset outflows for the year.

We expect the firm to continue to build on this strategy and think IVZ may pursue selective acquisitions to further enhance and broaden its capabilities. IVZ's latest deal was completed in late May 2019 when it acquired OppenheimerFunds, Inc. from mutual insurer Mass Mutual for some $5.7 billion in cash and stock. This deal helped to propel IVZ's AUM base to more than nearly $1.2 trillion. IVZ previously expanded its presence in the ETF market through two key acquisitions in 2017: IVZ agreed to acquire Guggenheim Investments' ETF business, with some $36.7 billion of AUM at the time the deal was announced, and Source, a leading European-based ETF provider with $26 billion of AUM. While IVZ has been very active on the M&A front, the firm also attracted the attention of activist investor Trian Management, who gained two seats on IVZ's board in early November 2020. By February 2022, Trian's representatives relinquished their board seats at IVS, but remained shareholders and expressed confidence in IVZ's current management team and its strategy.

While IVZ seeks to increase its presence in the passive investment space, CFRA anticipates that market leader BLK will pursue a more technology-focused acquisition strategy as it seeks to increase the contribution to firm-wide revenues from its BlackRock Solutions Group. Central to that goal is the firm's Asset Liability and Debt and Derivative Investment Network – dubbed Aladdin for short. This comprehensive portfolio and risk management program monetizes the systems and processes already being used by the firm, whose reputation as a top-tier risk manager has aided the demand for its Aladdin portfolio solution. We expect future acquisitions to be more "bolt-on" rather than transformational and will likely be in the artificial intelligence and fintech space, like the May 2019 acquisition of eFront, a software provider for the alternative investment segment, for $1.3 billion in cash.

Another trend that CFRA believes will likely continue to drive deal volume in the asset management space is the consolidation of registered investment advisors (RIAs). This subset of the asset and wealth management industry remains very fragmented and ripe for consolidation as it faces many of the same competitive pressures as other asset management participants. Many of these deals occur through so-called consolidators, firms established to acquire individual RIA practices and consolidate them into larger practices. Goldman Sachs & Co. took RIA consolidation a step further in late July 2019 when it acquired United Capital, an RIA consolidator with $23 billion in AUM, for $750 million in cash as part of its larger plan to increase its exposure to mass affluent individuals.

Finally, as socially responsible investing is becoming a mainstay within the asset management space, and demand for ESG investments (or those employing environmental, social, and governance standards) skyrockets in the aftermath of the Covid-19 pandemic, many asset managers are seeking acquisitions as a means of addressing this growing need. For instance, Affiliated Managers Group (AMG) announced its strategic partnership with Parnassus Investments, the largest ESG-dedicated fund manager in the U.S. The deal announced on July 6, 2021, calls for AMG to acquire a majority equity interest in Parnassus, a San Francisco-based asset manager with $47 billion of AUM invested under ESG principles.

Regulatory and Legislative Update

The Inflation Reduction Act of 2022 Will Have a Limited Impact on Traditional Asset Managers

The Senate passed the Inflation Reduction Act (IRA) on August 7, 2022, and on August 16, 2022, President Biden signed the Act into law. Touted to reduce inflation and allocate resources toward fighting climate change, the new law (and successor to the House-passed Build Better Act of late 2021) has several tax implications for corporations, but leaves a controversial private equity tax loophole intact. The most significant tax implication in the IRA is the 15% minimum tax on corporate income for corporations with profits over $1 billion, effective for tax years after December 31, 2022.

CFRA expects this component of the IRA will have a limited impact on most traditional asset managers and custody banks, which typically pay income taxes at a rate above the 15% minimum threshold. BlackRock, Inc., for example, paid income taxes of just under $2 billion on pretax profits of just over $8 billion in 2021, for an effective tax rate of around 25%. Custody banks typically have had a slightly lower tax rate, but also above the 15% threshold. Another example is State Street Corporation, which paid taxes at an average rate of around 16.3% over the last several years (2020-2022). Some private equity firms, however, could see a modest increase in their tax burdens under this plan. Blackstone, Inc., for example, paid taxes at an average annual rate of just over 12% in the last three years (2020-2022), though other private equity firms, like Apollo global Management, Inc. and KKR Inc, had average tax bills above the 15% threshold imposed by the IRA.

Another tax element of the IRA is a newly created excise tax of 1% on the value of stock repurchases, beginning with taxable years after December 31, 2022. Stocks that contributed to retirement accounts, pensions, and employee-stock ownership plans (ESOPS) are excluded from this tax. Most of the publicly traded custody banks and asset managers have some form of a stock buyback program, so most will be impacted by this change.

Carried Interest is Left Untouched in the New Tax Plan

One of the more contentious and controversial aspects of the IRA was the tax treatment of carried interest. Carried interest is the share of a private equity fund’s profits (usually around 20%-25%) that are allocated to the fund’s managers as a form of compensation, usually only after the fund achieves certain performance thresholds. Because carried interest is considered a return on investment, it is taxed at the capital gain rate, currently no more than 20% for long-term gains. Despite a renewed call to tax these gains as ordinary income, the IRA left the taxation of carried interest untouched, at the lower capital gains rate.

“SECURE 2.0” is Signed into Law in Late 2022

Nearly three years after the passage of the SECURE Act, the SECURE 2.0 Act of 2022 was signed into law on December 29, 2022. Aiming to build on the progress of the SECURE Act, SECURE 2.0 makes a number of adjustments to retirement account required minimum distributions and enhances the amount of catch up contributions that older savers are permitted to make into their accounts. In an effort to encourage more Americans to save for retirement, SECURE 2.0 allows retirement plan sponsors to treat student loan payments as elective deferrals for purposes of retirement account matching contributions. The new law also mandates that new 401(k) and 403(b) plans must include an automatic enrollment mechanism, and the new law makes it easier for part-time workers to be included in retirement plans.

The SECURE Act Takes Aim at the Retirement Crisis

Amid strong bipartisan support over the need to tackle the current retirement savings crisis, the SECURE (or Setting Every Community Up for Retirement) Act was signed into law on December 20, 2019. Central to the SECURE Act are a number of reforms and tweaks to current legislation that are designed to make saving for retirement easier and more accessible for most Americans.

Though near-term economic pressures brought on by the outbreak of Covid-19 obscured the positive implications from the SECURE Act, CFRA believes the benefits of the SECURE Act will begin to emerge in the aftermath of the pandemic.

Citing a number of alarming statistics – including one that notes nearly half of American families have no retirement savings – Congress passed bipartisan legislation that was signed into law in December 2019 taking aim at this crisis. The Setting Every Community up for Retirement Enhancement Act of 2019 – aka the SECURE Act – includes the provisions from an earlier measure, the Retirement Enhancement and Savings Act (RESA), which failed to pass during the last Congress. Specifically, the SECURE Act incentivizes employers to create 401(k) retirement plans by allowing small employers to band together to share the cost of offering 401(k)s, while requiring employers to cover long-term part-time workers by 2021. The SECURE Act also expanded the investment options within retirement accounts to include annuities, a big win for annuity providers. For plan participants, the SECURE Act raised the age when required minimum distributions must begin, to 72, from 70 ½. Plan participants may also continue contributing to these plans beyond the current cut-off age of 70 ½. Other withdrawal features were also implemented, including one that allows new parents to withdraw, penalty-free, up to $5,000 from their workplace retirement plan for each new child. To fund the cost of these initiatives, the SECURE Act eliminated the “stretch” provision of inherited IRAs that previously allowed non-spouse beneficiaries to spread (or stretch) the required disbursements from these accounts over their lifetime. Now, disbursements must be collected and taxed within 10 years of the original holder’s death.

Biden Administration Instituted ESG Investment Under the Fiduciary Rule

As the Biden Administration eventually turns its attention to the finer points of the fiduciary rule, it will likely expand who is bound by these strict regulations. By way of background, the Trump Administration’s Department of Labor (DOL) in mid-June 2018 failed to petition the U.S. Supreme Court to appeal the Fifth Circuit Court of Appeals’ decision to vacate the DOL’s fiduciary rule, essentially ending the legal drama surrounding this controversial (and costly) proposed regulation that expanded the definition of who is a fiduciary under terms of the Employee Retirement Income Security Act of 1974 (ERISA). However, in the wake of the DOL Rule’s demise, the Securities and Exchange Commission (SEC) unveiled its proposed investment-advice rule in late April 2018 as part of a series of standards, with plans to issue a final ruling by September 2019. When the DOL initially unveiled its “final fiduciary rule” on April 6, 2016, the primary stated goal was to ensure that intermediaries who get paid to provide financial advice to retirement savers make recommendations that are “in the best interest of the investor” as opposed to the previous standard that required recommendations to be “suitable”. The rule expanded the definition of who is an investment advice fiduciary under ERISA, and would have elevated all financial professionals who work with retirement plans or who provide any level of retirement advice to the level of a fiduciary. Essentially, this meant that anyone selling retirement products (such as a stockbroker or an insurance agent) would no longer just have a legal duty to provide advice that is suitable; they would have been elevated to the highest legal obligation embedded in a fiduciary relationship. The SEC proposal, in its current form, is not seeking to create a uniform standard for brokers and investment advisors and instead would maintain the current, two-tiered approach to investment advice standards. Brokers would be held to a “best interest” standard, an elevation from the current “suitability” standard. There are some exceptions to this rule, and the SEC does not refer to this as a fiduciary standard. The SEC’s proposal also aims to implement its new broker standard through a combination of enhanced disclosures, including those that outline potential conflicts of interest over compensation and the sale of a firms’ proprietary products. There is also an element of “title reform” in the current SEC proposal – meaning those firms only registered as broker-dealers would not be able to refer to their brokers as advisors (unless they were registered as such). However, this restriction would not apply to those intermediaries working on behalf of a bank or insurer. The proposal also contains the SEC’s interpretation of advisors’ fiduciary obligations, and seeks feedback on potential enhancements to those legal obligations.

In November 2022, Biden Administration officials reversed the environment, social, and governance (ESG) restrictions on retirement plans previously imposed under the Trump Administration. This new rule will ease the procedures of investing in socially responsible funds and companies for retirement plans. The Trump Administration's rule was criticized by business groups and the financial industry for failing to take into consideration the positive impact that ESG could contribute to long-term investment returns. The new rule also allows fiduciaries to consider ESG factors when proxy voting on behalf of shareholders. The DOL stated that the new policy would help to eliminate unnecessary barriers to investing according to ESG principles created by the prior administration.

SEC's Focus on Data and Analytics Will Force Asset Managers to Do the Same
One additional takeaway from the demise of the DOL fiduciary rule is the re-emergence of the SEC as the financial industry's primary regulatory authority. As such, the SEC's office of investment management has indicated one of its near-term priorities will be on data and analytics – specifically, the quality and integrity of data collected and the security of that data. CFRA believes that one of the more bifurcating factors within the asset management industry (particularly among lower tier firms) is their tech-savviness and their cyber security defense. Indeed, some larger asset managers (including BlackRock) have started to monetize their own technology and analytics capabilities and have started offering those services to competitors. Despite this focus, the U.S. has not enacted broad-based data protection legislation, like the General Data Protection Regulation (GDPR) enacted in the European Union (EU) on May 25, 2018.

The European Union Has Taken the Lead in Data Protection
The EU's GDPR took effect in May of 2018 and has now been fully implemented following a transition period. This far-reaching initiative regulates the processing of personal data of individuals in the EU by other individuals, companies and/or organizations. Some of the tenants of the GDPR include a provision that mandates consumers be informed if their personal data is moved outside the EU, offers consumers the right to contest the use of their data for marketing purposes, and offers consumers the right to be "forgotten" (*i.e.,* dropped from databases). There is also a right to data portability in the GDPR, which allows consumers to receive their data and send it wherever they choose. To ensure compliance (which can be costly), there are severe penalties for violation of the code.

The U.S. Lacks a Comprehensive Data Protection Program – the States are Moving Forward with Privacy Legislation
Despite a broad-based and sweeping acknowledgment by most federal agencies that cybersecurity threats are one of the top risks facing the financial services industry, the U.S. currently does not have data protection regulation similar to the EU's GDPR (highlighted above). However, New York and California have passed legislation to address this situation several years ago, and in 2021, 23 other states have followed suit and introduced privacy legislation, the California Consumer Privacy Act of 2018 (CCPA) took effect in July 2020 and in its current form (which may be subject to future revisions), it provides California citizens with similar protections to those offered EU citizens under the GDPR. The CCPA gives California citizens the right to access their personal information and to know how their information is being used, as well as the right to have their information removed in certain circumstances. One of the more contentious elements of the CCPA is its provision that allows for civil class action lawsuits in the event of statutory or actual damages arising from a data breach.

The New York State Department of Financial Services cybersecurity regulation initially took effect on March 1, 2017, with a two-year phase-in period that concluded on March 1, 2019. Central to this regulation is the requirement that companies create a written cybersecurity policy, designate a chief information security officer, conduct periodic testing and vulnerability assessments, and establish cybersecurity controls and protocols for third-party risk management.

The debate on the U.S. data protection legislation has been ongoing for many years. On July 9, 2021, President Biden signed an Executive Order on "Promoting Competition in the American Economy", which includes a number of provisions for data protection and privacy. The order urges the U.S. Federal Trade Commission to establish new rules over tech firms' data collection of their customers as it should offer more privacy protections to American consumers. We think the executive order is a steppingstone to approach the lack of data protection in the country with hope that the administration will soon push this initiative forward to enact the legislation.

HOW THE INDUSTRY OPERATES

Asset Managers

The asset management industry includes organizations that offer products such as mutual funds, ETFs, closed-end funds, and unit investment trusts, as well as investment counseling firms and other groups that manage the pooled savings of individuals or organizations. By pooling the savings of investors, investment managers provide a number of benefits to individual investors, such as diversification, reduced risk, lower transaction costs, and professional advice.

The primary revenue source for most asset managers and fund companies is fee income derived from their AUM base. We estimate that AUM for the entire regulated fund industry grew at a 9.6% CAGR in the 10 years ended 2021. However, amid an environment marked by downward pressure on fees and a shift to lower-cost no-load mutual funds and ETFs, expense ratios for mutual funds have plummeted. Equity mutual funds and bond mutual funds in the U.S. have experienced a 53% and 49% decline respectively in their expense ratios since 2000.

The asset management industry is not a capital-intensive business, but rather a service business, where employees, performance record, and customer relationships are the most valuable assets. A significant portion of a company's performance success is attributable to its portfolio managers and securities analysts, who formulate investment strategies and make decisions on security holdings. As such, retaining and compensating these professionals appropriately is critical to an investment company's success and longevity.

However, as asset managers grapple with mixed fund flow trends and continued downward pressure on fee structures, many have initiated a number of restructuring actions to streamline their cost structures in an attempt to maintain margins. Firms including The Bank of New York Mellon Corporation and T.Rowe Price are taking a critical look at their "back office" functions and implementing an array of cost-cutting, outsourcing, and consolidation actions in an attempt to streamline results and boost margins.

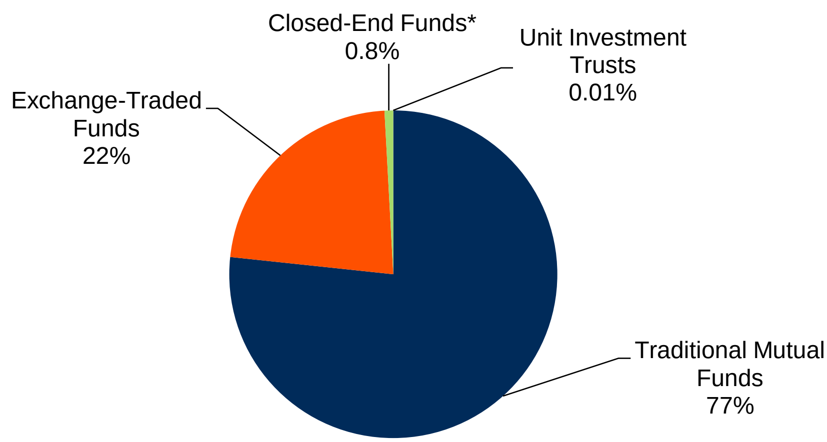
Most mutual funds continuously offer new shares to the public at the net asset value (NAV, the current value of a fund's net assets less any sales charges). Mutual funds typically distribute their shares through brokers, financial planners, or insurance agents, but may also offer shares directly from the fund itself. By law, mutual fund managers keep securities with a custodian, such as BK, STT, and NTRS.

Investment Asset Allocation

According to the ICI, the net asset for worldwide regulated funds (*i.e.,* regulated open-ended funds including mutual funds, ETFs, and other institutional funds) decreased to $56.2 trillion (or 6.5%) in the third quarter of 2022 from $59.9 trillion in the second quarter of 2022. This compares to the worldwide value of capital markets – or the value of equity and debt securities outstanding – of $259.6 trillion at year-end 2021.

In the U.S., mutual funds continue to represent the majority of investment asset allocation at 77%, with a total net asset of $22.1 trillion as of December 2022, followed by ETFs at 22% or $6.5 trillion and closed-end funds at 1% or $244.3 billion (as of the third quarter of 2022).

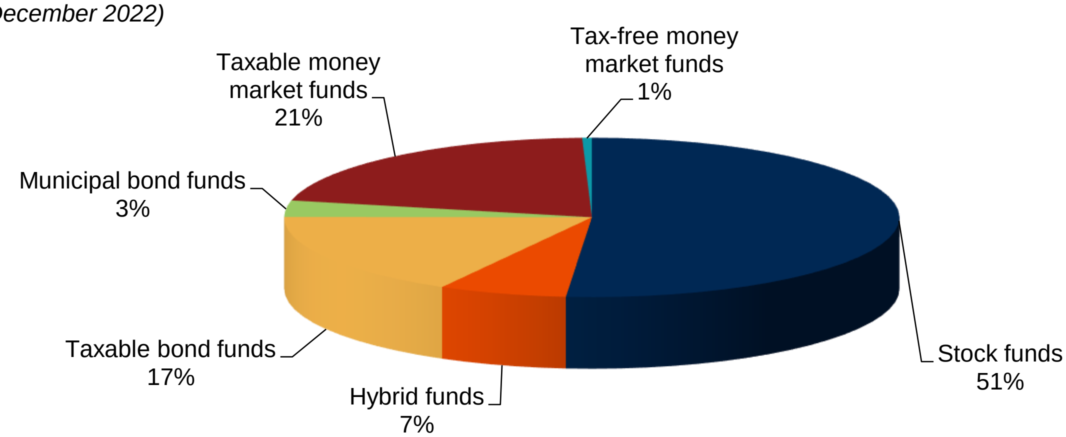
INVESTMENT COMPANY ASSET COMPOSITION
(as of December 2022)



*Close-End Funds data as of Q3 2022.
Source: Investment Company Institute.

At the end of December 2022, equity funds remained the largest segment of fund industry assets in the U.S., as shown below.

U.S. MUTUAL FUND ASSETS BY TYPE OF FUND
(as of December 2022)



TOTAL: $22.1 trillion

Source: Investment Company Institute.

Fund Ownership and Demand

Ownership of mutual funds has increased steadily on a global basis over the past two decades, with the U.S. maintaining its lead as the world's largest fund market in 2021 (latest available), with $34.2 trillion, or about 48% of the world's fund assets. Europe held $23.3 trillion (or about 33%), while Asia-Pacific and Africa accounted for $10 trillion (14%) of net fund assets.

One way to gauge the demand curve for investment funds by region or country is to analyze the level of development of a country's stock market. A key metric to use in this exercise is the ratio of stock market capitalization as a percentage of gross domestic product (GDP). Typically, as stock market capitalization rises relative to GDP, so do the assets in regulated investment funds. So, countries like the U.S., the U.K., and Switzerland, where stock market capitalization exceeds GDP (in some cases by 2-to-1 ratio), have developed fund industries and robust fund demand. Conversely, countries like China, Russia, and

Poland have a stock market capitalization that averages half of GDP and corresponding underdeveloped fund industries. One significant outlier to this exercise is Japan. While Japan has a ratio of stock market capitalization to GDP of about 1.33 to 1, demand for regulated funds is below that of other similarly developed nations, reflecting Japanese households' preference to save via bank deposits. As a result, Japanese households only have 5% of their wealth in regulated funds, while households in the EU have 10% and those in the U.S. have 23%.

In 2021, 47.9% of all households in the U.S. owned fund shares, according to the ICI Profile of Mutual Fund Shareholders 2021 (latest available). Among those households that owned mutual fund shares, the median value of those assets was $200,000 in 2021, spread among three different funds, on average.

Separate but related to the regulated funds market is the market for retirement assets in the U.S., which totaled $39.4 trillion in 2021, according to data from the ICI. In 2021, 63% of U.S. households had some form of a tax-advantaged retirement savings account (like a 401k or IRA). As of year-end 2021, $12.6 trillion (or 32%) of retirement assets were invested in mutual funds.

Custody Banks

Custody banks are specialized financial institutions that provide asset safekeeping and other related custody services for their customers – generally large institutional investors including mutual funds, retirement funds, sovereign wealth funds, central banks, alternative investment funds, insurance companies, foundations, and endowments, as well as personal and family trusts. The four largest custody banks in the U.S. are BNY Mellon, State Street, JPMorgan, and Citigroup.

TOP U.S. CUSTODY BANKS BY TOTAL ASSETS UNDER CUSTODY
(ranked by latest end of year figures, in $, millions)

		Assets Under Custody ($ trillion)			
NO.	COMPANY NAME	Q1 2022	Q2 2022	Q3 2022	Q4 2022
1	Bank of New York Mellon	45.5	43.0	42.2	44.3
2	State Street Global Advisors	41.7	38.2	35.7	36.7
3	JPMorgan Chase & Co	31.6	28.6	26.5	27.2
4	Citigroup	23.0	21.1	20.7	22.0

Source: Company reports.

The services provided by a custody bank can be categorized into three primary areas – custody services, supplementary services, and other administrative services.

◆ Custody Services

Custody servicing activities are the core services offered by custodians and they include safekeeping and record-keeping services, asset servicing, transaction processing and settlement, and banking services.

- **Safekeeping and Record-Keeping Services:** Custodians are primarily responsible for the safekeeping of clients' assets. They record the number of securities deposited by their clients, reconcile their holdings with a central securities depository, and also segregate securities from the custodians' own assets.

- **Asset Servicing:** Custodians also offer asset administration services such as income and tax processing, corporate action processing, collateral processing, securities valuation, as well as reporting services.

- **Transaction Processing and Settlement:** A custodian also facilitates the delivery or receipt of a security and the corresponding cash consideration whenever a client engages in the purchase or sale of a security.

- **Banking Services:** Banking services provided by custodians relate primarily to the processing of payments and other transactions that result from client investment activities.

◆ **Supplementary Services**
On top of core custody services, custodians also offer other services that are ancillary to the custody function, which are agency securities lending and foreign exchange services.

- **Agency Securities Lending Services:** As custodians' clients commonly hold large quantities of liquid debt and equity securities, custodians have developed agency services that allow clients to lend securities to other investors as an additional source of yield on their assets.

- **Foreign Exchange Services:** Some custodians may offer clients foreign exchange products and services such as execution of spot and forward FX transactions and, in some cases, act as market makers in certain currencies to provide liquidity.

◆ **Administrative Services**
Other than the provision of core custody and supplementary services, custodians have started to offer custody-related administrative services which are complementary to the operation of their clients' securities and cash accounts. Administrative services offered by custodians to clients typically include fund accounting and administration services, transfer agency services, collateral processing services, and outsourcing services.

- **Fund Accounting and Administrative Services:** This generally involves reporting the value of assets as well as fund expenses in clients' account, and then communicating the net asset value to the respective recipients.

- **Transfer Agency Services:** Transfer agency services consist of acting as the registrar of a fund, processing and recording subscriptions to and redemptions of fund shares by investors, interact with the fund's custodian to make payments to and from the fund's cash account, and acting as a reporting agent to a fund's shareholders, distribution agents, and regulatory authorities.

- **Collateral processing services:** Custodians also provide services to support collateralized transactions, which includes verifying the amount of credit exposure, calculating margin requirements, and executing margin calls.

- **Outsourcing Services:** Generally consist of activities such as transaction management, cash management, record-keeping and accounting, data management, reconciliation, and performance measurement and analysis.

Private Equity

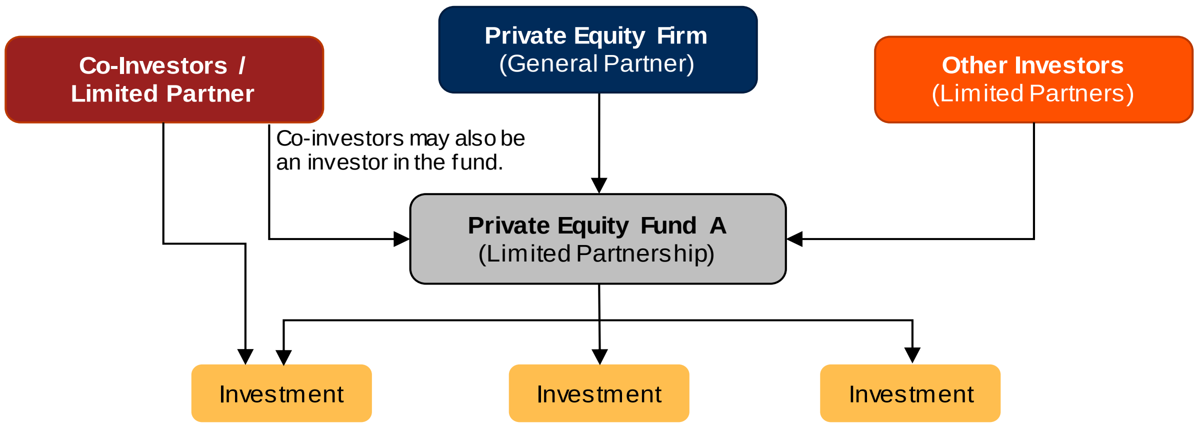
Private equity (PE) firms also manage the pooled savings of investors, but unlike asset managers, they generally invest in companies that are not publicly traded and/or public companies, which are then de-listed from public exchanges. A PE firm is made up of limited partners (LPs) – external institutional investors (*e.g.,* insurance companies, endowment funds, banks, foundations, pension funds, etc.) that provide capital and general partners (GPs) – professional investors who manage the PE firm and deploy the funds for investments. The total liability for LPs is limited to the capital contributed and is usually a minimum of $1 million.

A PE fund is usually structured as a limited life partnership, allowing each partner to cooperate for a specified period without creating an additional layer of taxable income. These funds generally have a lifecycle of 7 to 15 years with several overlapping stages:

- Fund Raising (Years 0 to 2)
- Deal Sourcing and Investing (Years 1 to 4)
- Portfolio Management (Years 2 to 7)
- Exiting Investments (Varied time frames)

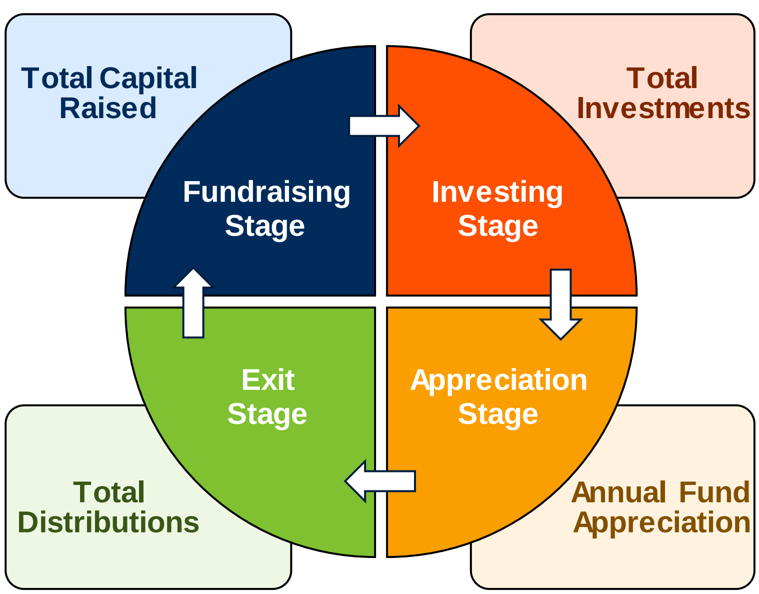
In some arrangements, partners are allowed to invest directly in each individual investment as well as, or instead of, the whole fund. This practice is called co-investment and they usually come with lower or sometimes even no fees, unlike the high management and performance fees charged by a PE fund. From GPs' perspective, a co-investment setup allows the GP to invest in a desirable opportunity that would otherwise be too large for the main fund given exposure limitations and diversification requirements.

PRIVATE EQUITY STRUCTURE



Generally, it is common for successful PE firms to form multiple funds for different investment strategies and styles. For example, a PE firm may begin raising funds for fund 1 and conduct deal sourcing and start making investments. After investing the majority of the capital in fund 1 (usually after a few years), the PE firm will restart the process and initiate the fundraising for fund 2.

Key Metrics in a Private Equity Fund Lifecycle



Source: The Carlyle Group.

◆ **Fundraising Stage** generally starts from year 0 to 2 of a PE fund. During this stage, any increase in total capital raised (or committed capital) will lead to increases in recurring fund management fees for the firm.

◆ **Investing Stage** usually runs from year 1 to 4 and it refers to the period when a fund begins sourcing for deals and making investments. The success of this stage could be measured by the amount of annual and total investments as the firm takes on multiple investment opportunities.

◆ **Appreciation/Growth Stage** continues from year 2 to 7 and it is when the firm focuses on managing the investment portfolio in efforts to increase its value. The performance of the firm could be assessed through the appreciation or depreciation of the PE fund, which will directly impact the fair market value of invested capital. Appreciation (depreciation) of the fund will contribute to greater (lower) performance fees for the firm.

◆ **Exit Stage** begins when a fund starts to exit its investments. This is normally done through exit strategies including but not limited to trade sale, leverage buyout, initial public offering, and private placement. Cash collected from exited funds will be distributed to investors and any amount above the hurdle rate are gains that will determine the realized performance fees for the firm.

Private Equity Investment Strategies

There are numerous investment strategies that a PE firm may employ, but the two most common ones are leverage buyouts and venture capital.

Leverage buyouts refer to a strategy whereby a target firm is bought out by a PE firm using capital acquired from loans or bonds (leverage). Companies that are involved in a buyout transaction are usually mature companies that are generating operating cash flows. A PE firm would purchase the company when it is confident that they can increase its value over the longer term through active management, focusing on achieving a return higher than the cost of leverage.

Venture capital generally involves younger firms, start-ups, or early-stage companies that are often without any proven track record. PE firms are likely to invest when there is noticeable potential in the industry but more importantly in the target firm itself. Due to the limited access to capital and/or resources for these companies, PE firms are able to take on huge ownership stakes for hopes that the target firm will grow into a market leader in its industry.

As a compensation for the riskiness of these investments, PE firms typically demand higher rates of return, making them an expensive source of capital. However, these firms are usually equipped with experienced professionals and are able to provide guidance to inexperienced management along the way, indirectly generating additional value to the firm. Venture capital will be the best source of funds for firms that require large initial capital and are unable to obtain financing from alternative sources.

Other than the aforementioned strategies, there are few other strategies that are common among PE firms, such as:

- **Growth Capital** – Finance mature companies that are looking to expand/restructure existing operations, enter new markets, or finance an acquisition.
- **Real Estate** – Invest in ownership of various types of real estate properties. Four common strategies are core, core plus, value added, and opportunistic.
- **Funds of Funds** – Invest into other funds instead of directly into securities, bonds, or stocks.
- **Distressed / Special Situations** – Invest into target companies that need restructuring, turnaround, or are in any unique circumstances.

HOW TO ANALYZE A COMPANY IN THIS INDUSTRY

Asset Managers

A basic review of an asset management company involves analyzing net client flows, relative fund performance, breadth and mix of product offerings, types of clients, operating margins, and management consistency. These firms earn advisory or management fees for investing and managing the assets of their clients; the fees are typically calculated based on either ending or average AUM on a monthly or a quarterly basis. Therefore, increases in a company's AUM, both in absolute terms and relative to its peers, merit a careful analysis, as they are an important valuation driver. The mix of AUM is also an important factor, since passive investments (like ETFs are faster growing, but have a much lower fee structure than active investments. Similarly, a mix of actively managed AUM heavily weighted with fixed-income investments will likely have a lower fee structure than one more heavily weighted with equities.

It is helpful to discern whether the changes in AUM are a function of client inflows and outflows or due to changes in securities prices. Given the volatility of debt and equity markets, CFRA views net client flows as a better indicator of the health of a firm's underlying portfolio and fund lineup. Client redemption relative to total AUM is also an important metric, given that attracting new assets often entails sales commissions and marketing expenses, which can reduce profitability. Companies with institutional and high-net-worth clients typically have lower redemption rates than companies with retail clients. Further, redemption rates tend to be lower for retirement accounts, such as individual retirement accounts and 401(k) plans.

Fund Performance: The Key Driver of Client Flows

Relative fund performance (*i.e.*, track record) of asset management companies is a primary determinant of net client flows, and, in turn, valuations, given CFRA's view that money chases performance. Fund performance is often measured over several years, and it represents an important and sustainable competitive advantage for certain industry participants.

Other important factors are investor sentiment, distribution channels (retail versus institutional), and the composition of AUM, which can indicate a company's asset diversification and potential earnings volatility. Given the inherent volatility of capital markets and investor sentiment, diversification can help investment companies mitigate earnings volatility, maintain investor confidence, and retain client assets over various economic cycles.

The Income Statement

The income statement provides the investor with concrete measures of operating performance. For asset managers, important measures include revenues, expenses, and certain profitability ratios, such as net profit margin and return on equity (ROE).

◆ **Revenues.** The revenue growth of asset management companies generally tracks the growth in AUM. Revenue growth is difficult to forecast since no one can predict price movements with certainty.

Watch Out! *The fee structure for asset managers generally results in negative net cash flow to capture new accounts. By capitalizing certain sales commissions paid to broker/dealers as assets, asset managers are able to match revenues and expenses more closely. However, if client assets do not remain under management for a sufficient period of time, deferred sales charges and management fees could be insufficient to cover these up-front costs.*

◆ **Expenses.** Compensation costs are often one of the largest expenses for an asset management company, and compensation of portfolio managers is often tied to investment performance, which can reduce operating leverage. For asset management companies that distribute their products through third parties, underwriting and distribution costs are a large proportion of total expenses. Other major cost items include advertising, promotion, occupancy, and technology expenses. The asset management industry benefits from economies of scale and low operating leverage.

◆ **Net profit margin.** Asset management companies are extremely profitable. They regularly post net profit margins (net income divided by total revenues) that are well in excess of those achieved by most industrial companies.

◆ **ROE.** This measure is net income divided by average shareholders' equity. ROE measures how efficiently a company employs shareholders' capital.

Valuation
The preferred valuation technique for asset managers usually involves calculating the Price-to-Earnings (P/E) ratio. Other tests, such as market capitalization to AUM and a multiple of advisory revenues, can be useful.

The popularity of different products varies with the investment environment and asset flow trends, and influences P/E multiples. In addition, a greater emphasis on higher fee products can justify higher valuation. For instance, companies with more emphasis on equity and international products may earn higher fees and this may lead to those companies enjoying relatively higher P/E ratios than those focused on purely domestic investments.

Historically, companies with more equity exposure tend to have higher P/E ratios than those investing in fixed-income securities, given the higher management fees earned on equity assets and greater active management involved due to the perceived higher risk.

Custody Banks

Custody banks are a unique group in the financial sector. Many custodians do not participate in traditional lending businesses except as part of their broader service offerings to clients. For most commercial banks, net interest income represents the majority of the banks' revenue, and these are derived from the holding and issuing of deposits and loans – which also make up a significant portion of the banks' balance sheet. Given the business nature of custodians, both their income statements and balance sheets are quite different from other traditional banking businesses.

Revenue Source
◆ **Fee Revenue** compose a majority of revenues for custodians. We note that there is some variability in categorizing fee-based revenues from custody services, but they generally represent asset servicing fees, fund administration fees, securities brokerage fees, payment fees, securities lending fees, and fees from data solutions. These fee-based revenues are mainly calculated from the market values of assets under custody (AUC) and/or administration (AUA), making it fairly immune to the effects of varying interest rate environments. Rather, it is more correlated to client investment activities (*i.e.,* transaction volumes) and overall market conditions (*i.e.,* market values of assets).

The fee revenues from custody services are usually steady and predictable, even during periods of financial stress. Custodians that have a large percentage of fee revenues to total revenues are likely to have a relatively stable profit margin which allows them to maintain healthy capital ratios, thus, being more resilient during periods of financial market uncertainty.

◆ **Net Interest Income.** Custodians also generate income in the form of net interest income, albeit a smaller portion of total revenue. This form of income comes from the interest earned on the reinvestment of clients' cash deposits and interest charged on credit extended to clients for the purchase of securities. While it represents a significantly lower percentage of revenues compared to most commercial banks, net interest income is still important to the overall profitability of a custody bank.

Balance Sheet

Custody banks are generally measured on assets under custody (AUC) or a combination with assets under administration (AUC), but these are not recognized on the balance sheet as they are not the property of the custodian. Rather, these assets remain as the property of the beneficial owners and are recognized on their balance sheets. As a result, the beneficial owners will bear the risks (*e.g.,* credit risk and market risk) associated with the assets.

The balance sheets of custodians are usually liability-driven and primarily consist of clients' cash deposits. These cash deposits are made up of 3 components – client-deposited cash balances, proceeds from the sale of securities, and cash distributions from client securities. As custody banks are free to use the cash for its own purposes, these cash deposits are reflected as liabilities on the balance sheet, while the resulting investments (cash deposits are generally invested in high quality liquid assets) are reported as assets.

◆ **Liabilities (Client Deposits).** Client deposits can be segregated into two distinct types: operational deposits and other/excess deposits.

- Operational deposits refer to deposits that are required for custodial and other operating activities. These deposits are necessary to perform custody services, without which the custodian might not be able to provide the required level of service. Hence, they usually represent a stable funding source for the custodian and are unlikely to be withdrawn frequently.

  Generally, the activities that require funds from operational deposits include purchase and sale of securities, dividends and interest payments, corporate action events, as well as client subscriptions and redemptions.

- Excess deposits refer to additional amounts deposited in clients' account and are common during periods of financial market stress. As custodians are viewed as "safe havens" in times of financial stress, there may be significant growth in their balance sheets arising from client's desire to hold cash deposits instead of other assets.

Other than client deposits, custodians have few other liabilities on their balance sheets. While these institutions may occasionally borrow funds from other lenders, the liquidity provided by clients through their cash accounts are largely sufficient, which alleviates the need for liquidity from external lenders.

◆ **Assets** associated with a custody bank consist of two main categories: cash on deposit with other institutions and high-quality liquid investment securities. Other than generating a return, these investment securities are also used as collateral to obtain intraday and overnight financing from entities in connection with the purchase of clients' securities.

Some custody banks also do provide short-term loans in connection with providing custody services. These credit facilities have short-term maturities of about one to two months and are largely subjected to the custodians' ability to meet asset quality and diversification requirements. This limited lending activity usually represents a relatively low percentage of net loans and leases recognized on the balance sheets of custodians.

As custody banks do not have material market-making or dealing activities, they generally have small amounts of trading assets on their balance sheets.

Private Equity

As most PE firms are in the business of creating value from private companies, it is extremely difficult to determine an accurate valuation due to the lack of data transparency and unpredictability of the firm's cash flows. Regardless, we think understanding the sources of income for a PE firm as well as the key metrics at each stage of a fund's lifecycle could approximate the strength of a PE firm.

In general, a PE firm generates income from two main sources: fund management fees and performance fees. Fund management fees are relatively predictable and easier to analyze/project, while performance fees are sporadic in nature and are affected by the combination of many macroeconomics and company-specific factors.

Fund Management Fees

PE firms (or GPs) receive long-term recurring management fees in exchange for services provided in managing the fund. These fees are used to fund operating costs such as staff salaries, general business expenses, and the remuneration of partners. Excess over these costs is retained by the firm and may be distributed to the partners/shareholders of the fund. As a result, GPs are faced with the constant challenge of balancing between reinvesting the recurring fee income to grow the business or retaining top partners by offering attractive remunerations.

These fees could be defined as a percentage of capital committed, invested capital, and/or AUM and they usually range around 2% to 3% in smaller funds to 0.5% to 2% for larger funds. For example, PE firm – The Carlyle Group charges 1% to 2% of committed capital in the "investment period" (first 4-5 years of the fund) and 0.6% to 2% of invested capital outside the "investment period" (last 4-5 years of the fund).

Watch Out! *As fund management fees are positively correlated to fund sizes, larger funds are able to receive substantial fees regardless of whether the fund performs or not. Since excess funds are usually distributed to partners, they are essentially hauling in risk-free profits if they could successfully raise a large fund, which could potentially result in the misalignment of interests between partners and shareholders.*

Performance Fees

The second source of income for PE firms are performance fees which are also commonly known as carried interest. These fees are usually structured at 20% of the gains, but only available after achieving a return above a hurdle rate (about 8%-9% on average) specified by the fund, net of fund related expenses. A fund that is eligible to generate "accrued" performance fees are known to be "in carry" and the fees will be recognized on the firm's balance sheet as accrued or unrealized performance fees until distribution or exit.

- **Realized performance fees** are generated when a fund has a distribution event (*e.g.,* an exit or dividend). The amount to be paid to the GP are usually determine through a distribution waterfall process. In this process, 100% of investment returns are allocated to the LPs until the amount of capital committed plus the preferred return (hurdle rate of return) are fulfilled. After that, 100% of returns will be distributed to the GP until the share of profits received equals the carried interest percentage (*e.g.,* 20%) of total amount distributed with respect to the preferred return (this stage is referred to as catch-up). Finally, remaining returns are split between the GP and LPs according to the carried interest percentage.

- **Accrued (unrealized) performance fees** refer to the fees that an unrealized fund would generate if all of its assets are sold at fair value at the end of a given period. In any distribution event, the realization of performance fees would reduce the balance of the accrued amount in the balance sheet.

Watch Out! *PE companies hold significant amounts of investments that are valued using models or using market values that are derived from illiquid markets. These valuations are subject to significant management discretion. The policies applied to arrive at reported fair values for these investments can have a material impact on earnings or the balance sheet.*

GLOSSARY

Asset manager—An organization or individual that manages the financial assets of their clients professionally.

Assets under management (AUM)—Market value of assets managed by an investment company in behalf of the investors.

Bipartisan bill—A bill that is supported by two opposing political parties (e.g., Democrats and Republicans).

Carried interest—The share of profits paid to the investment manager (also known as the general partner) of a private equity fund as a form of compensation. Carried interest is usually only available when the fund generates a return exceeding a specified hurdle rate.

Catch-up—A clause in a private equity deal in favor of the GP. This allows the GP to receive all of the gains above the hurdle rate until the share of the profits received equals the specified carried interest percentage of total return.

Closed-end funds—A closed-end fund is a type of investment company with shares that are generally listed on a stock exchange or traded in the over-the-counter (OTC) market. Closed-end funds provide investors with flexibility and access to diverse investments. Assets are managed by professionals in accordance with the fund's investment objective and policies, and may be invested in stocks, bonds, or a combination of both.

Committed capital—An agreement between an investor and a private equity fund that creates the obligation from the investor to contribute money into the fund when called upon.

Custody bank—Financial Institutions that provide safekeeping services for its clients' assets and does not normally involve in regular banking activities.

Distributed ledger technology (DLT)—A database that simultaneously shares and synchronize data across multiple locations without any central administrator or centralized data storage. Any changes or additions in the ledger are communicated to all participants in extremely short amounts of time.

Distribution waterfall—A method of allocating the capital gains between the GP and LPs of a private equity fund. The process starts by returning the invested capital to the LPs as well as the return specified by the hurdle rate. Excess gains will be allocated to the GP according to the "catch-up" clause. Finally, any remaining gains will be shared between the GP and the LPs according to the carried interest rate.

Exchange-traded fund (ETF)—A marketable security that tracks indexes, bonds, a commodity, or an index fund. ETFs are traded like common stocks on an exchange.

General partner (GP)—The investment manager of a fund that receives compensations in a form of management fee and performance fee for services provided.

Hurdle rate—The minimum rate of return required by the investors. In private equity, this is the rate that the GP must achieve before being able to receive any carried interest/performance fees.

Initial public offering (IPO)—The process of offering the shares of a private company to the public for the first time.

Investment period—In a private equity fund, this generally refers to the period when the GP is actively sourcing and evaluating potential investments to be a part of the fund's core portfolio companies.

K-12—The K-12 system stands for "from kindergarten to 12th grade". This equates roughly to a school starting age of around five through to Grade 12 at around the age of 18.

Leverage buyout (LBO)—The acquisition of a company with the majority portion of the cost financed through debt.

Limited partner (LP)—The investors that commits capital into an investment fund to be managed by the GP. Typically consist of pension funds, institutional investors, and wealthy individuals.

Private placement—A sale of the investment directly to a small group of private investors rather than as part of a public offering.

INDUSTRY REFERENCES

PERIODICALS

ICI ETF Assets and Net Issuance
ICI Trends in Mutual Fund Investment
ICI Worldwide Regulated Open-End Fund Assets and Flows
http://www.ici.org/research/stats
Reports total sales, redemptions, and net new cash flows for U.S. and worldwide bond, income, and equity mutual funds, as well as for exchange-traded funds (ETFs).

Institutional Investor
http://www.institutionalinvestor.com
Examines trends in banking, pensions, corporate finance, insurance, corporations, and investing.

TRADE ASSOCIATIONS & REGULATORY AGENCIES

ETF.COM
http://www.etf.com
World's leading authority on ETF research and analysis.

Investment Company Institute (ICI)
http://www.ici.org
National organization representing U.S. investment companies, including mutual funds, closed-end funds, and unit investment trusts.

World Bank
https://www.worldbank.org
An international financial institution that provides loans and grants to the governments of low- and middle-income countries for the purpose of pursuing capital projects.

GOVERNMENT AGENCIES

U.S. Federal Reserve Bank
http://www.federalreserve.gov
The central banking system of the U.S., functions to promote the effective operations of U.S.'s economy.

US Bureau of Economic Analysis (BEA)
http://www.bea.gov
Agency that provides U.S. macroeconomic data and industry statistics.

RESEARCH AND CONSULTING FIRMS

Action Economics
http://www.actioneconomics.com
Research firm that provides in-depth analysis of economic data and projections.

S&P Global Market Intelligence
http://marketintelligence.spglobal.com
Provider of independent ratings, benchmarks, analytics, and data to the capital and commodity markets worldwide.

ONLINE RESOURCES

The Clearing House
http://www.theclearinghouse.org
A U.S. payments company that publishes whitepapers relating to the custody banking industry.

COMPANY RESOURCES

Affiliated Managers Group, Inc.
http://www.amg.com

AllianceBernstein Holding L.P.
http://www.alliancebernstein.com

BlackRock, Inc.
http://www.blackrock.com

Citigroup
https://www.citigroup.com

Eaton Vance Corp.
http://www.eatonvance.com

Federated Investors, Inc.
http://www.federatedinvestors.com

Franklin Resources, Inc.
http://www.franklinresources.com

Invesco Ltd.
http://www.invesco.com

Janus Henderson Group plc
http://en-us.janushenderson.com

Legg Mason, Inc.
http://www.leggmason.com

T. Rowe Price Group, Inc.
http://www.troweprice.com

The Blackstone Group
http://www.blackstone.com

The Carlyle Group
http://www.carlyle.com

COMPARATIVE COMPANY ANALYSIS

					Operating Revenues																
					Million $							CAGR (%)			Index Basis (2012=100)						
Ticker		Company		Yr. End	2022	2021	2020	2019	2018	2017	2016	10-Yr.	5-Yr.	1-Yr.	2022	2021	2020	2019	2018	2017
ASSET MANAGERS																					
AMG	†	AFFILIATED MANAGERS GROUP, INC.		DEC	2,329.6	2,412.4	2,027.5	2,239.6	2,378.4	2,305.0	2,194.6	2.6	0.2	-3.4	106	110	92	102	108	105
AB		ALLIANCEBERNSTEIN HOLDING L.P.		DEC	305.5	416.3	308.4	266.3	270.6	232.4	239.4	15.7	5.6	-26.6	128	174	129	111	113	97
AMP	[]	AMERIPRISE FINANCIAL, INC.	#	JAN	0.0	13,443.0	11,958.0	12,890.0	12,924.0	12,180.0	11,839.0	NA	NA	NA	0	114	101	109	109	103
BLK	[]	BLACKROCK, INC.		DEC	17,873.0	19,374.0	16,205.0	14,539.0	14,198.0	13,600.0	12,261.0	6.7	5.6	-7.7	146	158	132	119	116	111
ETN	[]	EATON CORPORATION PLC		DEC	20,752.0	19,628.0	17,858.0	21,390.0	21,609.0	20,404.0	19,747.0	2.4	0.3	5.7	105	99	90	108	109	103
FHI	†	FEDERATED HERMES, INC.		DEC	1,445.8	1,300.4	1,448.3	1,326.9	1,135.7	1,102.9	1,143.4	4.3	5.6	11.2	126	114	127	116	99	96
BEN	[]	FRANKLIN RESOURCES, INC.		SEP	8,275.3	8,425.5	5,566.5	5,669.4	6,204.5	6,392.2	6,618.0	1.5	5.3	-1.8	125	127	84	86	94	97
IVZ	[]	INVESCO LTD.		DEC	6,048.9	6,894.5	6,145.6	6,117.4	5,314.1	5,160.3	4,734.4	4.1	3.2	-12.3	128	146	130	129	112	109
JHG	†	JANUS HENDERSON GROUP PLC		DEC	2,203.6	2,767.0	2,298.6	2,192.4	2,306.4	1,818.3	1,018.2	15.2	3.9	-20.4	216	272	226	215	227	179
SEIC	†	SEI INVESTMENTS COMPANY		DEC	1,991.0	1,918.3	1,684.1	1,649.9	1,624.2	1,526.6	1,401.5	7.2	5.5	3.8	142	137	120	118	116	109
TROW	[]	T. ROWE PRICE GROUP, INC.		DEC	6,488.4	7,671.9	6,206.7	5,617.9	5,372.6	4,854.9	4,284.8	7.9	6.0	-15.4	151	179	145	131	125	113
VRTS	§	VIRTUS INVESTMENT PARTNERS, INC.		DEC	886.4	979.2	603.9	563.2	552.2	425.6	322.6	12.2	15.8	-9.5	275	304	187	175	171	132
WDR																					
CUSTODY BANKS																					
NTRS	[]	NORTHERN TRUST CORPORATION		DEC	6,749.2	6,546.0	5,975.8	6,087.6	5,974.7	5,403.3	5,006.7	5.7	4.5	3.1	135	131	119	122	119	108
STT	[]	STATE STREET CORPORATION		DEC	12,128.0	12,060.0	11,615.0	11,746.0	12,116.0	11,264.0	10,197.0	2.3	1.5	0.6	119	118	114	115	119	110
BK	[]	THE BANK OF NEW YORK MELLON CORPORATION		DEC	16,338.0	16,162.0	15,472.0	16,487.0	16,403.0	15,567.0	15,248.0	1.1	1.0	1.1	107	106	101	108	108	102
PRIVATE EQUITY																					
APO		APOLLO GLOBAL MANAGEMENT, INC.		DEC	10,844.0	5,812.5	2,220.8	2,833.5	1,033.7	2,718.9	2,030.1	14.4	31.9	86.6	534	286	109	140	51	134
KKR		KKR & CO. INC.		DEC	5,635.4	25,009.3	8,659.8	8,076.7	4,199.3	4,999.1	2,589.2	-5.3	2.4	-77.5	218	966	334	312	162	193
BX		BLACKSTONE INC.		DEC	8,015.9	22,175.8	6,188.9	7,058.6	5,997.0	6,947.5	4,993.6	7.3	2.9	-63.9	161	444	124	141	120	139
CG		THE CARLYLE GROUP INC.		DEC	4,438.7	8,782.1	2,934.6	3,377.0	2,427.2	3,676.2	2,274.3	4.1	3.8	-49.5	195	386	129	148	107	162

Note: Data as originally reported. CAGR-Compound annual growth rate.
[]Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.
Souce: S&P Capital IQ.

Net Income

Ticker		Company		Yr. End	Million $							CAGR (%)			Index Basis (2012=100)					
					2022	2021	2020	2019	2018	2017	2016	10-Yr.	5-Yr.	1-Yr.	2022	2021	2020	2019	2018	2017
ASSET MANAGEMENT AND CUSTODY BANKS																				
AMG	†	AFFILIATED MANAGERS GROUP, INC.		DEC	1145.9	565.7	202.2	15.7	243.6	689.5	472.8	20.7	10.7	102.6	242	120	43	3	52	146
AB		ALLIANCEBERNSTEIN HOLDING L.P.		DEC	274.2	385.8	279.4	238.6	242.4	207.4	216.6	18.3	5.7	-28.9	127	178	129	110	112	96
AMP	[]	AMERIPRISE FINANCIAL, INC.	#	JAN	0.0	2760.0	1534.0	1893.0	2098.0	1480.0	1313.0	NA	NA	NA	0	210	117	144	160	113
BLK	[]	BLACKROCK, INC.		DEC	5178.0	5901.0	4932.0	4476.0	4305.0	4952.0	3168.0	7.7	0.9	-12.3	163	186	156	141	136	156
FHI	†	FEDERATED HERMES, INC.		DEC	239.5	270.3	326.4	272.3	220.3	291.3	208.9	2.4	-3.8	-11.4	115	129	156	130	105	139
BEN	[]	FRANKLIN RESOURCES, INC.		SEP	1291.9	1831.2	798.9	1195.7	764.4	1696.7	1726.7	-3.9	-5.3	-29.5	75	106	46	69	44	98
IVZ	[]	INVESCO LTD.		DEC	920.7	1629.8	761.6	688.3	882.8	1127.3	854.2	3.1	-4.0	-43.5	108	191	89	81	103	132
JHG	†	JANUS HENDERSON GROUP PLC		DEC	372.4	622.1	161.6	427.6	523.8	655.5	189.0	13.4	-10.7	-40.1	197	329	86	226	277	347
SEIC	†	SEI INVESTMENTS COMPANY		DEC	475.5	546.6	447.3	501.4	505.9	404.4	333.8	8.7	3.3	-13.0	142	164	134	150	152	121
TROW	[]	T. ROWE PRICE GROUP, INC.		DEC	1557.9	3082.9	2372.7	2131.3	1837.5	1497.8	1215.0	5.8	0.8	-49.5	128	254	195	175	151	123
VRTS	§	VIRTUS INVESTMENT PARTNERS, INC.		DEC	117.5	208.1	80.0	95.6	75.5	37.0	48.5	12.1	26.0	-43.5	242	429	165	197	156	76
CUSTODY BANKS																				
NTRS	[]	NORTHERN TRUST CORPORATION		DEC	1336.0	1545.3	1209.3	1492.2	1556.4	1199.0	1032.5	6.9	2.2	-13.5	129	150	117	145	151	116
STT	[]	STATE STREET CORPORATION		DEC	2774.0	2693.0	2420.0	2242.0	2593.0	2156.0	2143.0	3.0	5.2	3.0	129	126	113	105	121	101
BK	[]	THE BANK OF NEW YORK MELLON CORPORATION		DEC	2573.0	3759.0	3617.0	4441.0	4266.0	4090.0	3547.0	0.5	-8.9	-31.6	73	106	102	125	120	115
PRIVATE EQUITY																				
APO		APOLLO GLOBAL MANAGEMENT, INC.		DEC	-3213.0	1838.5	156.6	843.2	-10.4	629.1	402.9	NA	NM	NM	-798	456	39	209	-3	156
KKR		KKR & CO. INC.		DEC	-841.1	4666.5	2002.5	2005.0	1131.1	1018.3	309.3	NA	NM	NM	-272	1509	647	648	366	329
BX		BLACKSTONE INC.		DEC	1747.6	5857.4	1045.4	2049.7	1541.8	1471.4	1039.0	23.1	3.5	-70.2	168	564	101	197	148	142
CG		THE CARLYLE GROUP INC.		DEC	1225.0	2974.7	348.2	380.9	116.5	244.1	6.4	50.7	38.1	-58.8	19141	46480	5441	5952	1820	3814

Note: Data as originally reported. CAGR-Compound annual growth rate.
[]Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.
Souce: S&P Capital IQ.

Ticker	Company	Yr. End	Return on Revenues (%) 2022	2021	2020	2019	2018	2017	Return on Assets (%) 2022	2021	2020	2019	2018	2017	Return on Equity (%) 2022	2021	2020	2019	2018	2017
ASSET MANAGEMENT AND CUSTODY BANKS																				
AMG	† AFFILIATED MANAGERS GROUP, INC.	DEC	49.2	23.4	10.0	0.7	10.2	29.9	12.9	6.4	2.6	0.2	3.0	7.9	30.8	21.3	10.2	6.5	10.3	19.2
AB	ALLIANCEBERNSTEIN HOLDING L.P.	DEC	89.7	92.7	90.6	89.6	89.6	89.3	13.2	23.8	17.4	15.3	16.3	13.4	14.8	23.9	17.7	15.7	16.0	13.5
AMP	[] AMERIPRISE FINANCIAL, INC. #	JAN	0.0	0.0	20.5	12.8	14.7	16.2	NA	NA	1.6	0.9	1.2	1.5	0.0	0.0	47.8	26.5	33.5	36.2
BLK	[] BLACKROCK, INC.	DEC	29.0	30.5	30.4	30.8	30.3	36.4	NA	3.9	2.8	2.7	2.7	2.2	13.0	16.2	14.6	13.2	13.1	16.2
FHI	† FEDERATED HERMES, INC.	DEC	16.6	20.8	22.5	20.5	19.4	26.4	11.9	13.4	15.8	14.5	14.3	23.7	20.5	21.3	25.6	24.2	24.3	41.6
BEN	[] FRANKLIN RESOURCES, INC.	SEP	15.6	21.7	14.4	21.1	12.3	26.5	4.6	7.6	3.7	8.2	5.3	9.7	10.0	17.3	6.9	10.7	5.7	13.0
IVZ	[] INVESCO LTD.	DEC	15.2	23.6	12.4	11.3	16.6	21.8	3.1	5.0	2.1	1.7	2.8	3.6	5.5	12.4	5.4	6.1	9.5	13.6
JHG	† JANUS HENDERSON GROUP PLC	DEC	16.9	22.5	7.0	19.5	22.7	36.1	6.0	9.2	2.4	5.6	7.6	9.0	5.8	12.7	3.5	8.4	9.9	19.0
SEIC	† SEI INVESTMENTS COMPANY	DEC	23.9	28.5	26.6	30.4	31.1	26.5	19.9	23.2	20.6	23.3	25.7	21.8	24.9	30.4	25.7	30.1	33.0	29.1
TROW	[] T. ROWE PRICE GROUP, INC.	DEC	24.0	40.2	38.2	37.9	34.2	30.9	13.4	24.6	22.3	22.8	23.9	19.9	14.5	31.7	28.9	29.8	25.9	25.3
VRTS	§ VIRTUS INVESTMENT PARTNERS, INC.	DEC	13.3	21.3	13.2	17.0	13.7	8.7	NA	5.3	2.3	3.0	2.6	1.4	11.2	29.0	15.1	14.5	11.6	8.2
CUSTODY BANKS																				
NTRS	[] NORTHERN TRUST CORPORATION	DEC	19.8	23.6	20.2	24.5	26.0	22.2	0.9	0.8	0.7	1.1	1.2	0.9	11.5	13.0	10.6	13.8	15.0	12.0
STT	[] STATE STREET CORPORATION	DEC	22.9	22.3	20.8	19.1	21.4	19.1	0.9	0.9	0.8	0.9	1.1	0.9	10.6	10.1	9.6	9.1	11.0	9.9
BK	[] THE BANK OF NEW YORK MELLON CORPORATION	DEC	15.7	23.3	23.4	26.9	26.0	26.3	0.6	0.8	0.8	1.2	1.2	1.1	6.1	8.4	8.3	10.8	10.3	10.1
PRIVATE EQUITY																				
APO	APOLLO GLOBAL MANAGEMENT, INC.	DEC	NM	31.6	7.1	29.8	NM	23.1	NM	6.0	0.7	9.9	NM	9.0	NM	46.7	10.0	56.0	0.7	60.6
KKR	KKR & CO. INC.	DEC	NM	18.7	23.1	24.8	26.9	20.4	NM	1.8	2.5	3.3	2.2	2.2	NM	24.9	14.4	16.6	10.6	13.6
BX	BLACKSTONE INC.	DEC	21.8	26.4	16.9	29.0	25.7	21.2	4.1	14.2	4.0	6.3	5.3	4.3	14.4	68.2	15.2	26.8	23.8	25.7
CG	THE CARLYLE GROUP INC.	DEC	27.6	33.9	11.9	11.3	4.8	6.6	5.7	14.0	2.2	2.8	0.9	2.0	20.5	70.5	13.0	40.8	11.4	45.8

Note: Data as originally reported. CAGR-Compound annual growth rate.
[]Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.
Souce: S&P Capital IQ.

Ticker		Company		Yr. End	Current Ratio						Debt/Capital Ratio (%)						Debt as a % of Net Working Capital					
					2022	2021	2020	2019	2018	2017	2022	2021	2020	2019	2018	2017	2022	2021	2020	2019	2018	2017
ASSET MANAGEMENT AND CUSTODY BANKS																						
AMG	†	AFFILIATED MANAGERS GROUP, INC.		DEC	0.0	2.6	3.9	2.4	2.2	1.7	2.1	1.7	1.8	2.1	2.0	3.4	173.4	286.9	201.6	291.1	284.6	466.5
AB		ALLIANCEBERNSTEIN HOLDING L.P.		DEC	0.0	0.0	0.0	0.0	0.0	0.0	2.6	2.5	2.4	2.4	2.2	2.1	NA	NA	NA	NA	NA	NA
AMP	[]	AMERIPRISE FINANCIAL, INC.	#	JAN	0.0	0.0	3.2	2.3	2.4	2.6	1.4	1.3	1.2	1.2	1.1	1.2	NA	NA	13.6	23.1	31.2	33.5
BLK	[]	BLACKROCK, INC.		DEC	0.0	1.7	1.4	1.3	1.3	1.3	2.7	1.9	1.8	2.1	5.0	1.5	NA	80.8	81.3	95.3	78.5	66.4
FHI	†	FEDERATED HERMES, INC.		DEC	2.5	2.1	2.2	2.0	1.7	3.4	4.6	11.0	7.9	9.5	6.9	7.1	88.3	77.4	24.2	43.4	109.8	55.1
BEN	[]	FRANKLIN RESOURCES, INC.		SEP	4.3	4.1	3.0	4.5	4.9	11.4	8.2	10.5	8.2	6.6	3.9	3.6	31.6	37.8	48.5	9.8	8.6	8.5
IVZ	[]	INVESCO LTD.		DEC	0.0	7.7	7.1	8.4	11.8	14.0	8.1	11.1	12.2	12.4	20.5	18.4	13.7	16.3	13.2	10.9	12.9	10.0
JHG	†	JANUS HENDERSON GROUP PLC		DEC	331.1	3.1	3.0	3.4	2.8	2.2	6.3	6.0	6.1	5.4	6.0	6.0	21.7	19.1	21.4	17.5	24.7	26.0
SEIC	†	SEI INVESTMENTS COMPANY		DEC	3.7	3.9	4.1	4.4	4.0	4.1	0.0	2.1	0.0	0.0	0.0	2.0	0.0	3.8	0.0	0.0	0.0	3.5
TROW	[]	T. ROWE PRICE GROUP, INC.		DEC	3.3	1.6	2.6	2.7	2.5	3.8	0.0	1.1	0.0	0.0	0.0	0.0	0.0	12.1	0.0	0.0	0.0	0.0
VRTS	§	VIRTUS INVESTMENT PARTNERS, INC.		DEC	0.0	2.7	2.7	3.0	2.5	2.5	0.0	21.4	19.4	27.0	31.9	29.0	NA	59.0	75.8	106.0	166.4	138.1
CUSTODY BANKS																						
NTRS	[]	NORTHERN TRUST CORPORATION		DEC	0.0	0.0	0.0	0.0	0.0	0.0	92.5	53.5	66.3	89.0	105.4	101.2	(16.6)	(8.9)	(12.9)	(18.0)	(20.4)	(19.6)
STT	[]	STATE STREET CORPORATION		DEC	0.0	0.0	0.0	0.0	0.0	0.0	45.5	60.9	102.9	85.0	89.3	73.5	(12.5)	(16.6)	(28.7)	(23.8)	(27.5)	(19.2)
BK	[]	THE BANK OF NEW YORK MELLON CORPORATION		DEC	0.0	0.0	0.0	0.0	0.0	0.0	92.9	95.1	93.2	94.5	96.3	100.3	(37.4)	(32.9)	(38.6)	(46.3)	(48.6)	(51.1)
PRIVATE EQUITY																						
APO		APOLLO GLOBAL MANAGEMENT, INC.		DEC	1.6	1.5	2.9	2.3	1.9	1.5	47.4	53.4	69.4	53.5	47.5	45.0	103.9	1517.8	722.1	285.8	433.8	505.7
KKR		KKR & CO. INC.		DEC	0.0	0.9	2.2	1.7	1.8	1.6	44.3	37.9	45.9	47.1	47.0	51.4	333.2	NM	680.5	1482.0	1124.0	969.8
BX		BLACKSTONE INC.		DEC	1.2	0.9	1.5	1.3	1.3	1.4	38.8	27.0	29.3	42.9	43.1	52.5	711.0	NM	277.0	749.5	863.2	746.3
CG		THE CARLYLE GROUP INC.		DEC	2.0	2.1	1.9	1.8	1.9	2.2	54.5	58.3	72.0	69.5	69.2	66.6	172.9	132.0	248.2	286.1	267.1	200.1

Note: Data as originally reported. CAGR-Compound annual growth rate.
[]Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.
Souce: S&P Capital IQ.

Ticker		Company		Yr. End	Price/Earnings Ratio (High-Low)					
					2022	2021	2020	2019	2018	2017
ASSET MANAGEMENT AND CUSTODY BANKS										
AMG	†	AFFILIATED MANAGERS GROUP, INC.		DEC	6 - 4	14 - 7	23 - 10	372 - 231	47 - 20	17 - 11
AB		ALLIANCEBERNSTEIN HOLDING L.P.		DEC	19 - 12	15 - 8	12 - 5	13 - 10	12 - 9	12 - 9
AMP	[]	AMERIPRISE FINANCIAL, INC.	#	JAN		9 - 4	14 - 10	13 - 7	13 - 8	12 - 8
BLK	[]	BLACKROCK, INC.		DEC	27 - 15	25 - 18	22 - 10	18 - 13	22 - 13	17 - 12
FHI	†	FEDERATED HERMES, INC.		DEC	15 - 11	14 - 10	12 - 4	13 - 9	17 - 10	13 - 9
BEN	[]	FRANKLIN RESOURCES, INC.		SEP	15 - 9	10 - 5	18 - 10	15 - 11	33 - 22	16 - 11
IVZ	[]	INVESCO LTD.		DEC	17 - 9	10 - 6	17 - 6	17 - 12	18 - 7	14 - 11
JHG	†	JANUS HENDERSON GROUP PLC		DEC	20 - 9	13 - 8	38 - 14	12 - 8	16 - 7	10 - 8
SEIC	†	SEI INVESTMENTS COMPANY		DEC	18 - 14	17 - 14	23 - 12	20 - 13	24 - 13	28 - 19
TROW	[]	T. ROWE PRICE GROUP, INC.		DEC	30 - 15	17 - 11	15 - 8	14 - 10	17 - 11	17 - 11
VRTS	§	VIRTUS INVESTMENT PARTNERS, INC.		DEC	19 - 9	12 - 8	20 - 5	10 - 6	15 - 8	31 - 24
CUSTODY BANKS										
NTRS	[]	NORTHERN TRUST CORPORATION		DEC	22 - 13	18 - 12	20 - 11	16 - 12	17 - 12	20 - 17
STT	[]	STATE STREET CORPORATION		DEC	14 - 8	14 - 10	13 - 7	15 - 9	17 - 9	19 - 14
BK	[]	THE BANK OF NEW YORK MELLON CORPORATION		DEC	22 - 13	14 - 10	13 - 7	12 - 9	14 - 11	15 - 12
PRIVATE EQUITY										
APO		APOLLO GLOBAL MANAGEMENT, INC.		DEC	NM - NM	11 - 6	122 - 54	13 - 6	NM - NM	11 - 6
KKR		KKR & CO. INC.		DEC	NM - NM	11 - 5	12 - 5	8 - 5	13 - 9	10 - 7
BX		BLACKSTONE INC.		DEC	58 - 31	18 - 8	44 - 24	19 - 10	17 - 12	16 - 12
CG		THE CARLYLE GROUP INC.		DEC	17 - 7	7 - 4	35 - 17	10 - 5	29 - 17	9 - 6

Ticker	Dividend Payout Ratio (%)						Dividend Yield (High-Low, %)					
	2022	2021	2020	2019	2018	2017	2022	2021	2020	2019	2018	2017
ASSET MANAGEMENT AND CUSTODY BANKS												
AMG	0.0	0.3	8.3	415.9	26.4	6.5	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	2.8 - 0.0	1.8 - 1.1	1.1 - 0.4
AB	131.7	92.6	97.0	93.3	115.8	97.6	11.8 - 7.4	12.1 - 5.5	8.1 - 5.1	17.3 - 7.1	10.2 - 7.4	8.9 - 6.9
AMP	0.0	0.0	18.5	32.4	26.6	24.1	2.2 - 1.4	2.2 - 1.5	4.7 - 2.1	3.4 - 2.3	3.7 - 1.8	2.7 - 1.9
BLK	0.0	43.2	45.8	46.8	45.7	33.6	2.8 - 2.6	3.7 - 1.8	2.4 - 1.7	4.4 - 2.0	3.5 - 2.7	3.3 - 1.9
FHI	0.0	39.1	63.7	40.1	48.5	34.8	3.0 - 2.7	3.8 - 2.8	4.0 - 3.0	8.3 - 2.9	4.4 - 3.0	4.9 - 2.7
BEN	45.1	30.6	66.7	43.4	65.0	26.0	5.5 - 3.5	5.0 - 3.0	5.8 - 3.1	7.1 - 3.5	4.0 - 2.7	2.9 - 1.8
IVZ	62.1	33.4	78.0	94.8	55.6	41.8	4.2 - 3.7	5.5 - 2.7	3.8 - 2.3	16.3 - 3.6	8.2 - 5.5	6.1 - 3.0
JHG	0.0	41.2	162.7	63.7	52.5	39.1	6.7 - 5.2	7.9 - 3.5	5.1 - 3.1	12.0 - 4.9	8.1 - 5.6	6.3 - 3.1
SEIC	0.0	19.3	23.2	20.1	18.6	22.0	1.5 - 1.3	1.7 - 1.2	1.4 - 1.1	1.9 - 1.0	1.5 - 1.0	1.2 - 0.8
TROW	0.0	32.5	35.6	34.4	37.8	37.6	4.4 - 3.7	4.9 - 2.1	2.7 - 1.9	4.2 - 2.2	3.3 - 2.5	3.0 - 1.9
VRTS	0.0	15.1	31.1	26.5	29.6	50.9	3.6 - 2.7	4.5 - 2.0	2.1 - 1.0	4.7 - 1.7	3.1 - 1.8	2.4 - 1.3
CUSTODY BANKS												
NTRS	0.0	40.5	52.1	38.6	29.0	33.9	3.5 - 3.0	3.9 - 2.1	3.2 - 2.2	4.5 - 2.5	3.3 - 2.2	2.5 - 1.5
STT	0.0	32.2	36.7	41.5	31.9	35.6	3.4 - 2.7	4.2 - 2.2	3.0 - 2.3	4.8 - 2.5	4.3 - 2.6	2.8 - 1.5
BK	0.0	35.2	35.8	29.0	28.6	26.3	3.5 - 2.9	4.0 - 2.1	3.1 - 2.3	4.5 - 2.4	3.0 - 2.1	2.5 - 1.6
PRIVATE EQUITY												
APO	0.0	30.1	374.3	56.0	NM	60.4	2.6 - 2.2	3.8 - 2.3	5.2 - 2.5	9.9 - 3.5	9.0 - 4.1	7.9 - 3.9
KKR	0.0	9.0	17.7	15.2	31.4	33.9	1.4 - 1.1	1.4 - 0.7	1.4 - 0.7	2.9 - 1.4	2.7 - 1.7	3.5 - 2.0
BX	0.0	0.0	126.2	0.0	106.1	193.2	5.6 - 4.3	5.0 - 1.6	4.0 - 1.5	6.8 - 3.1	9.8 - 3.6	8.9 - 4.1
CG	36.2	12.0	100.9	45.3	131.7	50.8	4.6 - 3.4	5.1 - 1.8	4.1 - 1.7	6.9 - 3.5	9.2 - 4.5	8.2 - 5.7

Note: Data as originally reported. CAGR-Compound annual growth rate.
[]Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.
Souce: S&P Capital IQ.

					Earnings per Share ($)						Tangible Book Value per Share ($)						Share Price (High-Low, $)					
Ticker		Company		Yr. End	2022	2021	2020	2019	2018	2017	2022	2021	2020	2019	2018	2017	2022	2021	2020	2019	2018	2017
ASSET MANAGEMENT AND CUSTODY BANKS																						
AMG	†	AFFILIATED MANAGERS GROUP, INC.		DEC	25.4	13.0	4.3	0.3	4.5	12.0	-34.5	-42.5	-21.1	-18.6	-9.3	-5.3	171.4 - 108.1	191.6 - 98.9	103.3 - 44.4	115.8 - 71.1	217.0 - 88.5	207.7 - 139.5
AB		ALLIANCEBERNSTEIN HOLDING L.P.		DEC	2.7	3.9	2.9	2.5	2.5	2.2	18.2	16.3	16.3	15.8	15.4	16.0	52.5 - 31.3	57.5 - 32.8	36.1 - 13.2	31.4 - 26.3	31.2 - 23.3	26.7 - 20.4
AMP	[]	AMERIPRISE FINANCIAL, INC.	#	JAN	0.0	0.0	23.0	12.2	13.9	14.2	0.0	0.0	28.1	33.2	30.2	41.0	339.4 - 220.0	312.1 - 185.7	198.2 - 80.0	169.7 - 102.8	183.9 - 95.7	173.6 - 110.6
BLK	[]	BLACKROCK, INC.		DEC	34.0	38.2	31.9	28.4	26.6	30.1	23.1	25.6	16.2	4.0	6.4	7.4	927.5 - 503.1	973.2 - 670.3	722.4 - 324.0	506.8 - 377.3	594.5 - 360.8	520.7 - 365.8
FHI	†	FEDERATED HERMES, INC.		DEC	2.7	2.8	3.2	2.7	2.2	2.9	-1.9	-1.7	-1.5	-1.8	-3.0	0.3	39.8 - 27.9	38.2 - 26.4	38.3 - 13.1	36.0 - 24.6	36.8 - 22.1	36.7 - 24.9
BEN	[]	FRANKLIN RESOURCES, INC.		SEP	2.5	3.6	1.6	2.4	1.4	3.0	1.2	4.1	1.4	13.8	14.6	18.7	36.5 - 20.2	38.3 - 24.0	27.6 - 14.9	35.8 - 25.6	46.0 - 27.3	47.7 - 39.4
IVZ	[]	INVESCO LTD.		DEC	1.5	3.0	1.1	1.3	2.1	2.8	-1.1	-10.0	-12.8	-13.3	-1.9	1.3	25.3 - 13.2	29.7 - 16.9	19.0 - 6.4	22.2 - 15.2	38.4 - 15.4	37.8 - 28.8
JHG	†	JANUS HENDERSON GROUP PLC		DEC	2.2	3.6	0.9	2.2	2.6	3.9	4.3	4.4	3.6	1.6	1.2	0.5	44.1 - 19.1	48.6 - 28.0	34.5 - 11.8	25.8 - 17.7	41.6 - 19.0	38.8 - 30.2
SEIC	†	SEI INVESTMENTS COMPANY		DEC	3.5	3.8	3.0	3.2	3.1	2.5	11.5	10.3	9.6	9.0	7.7	6.9	64.3 - 46.3	65.2 - 52.1	69.6 - 35.4	67.1 - 44.2	78.4 - 42.3	72.5 - 47.9
TROW	[]	T. ROWE PRICE GROUP, INC.		DEC	6.7	13.1	10.0	8.7	7.3	6.0	24.8	23.6	30.9	27.4	22.9	21.0	198.9 - 93.5	224.6 - 145.8	154.3 - 82.5	126.2 - 86.6	127.4 - 84.6	106.1 - 65.3
VRTS	§	VIRTUS INVESTMENT PARTNERS, INC.		DEC	15.5	26.0	10.0	11.7	8.9	4.0	-2.4	-1.4	18.5	-5.3	-15.7	0.8	302.9 - 141.8	338.8 - 200.9	218.5 - 55.4	126.6 - 70.0	138.0 - 70.0	126.6 - 97.6
CUSTODY BANKS																						
NTRS	[]	NORTHERN TRUST CORPORATION		DEC	6.1	7.1	5.5	6.6	6.6	4.9	46.5	41.6	40.3	42.9	40.3	37.9	135.2 - 76.2	126.7 - 88.2	109.9 - 60.7	110.5 - 81.8	115.6 - 76.0	101.5 - 81.9
STT	[]	STATE STREET CORPORATION		DEC	7.2	7.2	6.3	5.4	6.4	5.2	40.6	43.6	40.3	33.2	29.6	31.2	104.9 - 58.6	100.7 - 69.0	85.9 - 42.1	81.2 - 48.6	114.3 - 57.9	100.9 - 74.5
BK	[]	THE BANK OF NEW YORK MELLON CORPORATION		DEC	2.9	4.1	3.8	4.5	4.0	3.7	20.8	19.4	21.3	17.6	15.5	15.0	64.6 - 36.2	60.5 - 39.5	51.6 - 26.4	54.3 - 40.5	59.0 - 43.7	55.4 - 43.9
PRIVATE EQUITY																						
APO		APOLLO GLOBAL MANAGEMENT, INC.		DEC	(5.6)	7.3	0.4	3.7	(0.3)	3.1	-6.9	12.5	3.2	5.3	3.5	5.6	74.4 - 45.6	81.1 - 45.4	55.4 - 19.5	48.8 - 23.8	37.4 - 22.6	34.0 - 19.4
KKR		KKR & CO. INC.		DEC	(1.2)	7.3	3.4	3.5	2.1	2.0	19.3	23.8	21.0	18.3	15.1	13.4	75.2 - 41.8	83.9 - 37.5	40.7 - 15.6	30.2 - 18.6	28.7 - 18.3	21.4 - 15.5
BX		BLACKSTONE INC.		DEC	2.4	8.1	1.5	3.0	2.3	2.2	7.8	10.3	6.4	7.1	6.0	6.6	138.9 - 71.7	149.8 - 61.3	65.8 - 33.0	56.7 - 28.5	40.6 - 26.9	35.1 - 27.4
CG		THE CARLYLE GROUP INC.		DEC	3.4	8.2	1.0	2.8	0.8	2.4	14.7	14.8	7.5	4.7	4.8	5.9	56.0 - 24.6	60.6 - 30.4	35.0 - 15.2	32.5 - 15.5	25.9 - 15.1	24.9 - 15.2

Note: Data as originally reported. CAGR-Compound annual growth rate.
[]Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.
Souce: S&P Capital IQ.

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