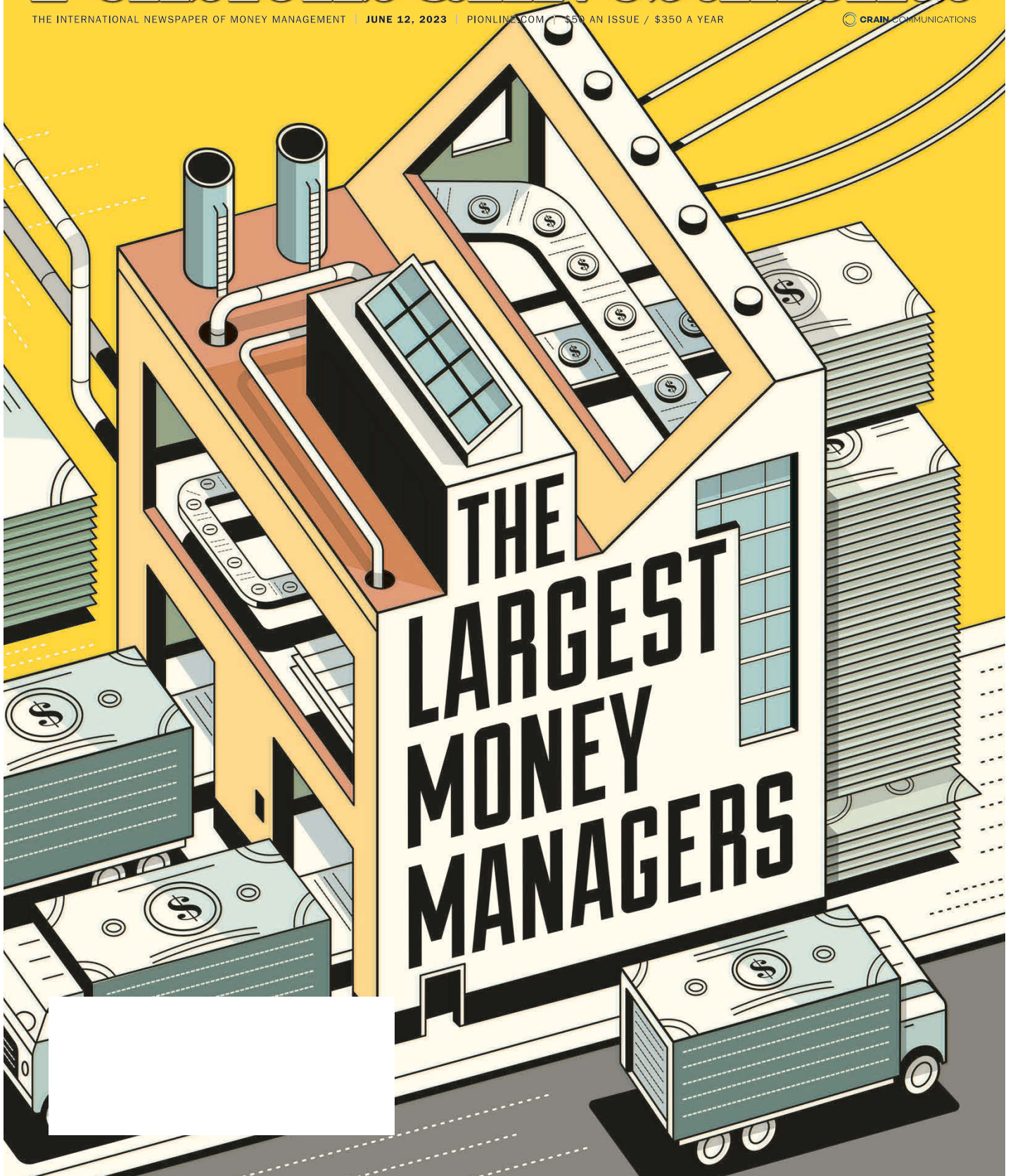


Pensions & Investments

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CRAIN COMMUNICATIONS

THE LARGEST MONEY MANAGERS

Private assets cushion managers' public pain

Managers lacking alts exposure found little place to hide in 2022 as traditional assets plunged

By Douglas Appell

The global feast money managers enjoyed in 2021 turned to famine last year as inflation spiked and central banks tightened, with private markets firms the lone players to emerge unscathed.

According to *Pensions & Investments'* latest annual survey of the largest money managers, worldwide institutional assets overseen by 434 managers around the globe plunged 15.6% to \$50.37 trillion in 2022, more than offsetting the prior year's 6.3% gain.

U.S. institutional tax-exempt assets fared marginally better, dropping 15.3% to \$19.07 trillion, while the broadest measure of money manager scale — total worldwide assets — did worse, declining 16.6% to \$77.45 trillion.

Last year's abrupt shift from extraordinary monetary policy stimulus to a rate hiking pace unseen in decades sent equity and bond prices reeling, betraying investors' hopes that a portfolio balanced between the two could rely on one to wax when the other waned.

Unsurprisingly for a year where the S&P 500 dropped 18% and the Bloomberg U.S. Aggregate Bond index fell 13%, managers reported painful declines in assets under management for both capital markets pillars — with higher-margin active assets dropping more than passive.

Over 2022, money managers' active U.S. equity assets managed internally for U.S. institutional tax-exempt investors plunged 23.4% to \$2.38 trillion, while passive assets fell by just under half that pace, dropping 11.3% to

The largest money managers

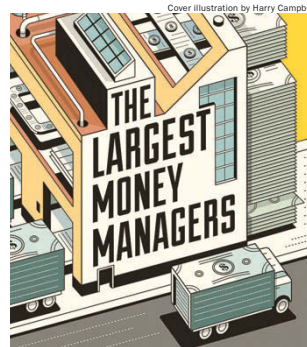
Vanguard overtook BlackRock for the first time in 2022. Managers are ranked by total worldwide institutional assets under management, in millions, as of Dec. 31.

Rank	Manager	Assets
1	Vanguard Group	\$5,024,824
2	BlackRock	\$4,834,449
3	State Street Global	\$2,414,580
4	Fidelity Investments	\$1,731,599
5	BNY Mellon	\$1,447,404
6	Goldman Sachs Group	\$1,441,249
7	J.P. Morgan Asset & Wealth	\$1,411,863
8	Legal & General Investment	\$1,376,967
9	Wellington Mgmt.	\$1,147,946
10	Amundi	\$1,119,793

\$4.14 trillion. Active U.S. fixed income meanwhile, declined 14.4% to \$3.26 trillion, while passive dropped 10.7% to \$949 billion.

The volatility did little to alter the latest rankings. BlackRock Inc. remained king of the hill with total worldwide assets of \$8.59 trillion, down 14.1% on year, followed by Vanguard Group Inc., off 14.3% to \$7.25 trillion; Fidelity Investments, down 13.7% to \$3.66

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What's in the 2023 managers report

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- ▶ Private markets rise continues, but write-downs coming. **Page 3**
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- ▶ To see the entire report, go to pionline.com/managers2023

THE LARGEST MONEY MANAGERS BONDS

Bond managers see resurgent interest after being rocked

By Rob Kozlowski

Most institutional fixed-income money managers reported double-digit losses in assets under management for the year ended Dec. 31, but executives say the pain was worth it to bring back income, yield and investor enthusiasm for their asset class.

There was considerable pain in 2022. Within overall U.S. tax-exempt institutional assets under internal management, active U.S. fixed income AUM topped 14.4% last year to \$3.26 trillion from \$3.81 trillion a year earlier.

The drop in AUM was hardly a surprise. For the year ended Dec. 31, the Bloomberg U.S. Aggregate Bond index lost 13%, in the midst of an equity market downturn along with a historically accelerated rise in interest rates.

After well over a decade of near-zero rates, the Federal Reserve took aggressive steps to turn the tide of inflation in 2022 by raising the federal funds rate an extraordinary seven times during the course of the calendar year — steps that ultimately raised the rate to a range of 4.25% to 4.5% at the end of the year from 0.25% to 0.5% at the beginning of the year.

The Federal Open Market Committee has since raised rates by 25 basis points each three times, to the current rate of 5% to 5.25%.

SEE BONDS ON PAGE 48

Money Management

BNY Mellon CEO works to bolster firm's affiliates

Hanneke Smits doesn't play favorites with the 7 boutiques

By SOPHIE BAKER

Each of the seven investment affiliates under parent company BNY Mellon Investment Management, of which Hanneke Smits is CEO, holds its own special place in the firm.

"Well, it's a bit like children: No favorites," she said in an interview at the firm's London office.

While she doesn't have a favorite, she has spent more time on some of the affiliate managers than others over her three years as CEO, in part due to changes initiated early on in her leadership.

Ms. Smits took on the role as CEO of the money manager on Oct. 1, 2020, and in that time has seen the firm through the shuffling of teams among the affiliates, the COVID-19

SEE SMITS ON PAGE 57



BUSY: Hanneke Smits has so far steered the firm through team changes, COVID-19 and the U.K. gilts crisis.

RELATED CONTENT
Face to Face with Hanneke Smits, see **Page 56**

Washington

SEC stock buyback rule fuels fight over disclosure mandate

By BRIAN CROCE

Depending on one's viewpoint, a new Securities and Exchange Commission rule requiring enhanced public company stock buyback disclosures is either a sensible move to provide added transparency for investors, or a threat to a crucial corporate tool.

"It seems that the SEC's rule is part of a broader strategy in DC from a certain perspective, more of the anti-business perspective, that stock buybacks are somehow insidious or carry with them negative

consequences, when in reality they're good for the economy and good for the marketplace," said Evan Williams, Washington-based senior director of the U.S. Chamber of Commerce's Center for Capital Markets Competitiveness.

The Council of Institutional Investors backed the proposed version of the rule in a comment letter last year and said it was in favor of added buyback disclosures.

"We believe such enhancements could strengthen the market's ability to assign premia to companies

SEE BUYBACK ON PAGE 56

SOUND BITE

CBRE'S JULIE INGERSOLL, on taking a market-leading write-down in Q4 on some properties: "We thought it was prudent to recognize the new normal." **Page 3**



BlackRock now paying for security

BlackRock is paying for personal and home security for Larry Fink and Rob Kapito over safety concerns. **Page 2**

THE LARGEST MONEY MANAGERS

Vanguard takes institutional lead over BlackRock

Firm moves to first for worldwide institutional; BlackRock tops all AUM

Erin Arvedlund

In the world's largest Wall Street derby, Vanguard Group Inc. for the first time won the institutional asset management race by a nose in 2022, beating out BlackRock Inc. for most institutional assets under management worldwide.

Vanguard ended 2022 with \$5.02 trillion in institutional assets globally, down 7.1% from \$5.41 trillion in 2021, while BlackRock ended 2022 with \$4.83 trillion in institutional assets, down 15.1% from \$5.69 trillion in 2021. State Street Global Advisors followed at a distant No. 3 with \$2.41 trillion and Fidelity Investments at No. 4 with \$1.73 trillion.

BlackRock remained the largest firm overall, with \$8.59 trillion in total assets globally vs. Vanguard's \$7.25 trillion, and has a much larger presence with clients such as government-sponsored retirement plans and sovereign wealth funds.

Vanguard has been on a strong trajectory for years to eventually overtake BlackRock in worldwide institutional assets. And the winner's circle has changed over time. In 2007, Fidelity held the No. 1 spot with \$1 trillion in institutional assets globally.

Now, however, BlackRock and Vanguard are "in a league of their own," said Eric Balchunas, a senior analyst with Bloomberg Intelligence, based in Philadelphia. "It's King Kong vs. Godzilla."

BlackRock does more business with asset owner institutions such as sovereign wealth funds and defined benefit funds, he said, while Vanguard draws more U.S. defined contribution retirement plan assets into its passive strategies and mutual funds.

BlackRock's institutional assets grew 24.5% over the past five years, while Vanguard's grew 62%. The rivals will likely continue to each gain market share and trade the top spot for years to come, Mr. Balchunas added.

"They'll be going after one another," he said, "until the government goes after them." Regulators

SEE VANGUARD ON PAGE 58



SIGNPOST: WTW's Peter Rogers said while the public market 'generally overshoots,' it is a good indicator of where private real estate values are heading.

THE LARGEST MONEY MANAGERS ALTERNATIVES

Private markets continue increase in AUM, but write-downs are coming

Reporting lag fostering dispersion in public, private asset valuations

By Arleen Jacobius

Most private market asset classes have yet to fully bake in lower asset values, resulting in tantalizing growth in their assets under management in 2022, a year when public market AUM fell across the board.

According to the results of *Pensions & Investments'* latest money manager survey, most every

The data

Data on alts managers begin on page 41.

private market asset class except hedge funds rose in the year ended Dec. 31 for U.S. institutional tax-exempt assets. Some of the largest increases included infrastructure, up 29.1% to \$62.6 billion, distressed debt up 26% to \$18.8 billion, privately placed debt up 20.8% to \$138.2 billion and buyouts up 20.6% to \$28.5 billion.

Hedge funds' net assets fell 18.9% to \$58.8 billion in 2022 while timber dipped 4.6% to \$8.2 billion.

SEE ALTS ON PAGE 49

Money Management

Putnam deal adds \$133 billion to Franklin Templeton AUM, cements partnership

By DOUGLAS APPELL

Franklin Templeton will acquire Putnam Investments from Great-West Lifeco for between \$950 million and \$1 billion in stock and cash, with future contingent payouts of up to \$375 million, Franklin and Great-West announced May 31.

The deal will cement a strategic partnership between Franklin and

Great-West Lifeco. The Canadian financial services giant agreed to retain a 4.9% stake in Franklin for at least five years from the deal's expected close in the fourth quarter, as well as allocate \$25 billion in long-term assets to Franklin Templeton's money management affiliates over a 12-month period.

Analysts said the deal reflects the growing competition money

managers focused on actively managed stocks and bonds are facing now from low-cost passive strategies and higher margin private markets strategies.

Active management, a focus for both Franklin and Putnam, "is not dead, but its share of the accessible pool of assets (is) bound to decrease ... squeezed between alternatives on the one hand and passive on the

other," said Richard Bruyere, managing partner of Indefi, a strategic adviser to the global asset management industry.

Consolidation, with the object of boosting scale to achieve efficiencies, looks set to continue, noted R. Bruce Cameron, a partner and co-founder of Berkshire Global Advisors, an investment bank focused on the global asset management in-

dustry. Even for "great old names" such as Putnam and Franklin, that's the direction things are moving in as large players, with few exceptions, struggle now to garner new assets, Mr. Cameron said.

Great-West's disposal of Putnam is likely a bittersweet move for the Montreal-based firm, which bought the pillar of Boston's money

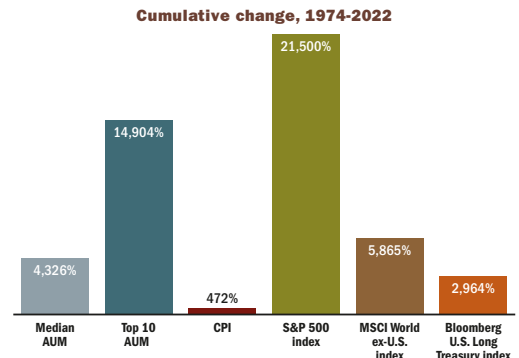
SEE PUTNAM ON PAGE 55

A half-century of asset growth

The largest managers have changed quite a bit since *Pensions & Investments'* inaugural money manager survey was published at the end of 1974. Moreover, since that first report, U.S. tax-exempt institutional assets under management have grown exponentially. While many managers have dropped off the list or no longer exist, it's worth noting that today's third-largest manager, State Street Global Advisors, saw its AUM increase to \$1.19 trillion from \$250 million.

Comparing the largest managers: Tax-exempt U.S. institutional assets totaled \$125.2 billion for the 241 respondents in P&I's first survey, published Dec. 2, 1974. The 10 largest managers on the list had \$63.1 billion in AUM. A half-century later, U.S. institutional tax-exempt assets totaled \$19.07 trillion, and the largest 10 managers had \$9.47 trillion. The four largest firms — Vanguard, BlackRock, State Street and Fidelity — managed about 32% of U.S. institutional tax-exempt assets.

Outpacing inflation: Median manager AUM grew 4,326% between 1974 and 2022. Looking at the 10 largest money managers, assets increased at a faster clip — 14,904% — over the same period. During that span, the consumer price index rose by 472%.



Source: *Pensions & Investments* data

Compiled and designed by Larry Rothman and Gregg A. Runburg

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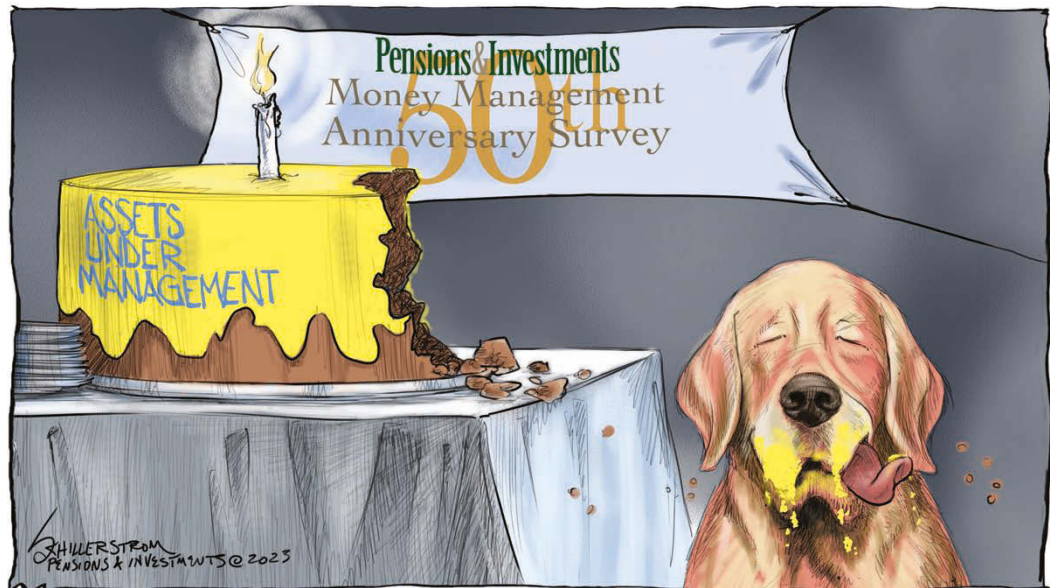
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OPINION



EDITORIAL

P&I marks milestone – and managers' pain

This year marks the 50th anniversary of *Pensions & Investments* collecting data from money managers, with a focus on institutional investing and, more specifically, U.S. institutional tax-exempt assets.

While a milestone for the *P&I* survey, this year's results painfully showed that many managers had little cause for celebration in 2022. Total assets under management at the 434 firms that participated dropped by more than \$15 trillion in a single year.

U.S. institutional tax-exempt assets fell by \$3.5 trillion in 2022 to \$19.07 trillion, down 15.3%. In 1974, the 241 managers in the inaugural survey managed a combined \$125 billion in U.S. institutional tax-exempt assets.

But it's more than the sheer size of the industry gains over the past 50 years (and how much can be lost in one down year); the ensuing decades have produced a complete reshaping of the names and strategies that dominate money management. The inaugural list is full of bank and trust companies, most of which haven't appeared in the pages of *P&I* for decades, at least under their original names. Consolidation and the rise of the megamanager has ushered in an industry where cost, scale, skill and breadth of strategies have created behemoths.

It wasn't until *P&I*'s second year, in 1975, that Vanguard Group opened its doors. Blackstone Inc. came around in 1985 before BlackRock Inc. was spun out in 1988. Passive investing, the rise of alternatives, mega deals (such as BlackRock acquiring Barclays Global Investors in 2009) and the emergence of 401(k) retirement plans, among other major developments, have grown the industry exponentially but also created a tier of managers so

large and dominant in certain markets that it's hard to believe they won't still be a force to contend with another 50 years from now. The majority of the 10 largest managers have significant passive investing businesses.

And predominantly active managers once again find themselves in an important stretch to prove their worth. Amid the continuation of COVID-19, rapidly rising interest rates and the highest inflation in 40 years, managers are now facing a predicted upcoming recession and what is sure to be a volatile 2024 U.S. presidential election. There could be considerable shakeout in the coming years.

On the bond side, as senior reporter Rob Kozlowski reported, investors and managers both have reasons to be excited about the asset class for the first time in years. Bond managers, or to be more specific, Los Angeles area-based bond managers, have proved to be the most resilient during *P&I*'s 50 years of producing this data, with Pacific Investment Management Co., Trust Co. of the West (TCW Group) and Western Asset Management Co. (now an affiliate of Franklin Templeton) still around today. Los Angeles-based equity and bond manager Capital Guardian Trust Co. (Capital Group Cos.) also appeared on the initial list.

On a closing note, one of the other few remaining managers from the initial group is Putnam Advisory Cos., with \$1.2 billion in U.S. institutional tax-exempt assets under management in 1974. Fifty years later, this will be Putnam Investments' last year as a stand-alone ranking after Franklin Templeton announced May 31 it was acquiring the Boston-based company. Putnam reported \$133 billion in worldwide AUM, including nearly \$30 billion in U.S. tax-exempt institutional assets.

LETTER TO THE EDITOR

Retired exec: Top 10 things that need to be addressed in institutional investment

Retiring after 45 years in the institutional investment business has allowed me the opportunity to step back and reexamine the industry from a different perspective. This resulted in my list of the top 10 things that need to be

addressed in the investment industry:

■ **Fee structures for asset managers:** If the stock market goes up an average of 8% per year, and an active manager regularly returns 7.5%, in what world should that asset

manager's revenue increase by 7.5% with no related increase in expense? Managers should only be rewarded for excess return over agreed-upon benchmarks. And the split of a success fee (or performance fee) should be fair — many are ridiculous (check out who owns the yachts). Managers should provide some assessment of value for money, as is required in the U.K.

■ **Asset managers as trusted advisers:** Love 'em, but they just aren't. Being in the OCIO
SEE CHANGES ON NEXT PAGE

The Largest Money Managers

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How P&I compiled the manager data

This issue marks the 50th year *Pensions & Investments* has profiled the largest managers of U.S. institutional tax-exempt assets.

Some 434 investment management firms responded to an online questionnaire for this annual special report, representing \$77.45 trillion in total assets under management and \$50.37 trillion in worldwide institutional AUM.

All money management firms are encouraged to respond to the survey. To qualify for inclusion in the database, however, the firm must manage assets for U.S. institutional tax-exempt clients, such as qualified retirement plans, endowments or foundations, and answer the minimum required questions.

The report contains detailed information on the worldwide assets under management of the qualified respondents, including asset mix, insurance company, sovereign wealth fund or central bank client assets, and a regional breakout of clients.

Within the U.S. institutional tax-exempt universe, *P&I* further breaks down the data into asset classes and then into investment style.

The year's survey has a few additions. There is now a breakout of exchange-traded fund assets managed for institutional clients, and cryptocurrency has been expanded to include all digital assets. The energy category has been split into "fossil fuel energy" and "renewable energy," and China equity and China debt have been added as a subset of emerging markets equity and debt.

All qualified firms are included for the charts and tables that are published, but only the largest 50 firms — ranked by worldwide institutional assets — are profiled in print.

Full profiles of all ranked money managers and complete listings by asset class and investment strategy can be found in the *P&I* Research Center. The online rankings are interactive and are searchable by asset class, investment strategy, region and clients.

Research Center access is free to plan executives. Money managers, consultants and other service providers have access by subscription.

P&I targeted more than 900 banks, trust companies, insurance companies and independent investment management firms in North

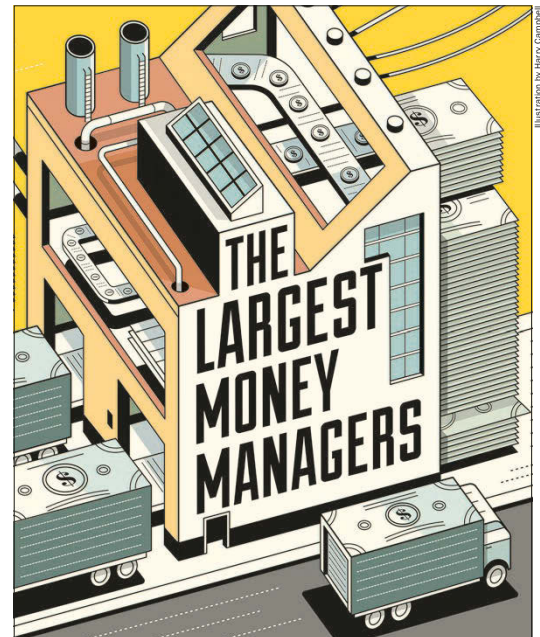


Illustration by Henry Campbell

America and abroad. The data contained in the stories, profiles, charts and tables in this issue and in the Research Center were developed by *P&I* staff from the firms' answers to the detailed, online questionnaire and through follow-up emails and phone calls.

All information, except where noted, is as of Dec. 31.

Special reports derived from this information will be published throughout the year. A special report focusing on managers of defined contribution assets will be highlighted in the next issue on June 26. More in-depth reports on investment outsourcing and real estate managers will appear in the July 17 and Oct. 9 issues, respectively. Data from this special report also will be used in a ranking of the largest managers in the world, completed in conjunction with Willis Towers Watson PLC's Thinking Ahead Institute, to be published Oct. 23.

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Money manager statistics at a glance

Assets are in millions as of Dec. 31.

	2022 data	One-year change	Five-year change
Managers profiled	434	-2.5%	-22.9%
Minority & women owned firms	50	-5.7%	-12.3%
Total employees worldwide	645,309	12.6%	3.2%
Total worldwide assets	\$77,449,027	-16.6%	14.6%
Top 100	\$72,500,938	-16.0%	19.2%
Central banks	\$447,383	-19.9%	-17.9%
Sovereign wealth funds	\$1,149,656	-13.3%	-4.2%
Non-affiliated insurance companies	\$4,054,776	-11.6%	6.3%
Investment outsourcing/fiduciary management mandates	\$2,017,761	-22.2%	35.3%
LDI strategies	\$2,859,124	-26.8%	-3.7%
Assets managed under ESG principles	\$19,870,289	-16.1%	198.1%
Hedge funds	\$492,484	-15.9%	-46.2%
Direct	\$362,453	-14.3%	-43.2%
Fund of funds	\$130,031	-20.1%	-53.2%
Mutual funds	\$27,248,351	-18.3%	2.0%
U.S. 1940 Investment Co. Act	\$20,343,026	-16.4%	7.5%
Internally managed proprietary 1940 Act funds	\$18,246,021	-12.1%	21.0%
Sponsored ETFs/ETNs	\$7,657,378	-10.5%	86.8%
Actively managed	\$241,268	39.8%	243.7%

	2022 data	One-year change	Five-year change
Worldwide institutional assets	\$90,368,642	-15.6%	11.8%
Top 100	\$46,593,007	-14.8%	16.7%
U.S. tax-exempt assets	\$24,060,482	-15.4%	14.5%
Top 100	\$22,679,950	-15.2%	19.1%
U.S. institutional tax-exempt assets	\$19,072,213	-15.3%	10.3%
Top 100	\$17,789,693	-15.0%	15.2%
U.S. institutional tax-exempt assets managed internally	\$17,170,959	-14.9%	11.3%
Top 100	\$16,122,722	-14.9%	15.8%
Active U.S. equity	\$2,381,578	-23.4%	-11.8%
Active U.S. fixed income	\$3,263,126	-14.4%	2.3%
Active non-U.S. equity	\$970,427	-22.7%	-28.1%
Active global/non-U.S. fixed income	\$229,269	-17.2%	-30.0%
Active global equity	\$392,963	-27.1%	-20.1%
Indexed assets	\$6,311,571	-13.3%	38.1%
Passive U.S. equity	\$4,143,664	-11.3%	55.2%
Passive U.S. fixed income	\$948,488	-10.7%	27.4%
Enhanced index U.S. equity	\$39,064	-47.6%	-59.5%
Enhanced index U.S. fixed income	\$81,120	-14.1%	2.8%
Passive non-U.S. equity	\$594,063	-19.0%	2.7%
Enhanced index non-U.S. equity	\$5,704	-43.7%	-72.3%

THE LARGEST MONEY MANAGERS ESG

Money managers diverge regionally on ESG approach

Increased politicization in U.S. doesn't translate to impact on mandates

By Hazel Bradford

While the increased politicization of ESG in the U.S. has some money managers revisiting their communications playbooks, the reality in terms of ESG assets under management is far less dramatic.

In fact, according to *Pensions & Investments* data as of Dec. 31, ESG assets fared slightly better than total worldwide assets under management, which dipped 16.6% to \$77.45 trillion from \$92.83 trillion in 2021. That compares with a 16% dip for assets managed under ESG principles, to \$19.87 trillion.

The contrast is starker over the past five years. While worldwide money manager AUM grew 14.6% over that period, those managed under ESG principles zoomed 198.1%. And for the 25 largest money managers of ESG mandates, the 2022 dip of less than 1% was barely a blip in terms of mandates that topped \$3 trillion for another year.

Some of those top 25 managers experienced dramatic growth last year in ESG mandates, while others saw single- and double-digit declines from 2021.

Despite being a popular target for ESG critics, BlackRock had 15.1% growth in ESG mandates that reached \$586.5 billion by the end of 2022. Private asset manager Pine-Bridge Investments LLC in New York also had a good year, with ESG mandates increasing 46.3% to \$26.9 billion. London-based Schroders PLC, where the broader ESG principles category dipped 14.6% to \$712 billion, the ESG mandates had a 511% increase to \$66 billion. Aviva Investors also saw a huge jump of 442% in mandates to total \$98 billion as of Dec. 31.

Assets managed under ESG principles increased nearly 90% to reach \$570.6 billion at New York Life Investments. The jump was mainly due to one boutique classifying assets as ones managed under ESG principles following changes made in 2022.

Longtime ESG proponent Legal & General Investment Management saw ESG assets and mandates increase 2.3% to reach \$401.3 billion, and 95% of its new product launches last year were ESG-related, said Laura Brown, head of client and sustainability solutions for LGIM in London. Driven by institutional investor interest, solutions to address climate change, biodiversity and other sustainable development goals "continue to grow in clients' portfolios," she said.

The data

Data on ESG managers begin on page 31.



Alistair Fyfe

GROWING PORTFOLIOS: Legal & General's Laura Brown said 95% of the firm's new strategies last year were ESG-related, driven by institutional investor interest.

Now, as institutional investors have gotten comfortable with ESG integration and metrics, "clients are looking to have real world impact," Ms. Brown said.

Morgan Stanley Investment Management had less pleasant news for assets under ESG principles, which declined 56.3% to \$211.2 billion in 2022, but ESG mandates were relatively better, declining 18.6% to reach \$39.6 billion. MSIM attributed the drop to a switch in 2022 to a more conservative category

with objective criteria, including binding ESG negative screening. BNP Paribas Asset Management saw its ESG mandates dip 22.7% to \$73.5 billion in 2022 while assets under ESG principles dropped 36.6% to \$328.3 billion.

A BNP Paribas spokesman said that some primary reasons for the decline were the outperformance last year of energy, aerospace and defense stocks, where ESG portfolios tend to be underweight, and a rally in value stocks, while many

ESG solutions providers tend to be more growth-oriented. "This is borne out by the underperformance of ESG indices relative to broader indices," he said.

"This year, as the U.S. moves towards a recession — a recession that we believe is necessary for inflation to revert to the Fed's 2% target — we would anticipate growth stocks to outperform value stocks. In a recession, growth is all the more desirable and, at least on a relative basis, growth-style stocks should be able to provide it," the spokesman said.

Mixed messages

Between recession fears and a rapidly approaching U.S. election season, 2023 could see even wider divergence between money manager operations in the U.S. and elsewhere, and plenty of mixed messages.

A biennial global asset management survey of investor sentiment released June 7 by Linedata, a global provider of asset management software, data and services, found some North American managers now deprioritizing ESG integration. While 33% of them considered it a high priority in 2021, only 22% did so in 2023. "North America was the biggest swing, and you can easily chalk it up to the political environment that is out there today," said Bob Moitosa, Holmdel, N.J.-based head of asset management, North America at Linedata.

By contrast, the global survey of 265 buy-side institutions including asset managers and wealth managers found that worldwide, more of them consider ESG a high priority, 40%, compared to 37% in 2021, "but it's only grown in one place — Europe," where it went to 63% from 41% two year ago, Mr. Moitosa said. For Asia-Pacific managers, ESG as a high priority dipped to 32% from

SEE ESG ON PAGE 48

	2022 data	One-year change	Five-year change
Passive global/non-U.S. fixed income	\$14,021	-34.5%	-42.6%
Passive global equity	\$485,447	-20.4%	35.8%
Non-U.S. assets*	\$1,813,484	-21.1%	-21.2%
Equity	\$1,570,194	-21.5%	-19.4%
Fixed income**	\$243,290	-18.5%	-30.9%
Global equity*	\$878,410	-23.5%	3.4%
REITs	\$129,720	-21.1%	34.5%
Low-volatility equity	\$53,837	-9.4%	-57.7%
High-yield securities	\$167,482	-11.9%	-12.9%
Mortgages (whole loans)	\$39,756	-0.9%	-45.5%
Bank loans	\$29,911	10.6%	-17.9%
Inflation-protected securities	\$118,972	-17.2%	-3.1%
Collateralized debt obligations	\$9,987	100.1%	360.0%
Stable value	\$441,818	-8.0%	-1.5%
Convertibles	\$13,015	26.3%	8.0%
Alternative investments:			
Real estate equity	\$482,690	11.4%	16.7%
Real estate debt	\$75,068	5.0%	—
Venture Capital	\$2,489	9.2%	-41.1%
Buyout funds	\$28,487	20.6%	4.8%

	2022 data	One-year change	Five-year change
Infrastructure	\$62,628	29.1%	131.1%
Private securities	\$184,054	17.1%	56.7%
Private equity	\$45,819	7.0%	35.7%
Privately placed debt	\$138,235	20.8%	65.1%
Timber	\$8,150	-4.6%	-40.8%
Energy	\$4,475	125.3%	31.1%
Fossil fuel	\$175	—	—
Renewable	\$4,300	—	—
MLPs	\$1,341	-25.9%	-83.5%
Direct lending	\$17,197	9.1%	—
Distressed debt	\$18,785	26.0%	77.4%
Mezzanine debt	\$8,115	7.9%	173.8%
Commodities	\$29,683	0.5%	-10.0%
Hedge funds (net assets)	\$58,795	-18.9%	-44.0%
Defined benefit plan assets managed internally	\$4,067,937	-18.1%	-10.3%
Defined contribution plan assets managed	\$8,425,455	-16.8%	19.1%
Defined contribution plan assets managed internally	\$7,525,023	-16.8%	22.0%
Endowment/foundation assets managed internally	\$700,460	-14.4%	7.1%

*Includes indexed assets. **Includes global assets. Historical data may include retroactive updates.

How to find the money manager data online

Full data profiles of all ranked money managers and complete listings by asset class and investment strategies can be found in *Pensions & Investments*' Research Center at pionline.com/researchcenter.

The online rankings are interactive and are searchable by asset class, investment strategy, region and clients, as well as by year.

Research Center access is free to plan executives. Money managers, consultants and other service providers have access by subscription. ■

The Largest Money Managers

THE LARGEST MONEY MANAGERS ETFs

Low-cost, active ETFs prove to be a bright spot

Despite rocky markets, some managers see assets increase in 2022

By Kathie O'Donnell

J.P. Morgan Asset Management, home to the industry's two biggest actively managed exchange-traded funds, achieved something unique last year among the 10 biggest managers sponsoring ETFs as ranked by *Pensions & Investments* by total worldwide assets: Asset growth.

JPMAM's ETF assets totaled \$97.5 billion as of Dec. 31, 2022, up nearly 25% from just over \$78 billion at the end of 2021.

The data

Data on ETF managers begin on page 28.

That growth came despite a tough year for both the equity and fixed-income markets. In 2022, the S&P 500 index returned -18.1% and the Bloomberg U.S. Aggregate Bond index lost 13%.

BlackRock Inc., the biggest ETF manager, had \$2.91 trillion in ETF assets as of Dec. 31, 2022, down about 11% from the end of 2021.

Despite JPMAM's success, its growth rate paled in comparison to that of some managers farther down P&I's list of the top 25 managers sponsoring exchange-traded funds/notes. Dimensional Fund Advisors, No. 11 on P&I's list, saw its total ETF assets grow by nearly 60% to \$72.2 billion last year, while No. 17 American Century Investments — whose Avantis Investors brand ETFs account for the lion's share of its total ETF assets — saw a 93% increase to \$19.1 billion.

The asset growth experienced by those three managers last year "showed there is a huge unmet demand for low-cost active," said Eric Balchunas, Philadelphia-based Bloomberg Intelligence senior ETF analyst, adding that those three managers have something in common: They offer active ETFs at expense ratios below 40 basis points.

"Once you get below 40, good things happen," the analyst said, adding that there's no mystery as to why active ETFs finally took off and that their trajectory is reminiscent of what occurred with both smart beta and environmental, social and governance ETFs. "It wasn't until they got low cost that they got successful."

Indeed, active ETFs were a bright spot for ETF managers last year. P&I's data showed, with seven of the top-10 managers sponsoring active ETFs showing asset growth.

Dimensional ranked as the biggest, with its \$72.2 billion of assets at the end of last year, JPMAM ranked second with \$63.5 billion, which marked an increase of nearly 61% from \$39.5 billion at the end of 2021.

The active ETFs of JPMAM, Dimensional and American Century have attracted a total of \$28 billion of net inflows this year through May 31, which represents 19% of the \$145 billion in total net cash that went into ETFs overall this year, including both active and pas-

Invesco tops list of institutional assets in sponsored ETFs

Invesco Ltd., the fourth-largest exchange-traded fund manager by assets, said institutions had \$52.4 billion invested in its ETFs at the end of last year, landing it the top spot in *Pensions & Investments*' first ranking of ETF managers based on institutional assets.

Charles Schwab Investment Management Inc., which does business as Schwab Asset Management, came in a distant second at \$11.7 billion, according to P&I data for managers of institutional assets in sponsored exchange-traded funds/notes by total worldwide assets.

Invesco's \$52.4 billion of institutional client investment in its ETFs accounted for nearly 77% of the \$68.1 billion in total assets reported by the 14 managers that responded to P&I's question regarding institutional clients, which was part of P&I's latest annual survey of the largest money managers. The three biggest ETF managers — BlackRock Inc., Vanguard Group and State Street Global Advisors — did not specifically disclose institutional assets.

"We expect growth and greater institutional interest in Invesco ETFs to continue," Emily Foote McKinley, New York-based head of institutional specialists for ETFs and indexed strategies at Invesco, said in written comments.

As for how Invesco's clients are using its ETFs, Ms. McKinley said Invesco is seeing institutions embrace both single-factor ETFs such as the Invesco S&P 500 Low Volatility ETF and the Invesco S&P 500 Quality ETF as portfolio tools and, increasingly, multifactor ETFs or factor rotation funds such as the Invesco S&P 500 QVM Multi-factor ETF and the Invesco Russell 1000 Dynamic Multifactor ETF to build a more efficient core for their portfolios.

Institutions that have utilized Invesco ETFs include the \$14.5 billion Municipal Employees' Retirement System of Michigan. According to



MORE INTEREST: Emily Foote McKinley said Invesco's clients use both single-factor and multifactor ETFs.

its 13F holdings report for the quarter ended March 31, Lansing-based MERS held three Invesco ETFs, including the Invesco S&P 500 QVM Multi-factor ETF. Collectively, its investments across those three ETFs totaled roughly \$1.3 billion. An Invesco spokeswoman said "several large state and municipal pensions" hold Invesco ETFs.

Ms. McKinley also cited Invesco QQQ, which had assets totaling \$191.5 billion as of June 1, as a fund institutional investors have used for decades. Invesco QQQ is an ETF that tracks the Nasdaq-100 index.

"Invesco QQQ is one of the largest and most traded ETFs in the U.S.," she said. "Institutional investors have used this fund for almost 25 years to express views on the market and efficiently trade risk."

Invesco continues to see interest in its products from additional institutions and

consequently is committing more personnel to the space, including new hires, Ms. McKinley said in her comments.

Asked about the new hires, the spokeswoman said Invesco this year has hired three ETF specialists focused on institutional investors, whom she declined to name.

Ms. McKinley herself joined Invesco in June 2022 in the newly created global position. She previously worked at BlackRock, where she had served as a senior product strategist for institutional client engagement. Ms. McKinley reports to Anna Paglia, global head of ETFs and indexed strategies at Invesco.

"Institutional interest in ETFs is quickly growing and we are restructuring our leadership to ensure we are united with the needs of this client segment," Ms. Paglia said in a 2022 news release regarding Ms. McKinley's hiring. "I am excited that Emily will be bringing her expertise and innovative thinking to our interactions with the institutional channel."

Schwab Asset Management has witnessed an increase in use of its bond ETFs by insurance companies after several of the funds were added recently to the "SVO-Identified Bond ETF List" maintained by the National Association of Insurance Commissioners, according to Eliot Bishop, senior portfolio strategist for Schwab Asset Management.

The funds now eligible to be reported as bonds are the Schwab 5-10 Year Corporate Bond ETF, the Schwab 1-5 Year Corporate Bond ETF, the Schwab U.S. Aggregate Bond ETF and the Schwab U.S. TIPS ETF, Mr. Bishop said in comments provided via a spokeswoman.

"Fixed income ETFs with (an) NAIC designation can be reported as bonds or preferred stock by insurers, which allows for more favorable risk-based capital treatment," Mr. Bishop explained.

— KATHIE O'DONNELL

sive ETFs, Mr. Balchunas said.

Jack Bogle, Vanguard Group Inc.'s late founder, "has certainly won the argument (that) costs matter," said Mr. Balchunas, author of a book called "The Bogle Effect." The analyst noted that Dimensional already has one active ETF that's below 10 basis points. The \$6.4 billion Dimensional U.S. Equity ETF has a

net expense ratio of 9 basis points, Dimensional's website shows.

"I think ultimately one day we're going to see a lot of the money in the 20 (basis points)-to-under bucket," Mr. Balchunas said. "So, this is just the beginning of a painful but necessary process of active (ETFs) getting with the program in terms of appealing to more

cost-conscious advisers."

Active sees increase

Global ETF industry assets overall totaled \$9.26 trillion at the end of 2022, down 9.8% from \$10.26 trillion at the end of 2021, according to London-based research and consultancy firm ETFGI LLP. By contrast, assets of actively managed ETFs listed globally increased by 10.6% during the same period, rising to \$488 billion the end of 2022 from \$441 billion at the end of 2021. In 2017, active ETF assets listed globally totaled just \$84 billion, according to ETFGI data.

JPMAM is home to the industry's two largest active ETFs, the \$26 billion JPMorgan Equity Premium Income ETF (JEPI) and the \$25 billion JPMorgan Ultra-Short Income ETF (JPST), according to Jed Laskowitz, New York-based CIO and global head of asset management solutions at J.P. Morgan Asset Management. JEPI has a net expense ratio of 35 basis points, while JPST's net expense ratio is 18 basis points, fund fact sheets show.

"We are experiencing increased demand for active ETFs for a variety of reasons — daily transparency, tax efficiency, ease of ETF trading, and our ability to achieve our risk and return objectives," Mr. Laskowitz

said in written comments provided to P&I. "Financial (advisers) also prefer investing in ETFs that are managed by the same investment teams that manage active separate accounts and mutual funds on behalf of their clients."

Trust and familiarity with the underlying investment teams are key factors for advisers when it comes to choosing an active ETF, Mr. Laskowitz said.

Dimensional's efforts

Founded in 1981, Austin, Texas-based Dimensional launched its first two ETFs in November 2020, slightly more than a year after the Securities and Exchange Commission's September 2019 adoption of the "ETF Rule." The rule streamlined regulations governing most ETFs and allows for greater flexibility in their day-to-day management, Dimensional said in a November 2020 article posted to its website.

Dimensional had been hearing from investors — including both financial advisers and institutions — that they wanted access to its systematic approach in an ETF wrapper, according to Anthony Caruso, Charlotte, N.C.-based co-head of product specialists and a

SEE ETFs ON PAGE 47

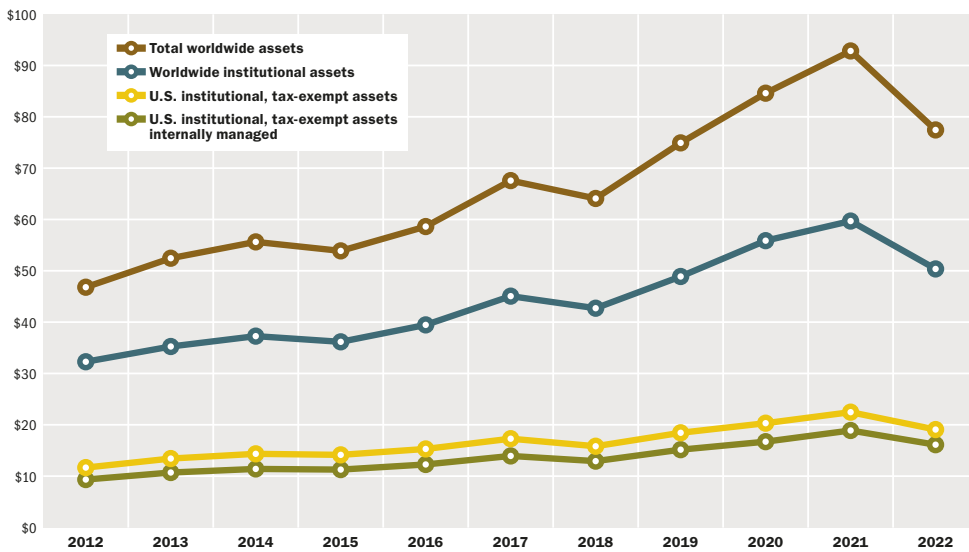


LOW COST: Bloomberg Intelligence's Eric Balchunas cited expense ratios below 40 basis points as a reason some active managers saw an increase in ETF assets.

The Largest Money Managers

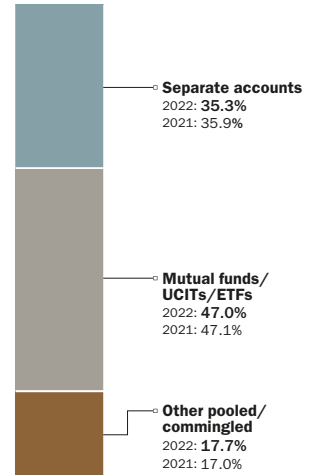
Growth of manager assets

Assets are in trillions as of Dec. 31.



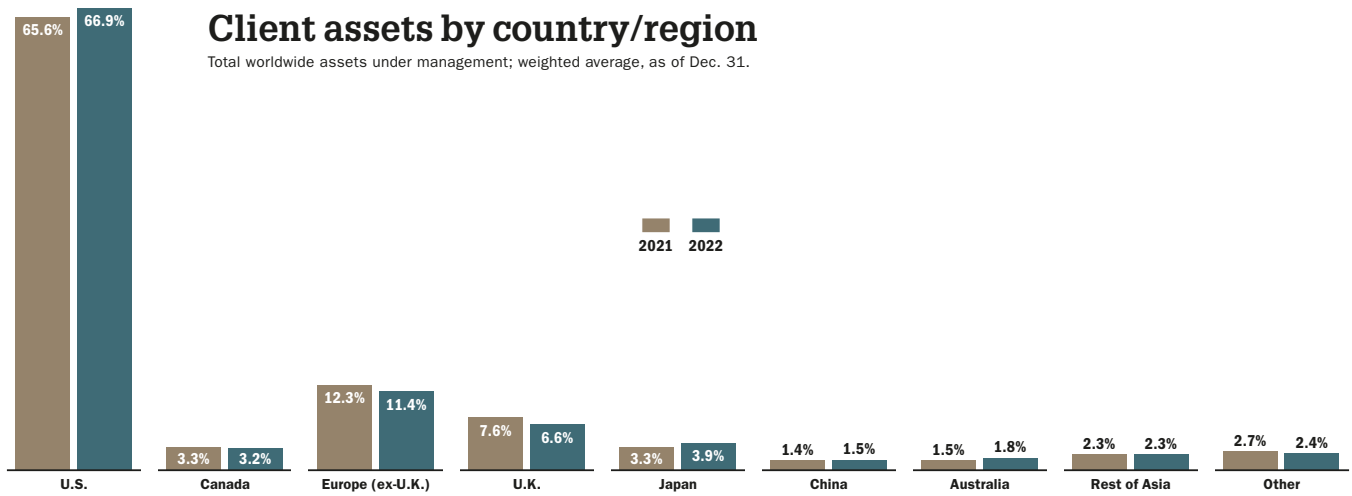
Investment vehicle mix

Total worldwide assets under management; weighted average, as of Dec. 31.



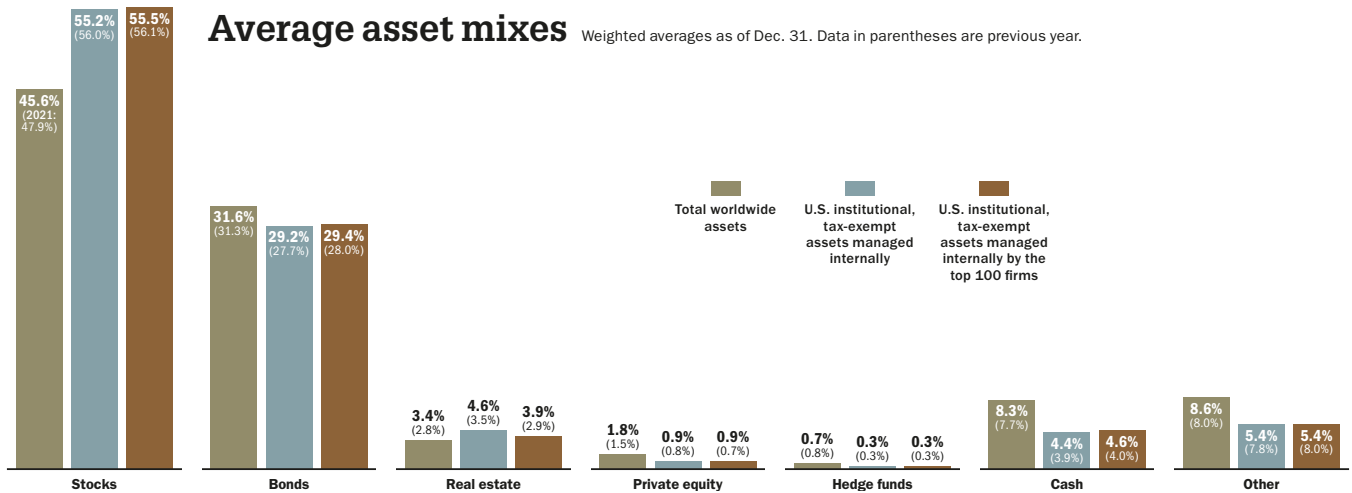
Client assets by country/region

Total worldwide assets under management; weighted average, as of Dec. 31.



Average asset mixes

Weighted averages as of Dec. 31. Data in parentheses are previous year.



The Largest Money Managers

The largest money managers

Ranked by total worldwide institutional assets under management, in millions, as of Dec. 31.

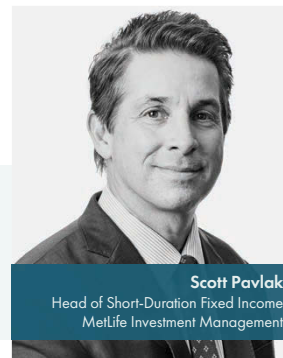
Rank	Prev. rank	Manager	Assets
1	2	Vanguard Group	\$5,024,824
2	1	BlackRock	\$4,834,449
3	3	State Street Global	\$2,414,580
4	4	Fidelity Investments	\$1,731,599
5	5	BNY Mellon	\$1,447,404
6	9	Goldman Sachs Group	\$1,441,249
7	7	J.P. Morgan Asset & Wealth	\$1,411,863
8	6	Legal & General Investment	\$1,376,967
9	8	Wellington Mgmt.	\$1,147,946
10	10	Amundi	\$1,119,793
11	11	Prudential Financial	\$1,021,084
12	14	Geode Capital Mgmt.	\$866,352
13	12	PIMCO	\$865,656
14	13	Northern Trust Asset Mgmt.	\$792,802
15	17	Nuveen	\$759,724
16	15	Capital Group	\$753,026
17	16	T. Rowe Price Associates	\$737,473
18	18	AXA Investment	\$726,093
19	26	Franklin Templeton	\$682,456
20	21	Federated Hermes	\$618,026
21	30	Invesco	\$606,715
22	19	Dimensional Fund Advisors	\$583,714
23	20	MetLife Investment Mgmt.	\$579,837
24	22	Morgan Stanley Investment Mgmt.	\$530,982
25	27	New York Life Investments	\$487,748
26	24	Schroders	\$460,088
27	23	Principal Global Investors	\$458,932
28	32	KKR	\$458,165
29	28	DWS	\$419,758
30	38	Macquarie Asset Mgmt.	\$398,691
31	45	Brookfield Asset Mgmt.	\$391,551
32	29	Allspring Global Investments	\$385,314
33	33	BNP Paribas Asset Mgmt.	\$377,839
34	34	Asset Management One	\$376,559
35	35	Mercer	\$337,941
36	39	Barings	\$303,519
37	31	Aegon Asset Mgmt.	\$302,171
38	41	AllianceBernstein	\$301,329
39	46	Neuberger Berman	\$297,897
40	52	Ares Mgmt.	\$296,014
41	43	Columbia Threadneedle	\$265,521
42	44	NISA Investment	\$259,207
43	50	Voya Investment Mgmt.	\$257,941
44	55	MassMutual	\$251,270
45	42	Aviva Investors	\$250,137
46	59	SEI Investments	\$240,732
47	48	Manulife Investment	\$235,473
48	51	SLC Management	\$231,401
49	49	Russell Investments	\$227,159
50	53	Loomis, Sayles	\$222,198
51	37	Baillie Gifford Overseas	\$216,005

Rank	Prev. rank	Manager	Assets
52	57	Dodge & Cox	\$198,574
53	54	TCW Group	\$188,621
54	56	MFS Investment	\$186,303
55	58	RBC Global Asset Mgmt.	\$182,925
56	67	Mesirow	\$173,388
57	60	Guggenheim Investments	\$171,157
58	68	Wilmington Trust	\$165,219
59	62	WTW Investment Services	\$163,007
60	63	Conning	\$162,097
61	102	Empower Investments	\$158,459
62	76	PFM Asset Mgmt.	\$153,598
63	73	CBRE Investment Mgmt.	\$148,800
64	69	TD Global	\$148,036
65	75	IFM Investors	\$141,767
66	70	Arrowstreet Capital	\$138,246
67	65	Nomura Asset Mgmt.	\$135,883
68	82	Oaktree Capital	\$133,055
69		Payden & Rygel	\$131,209
70	64	Lazard Asset Mgmt.	\$130,718
71	71	Victory Capital	\$126,477
72	66	Artisan Partners	\$122,308
73	72	PRIMECAP	\$117,232
74	81	Man Group	\$113,100
75	74	Robeco	\$112,955
76	77	Baird Advisors	\$111,339
77	88	Hamilton Lane	\$107,530
78	78	Ninety One	\$103,771
79	87	Partners Group	\$101,298
80	95	Starwood Capital	\$99,758
81	79	AQR Capital Mgmt.	\$94,834
82	80	Acadian Asset Mgmt.	\$93,629
83	90	Prologis	\$91,628
84	84	LSV Asset Mgmt.	\$91,100
85	98	StepStone Group	\$90,673
86	83	American Century	\$88,743
87	100	Charles Schwab Investment	\$88,030
88	89	RhumbLine Advisers	\$88,016
89	93	Pathway Capital	\$87,223
90	91	Boston Partners	\$86,987
91	96	Record Currency Mgmt.	\$85,998
92	94	Income Research & Mgmt.	\$85,111
93	97	AEW Capital	\$83,353
94	85	Pictet Asset Mgmt.	\$82,394
95	92	First Sentier Investors	\$78,203
96	105	Hines	\$77,538
97	99	New England Asset Mgmt.	\$72,867
98	112	Alan Biller and Associates	\$72,630
99	103	PPM America	\$71,479
100	109	LaSalle Investment	\$70,567
101	113	GCM Grosvenor	\$70,419
102	106	PineBridge Investments	\$69,295

Rank	Prev. rank	Manager	Assets
103	110	PNC Financial	\$67,651
104	108	CC&L Financial Group	\$66,252
105	107	Fort Washington	\$65,494
106	117	Dai-ichi Life Holdings	\$58,938
107	123	Oak Hill Advisors	\$57,000
108	104	William Blair	\$54,977
109	119	Putnam Investments	\$54,832
110	101	Ashmore Group	\$54,800
111	129	Heitman	\$53,108
112	137	Harrison Street	\$51,966
113	111	Grantham, Mayo v. Otterloo	\$51,666
114	130	PAG	\$50,000
115	118	Harris Associates	\$49,512
116	127	Adams Street Partners	\$48,235
117	121	Sterling Capital	\$47,599
118	133	GoldenTree Asset Mgmt.	\$47,343
119	124	Mondrian Investment	\$47,087
120	135	Angelo, Gordon	\$46,800
121	115	Nikko Asset Mgmt.	\$46,376
122	116	Harding Loevner	\$44,071
123		Brown Advisory	\$41,956
124	140	Portfolio Advisors	\$39,915
125	126	Fisher Investments	\$39,297
126	128	Cohen & Steers	\$38,837
127	122	Marathon-London	\$38,507
128	120	Harbor Capital Advisors	\$36,107
129	138	Aristotle Capital Mgmt.	\$34,213
130	131	SECOR Asset Mgmt.	\$33,867
131	162	Stockbridge Capital Group	\$32,995
132	136	PanAgora Asset Mgmt.	\$31,935
133	148	Pzena Investment	\$31,509
134	144	Causeway Capital	\$31,325
135	139	Colchester Global Investors	\$30,768
136	146	MissionSquare Investments	\$30,704
137	161	Hayfin Capital Mgmt.	\$30,612
138		ORIX USA	\$30,532
139	147	CIBC Asset Mgmt.	\$28,528
140	141	Los Angeles Capital	\$28,058
141	152	Shenkman Group	\$27,465
142	143	Jarislowsky Fraser	\$27,098
143	155	EARNEST Partners	\$26,237
144	157	Knights of Columbus Asset	\$25,566
145	159	Strategic Investment Group	\$25,366
146	156	Commonfund	\$25,310
147	169	Rockpoint Group	\$24,951
148	149	Hotchkis & Wiley	\$24,883
149	154	AAM	\$23,778
150	170	CIM Group*	\$23,506
151	164	Beutel, Goodman	\$23,193
152	160	Nomura Corporate Research	\$22,671
153	167	Scout Investments	\$22,413

CONTINUED ON PAGE 22

A FAVORABLE ENVIRONMENT FOR SHORT-DURATION FIXED INCOME



Scott Pavlak
Head of Short-Duration Fixed Income
MetLife Investment Management

While rising interest rates over the past year have been painful for most fixed-income sectors, all-in higher yields and the inversion of the yield curve have now made short-duration strategies an attractive area for institutional investors to explore, according to MetLife Investment Management.

Scott Pavlak, head of short-duration fixed income at MetLife Investment Management, defines short-duration portfolios as those whose average durations range from a half- to two-and-a-half years. In his view, now is an opportune time to invest in this space. His optimism is based on the belief that the Federal Reserve has neared the end of its current tightening cycle; front-end yields are at levels not seen since the Global Financial Crisis and unlikely to decline to the low levels that have prevailed for much of the post-GFC period; and the firm's research that shows a short-duration portfolio's income generation, more so than price return, will drive performance over a market cycle.

"We looked at the total returns of a simple one- to three-year Treasury index to analyze the composition of returns going back several decades," Pavlak said. "Price-only returns were negative over many five-year rolling cycles, but income-only returns were positive — so much so as to push overall returns consistently positive. It is why when constructing a portfolio, a core tenet of our investment philosophy is to continuously strive to have a 'yield advantage' compared to the various benchmark indices we manage against."

THE TIME IS RIGHT

MetLife Investment Management's institutional clients use short-duration strategies for a variety of objectives. According to Pavlak, these may include investing surplus operating funds, matching assets to liabilities, incorporating a portfolio as part of a stable-value investment program or making a defensive, tactical allocation within a broader investment strategy.

Regardless of the client's goals, we believe the short-duration environment is more appealing today than it has been in a long time. "As an active manager, structuring a high-quality, multi-sector, liquid portfolio with an average AA rating and an average yield of 5% to 6% is an opportunity that many institutions find compelling. As a result, the firm has seen inflows from existing clients and new mandates from others," Pavlak said.

ACROSS THE UNIVERSE

The universe of short-duration strategies is large — and it encompasses a wide variety of sector preferences, average portfolio durations and credit quality, according to Pavlak.

For example, some managers invest exclusively in U.S. government securities, while others allocate heavily to investment-grade credit or structured bonds, such as asset- and mortgage-backed securities. Still others may include allocations to less-liquid areas like emerging markets, high-yield and nondollar securities. Additionally, some managers completely hedge duration risk while others in the short-duration space have average portfolio durations that stretch to as much as four years.

The sheer breadth of the short-duration universe underscores the importance of knowing how managers generate

performance and understanding how they manage risk. "Depending on the market environment, there can be significant dispersion in manager performance. We believe it is important for entities allocating capital to an investment manager to lift the hood on a firm's resources and strategies to better understand not just what managers are doing to achieve their returns but also the risks they are taking in the process," Pavlak said.

MetLife Investment Management's short-duration team employs a joint top-down and bottom-up approach. "Top-down identifies investment themes that, in turn, help drive sector allocations and risk budgeting decisions. Then, working with the firm's global credit, structured and municipal research groups, the team utilizes a bottom-up security selection process to source best ideas to populate portfolios within each specific sub-sector," he said. Portfolios typically maintain an average credit quality of at least AA minus and are multi-sector in nature, with varying allocations based on the team's outlook as well as sector and security valuations.

In our view, investors should continue to earn attractive returns from their short-duration portfolios, despite potentially elevated interest rate and spread volatility.

DEFENSIVE STANCE, TACTICAL OPPORTUNITY

Pavlak sees an attractive return environment for short-duration strategies continuing for the foreseeable future. His team expects the Fed to hold the fed funds rate steady this year, which is contrary to the predictions of others.

"Our view is that we saw the peak in front-end interest rates — two-year to five-year yields — in early March of this year, and that the Fed will be biased to stay on the sidelines as the labor market remains resilient and inflation, although also having peaked, will be slow to decline to the Fed's target levels," Pavlak said. "From our perspective, even with a lower fed funds rate in 2024 and 2025, interest rates at the front end will remain higher than where they have been over the last decade. Putting all of it together means that, in our view, investors should continue to earn attractive returns from their short-duration portfolios, despite potentially elevated interest rate and spread volatility."

In anticipation of an economic slowdown that it expects to play out later this year, the MetLife Investment Management short-duration team has sought to position its portfolios more defensively. The prospect of a further contraction in the economy with continuing financial stress and potentially

wider credit spreads has the team emphasizing higher quality trades in their portfolios while reducing exposure to various cyclically exposed sub-sectors and securities.

As it relates to the current yield curve, Pavlak explained, "While we know at some point [it] will likely normalize, today with the inverted yield curve, we believe a manager has to balance the temptation to grab only the shortest-duration, highest-yielding securities against the prospect that if interest rates rally, in general, a longer-duration security with a lower yield may perform better. We like the idea of structuring portfolios that maintain a duration where investors can lock in near-the-top yields for an extended period of time."

IMPORTANCE OF MANAGER SELECTION

What should institutions look for when hiring a short-duration manager? Pavlak listed a number of attributes that are worth exploring.

There is no substitute for stability and experience, he said, adding, "We believe a seasoned team that has worked together for years and is familiar with managing portfolios through changing monetary and business cycles can give investors a degree of confidence as, in our view, they are able to validate how the team and its investment process have performed over longer and differing market cycles."

In addition, "we believe a team of dedicated short-duration sector specialists brings a laser-like focus to the front end of the fixed-income market and should be better attuned to its opportunities and risks — unlike generalist fixed-income teams that may manage across the entire maturity spectrum," Pavlak said. Experience in constructing portfolios that diversify risks, specifically across the multitude of short-duration sub-sectors, is also important, he noted. "Ultimately, of course, performance is where the rubber meets the road. If managers are properly resourced, can identify opportunities for alpha generation as well as address the inherent risks present at different points in the cycle, results should follow accordingly," he said.

Overall, Pavlak emphasized the importance of building and maintaining strong relationships with institutional clients, as well as having a global presence and access to a broad and deep resource base. "Our institutional clients place a high value on all of these characteristics," he concluded. "They understand the benefits of partnering with a manager who prioritizes communication, accessibility and whose time-tested investment process produces consistent results." ■

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The Largest Money Managers

The largest money managers

Ranked by total worldwide institutional assets under management, in millions, as of Dec. 31.

Rank	Prev. rank	Manager	Assets
154	166	Calamos Advisors	\$21,671
155		ACORE Capital	\$21,069
156	187	PCCP	\$20,645
157	163	Guardian Capital	\$20,572
158	165	DuPont Capital	\$20,144
159	173	Canyon Partners	\$19,902
160	150	Kayne Anderson Rudnick	\$19,740
161	176	Polen Capital	\$19,314
162		TA Realty	\$18,882
163	171	Sustainable Growth Advisors	\$18,163
164	132	MFG Asset Mgmt.	\$17,886
165	174	Unigestion	\$17,269
166		Intech	\$17,107
167	158	Eagle Capital	\$17,067
168	178	Garcia Hamilton	\$16,753
169	168	Sprucegrove Investment	\$16,748
170	181	Longfellow Investment	\$16,609
171		Axiom Investors	\$16,581
172	197	King Street Capital	\$16,500
173	153	Wasatch Global Investors	\$16,464
174	188	Boyd Watterson	\$16,184
175	172	Champlain Investment	\$15,793
176	206	Crestline Investors	\$15,610
177	180	Callan	\$15,421
178	213	Pacific Asset Mgmt.	\$15,141
179	185	Fuller & Thaler	\$15,115
180	175	Cantillon Capital Mgmt.	\$15,040
181	201	Jacobs Levy Equity	\$15,039
182	179	Brandes Investment	\$14,927
183	184	Fayez Sarofim	\$14,514
184	191	Sit Investment	\$14,121
185		Cliffwater	\$14,074
186	212	Intercontinental Real Estate	\$14,027
187	220	Walton Street Capital	\$13,974
188	217	Beacon Capital	\$13,947
189	221	Rockwood Capital	\$13,868
190	208	Breckinridge Capital	\$13,648
191	186	Beach Point Capital	\$13,548
192	195	Amalgamated Bank	\$13,439
193	226	American Realty Advisors	\$13,062
194	203	Abbott Capital	\$12,850
195	182	Eagle Asset Mgmt.	\$12,850
196	189	Westfield Capital	\$12,791
197	194	Driehaus Capital	\$12,672
198	198	CenterSquare Investment	\$12,540
199	204	Segall Bryant & Hamill	\$12,473
200	190	Polaris Capital	\$12,419
201	145	Grayscale Investments	\$11,700
202	192	GW&K Investment	\$11,571
203	214	CornerStone Partners	\$11,567
204	229	Westbrook Partners	\$11,480

Rank	Prev. rank	Manager	Assets
205		Bahl & Gaynor	\$11,462
206	225	Sage Advisory Services	\$11,460
207	205	Yousif Capital	\$11,061
208	216	Commerce Trust	\$11,038
209	236	Zacks Investment	\$10,929
210	200	Stone Harbor Investment	\$10,927
211	183	Brown Capital	\$10,530
212	227	Cooke & Bieler	\$10,216
213	238	L&B Realty	\$10,143
214	232	Jensen Investment	\$10,135
215	210	Burgundy Asset Mgmt.	\$9,988
216	223	Pugh Capital	\$9,930
217		Mill Creek Residential	\$9,900
218	218	Global Endowment Mgmt.	\$9,825
219	244	Ullico Investment	\$9,636
220	228	London Co.	\$9,625
221	222	GAMCO Investors	\$9,622
222	177	Matthews Asia	\$9,476
223		Capital Fund Mgmt.	\$9,429
224	248	Waterfall Asset Mgmt.	\$9,372
225	235	Westwood Global	\$9,297
226	215	Frontier Capital	\$9,292
227	231	Christian Brothers	\$9,160
228	224	Manning & Napier	\$9,042
229	237	Ariel Investments	\$9,017
230	249	Washington Capital	\$8,857
231	196	TimesSquare Capital	\$8,810
232	264	Ramirez Asset Mgmt.	\$8,572
233		Altrinsic Global Advisors	\$8,440
234	257	National Real Estate	\$8,340
235	240	Advent Capital	\$8,084
236	241	CS McKee	\$7,960
237	239	WEDGE Capital	\$7,958
238		Newfleet Asset Mgmt.	\$7,874
239	242	National Investment	\$7,864
240	230	TT International	\$7,808
241	266	Prima Capital Advisors	\$7,796
242	211	Alger	\$7,777
243	263	Silver Creek Capital	\$7,711
244	243	River Road Asset Mgmt.	\$7,665
245	254	Agincourt Capital	\$7,393
246	252	Diamond Hill Capital	\$7,225
247	245	AGF Investments	\$7,096
248	267	Sentinel Real Estate	\$7,087
249		Ceredex Value Advisors	\$6,995
250	296	CoreCommodity	\$6,682
251		LCM Partners	\$6,631
252	287	Madison Realty	\$6,609
253	256	Silvercrest Asset Mgmt.	\$6,600
254		White Oak Global Advisors	\$6,583
255	253	Luther King Capital	\$6,490

Rank	Prev. rank	Manager	Assets
256	277	Equus Capital	\$6,300
257	246	Hardman Johnston Global	\$6,078
258	261	AFL-CIO Housing Trust	\$6,025
259	271	Corbin Capital	\$5,765
260	260	City of London	\$5,738
261	273	Spider Mgmt.	\$5,722
262	280	M3 Capital	\$5,700
263	258	Davis Advisors	\$5,648
264	281	Torchlight Investors	\$5,600
265	255	Stephens Investment Mgmt. Group	\$5,573
266	262	Great Lakes Advisors	\$5,426
267	265	Congress Asset Mgmt.	\$5,396
268	285	Parnassus Investments	\$5,354
269	268	Dana Investment	\$5,332
270	251	Martingale Asset Mgmt.	\$5,325
271		Madison Investments	\$5,269
272	269	Richmond Capital	\$5,266
273	278	Camden Asset Mgmt.	\$5,246
274	305	400 Capital Mgmt.	\$5,222
275	272	Glenmede Investment	\$5,218
276	259	Lyrical Asset Mgmt.	\$5,081
277	286	Gramercy	\$4,970
278	274	D.F. Dent	\$4,900
279	298	Resource Mgmt.	\$4,803
280	303	DePrince, Race & Zollo	\$4,755
281	270	Fiduciary Mgmt./Milwaukee	\$4,717
282		Duff & Phelps	\$4,714
283	289	AFL-CIO Building Trust	\$4,643
284	275	Johnson Asset Mgmt.	\$4,636
285	291	LM Capital Group	\$4,607
286	318	Conestoga Capital	\$4,600
287	279	Sierra Investment	\$4,475
288	284	Baird Equity Asset Mgmt.	\$4,469
289	311	Forest Investment	\$4,411
290	306	Carmel Partners	\$4,397
291	294	Atalanta Sosnoff Capital	\$3,851
292	199	Jackson Square Partners	\$3,826
293	276	Peregrine Capital	\$3,810
294	304	Todd Asset Mgmt.	\$3,791
295	282	Hoisington Investment	\$3,764
296	316	GlobeFlex Capital	\$3,759
297	283	Kornitzer Capital	\$3,758
298	335	Patron Capital	\$3,579
299	288	Emerald Advisors	\$3,532
300	295	Mar Vista Investment	\$3,369
301	301	Stacey Braun Associates	\$3,366
302	314	Leading Edge Investment	\$3,319
303	302	Kennedy Capital	\$3,316
304	290	Security Capital Research	\$3,316
305	293	Riverbridge Partners	\$3,306
306	297	Cardinal Capital	\$3,295

The Largest Money Managers

Rank	Prev. rank	Manager	Assets
307	292	Granahan Investment	\$3,263
308	321	Dolan McEniry	\$3,259
309	325	Angel Oak Capital	\$3,243
310	337	Global Forest Partners	\$3,206
311	322	Channing Capital	\$3,159
312	309	ClariVest Asset Mgmt.	\$3,145
313	348	Twin Bridge Capital	\$3,145
314	317	Evanston Capital	\$3,124
315	310	Aristotle Capital Boston	\$3,030
316	324	Systematic Financial	\$2,996
317	315	Palisade Capital	\$2,968
318	347	Algert Global	\$2,930
319	323	Hillsdale Investment	\$2,865
320		Prime Group	\$2,800
321		3650 REIT	\$2,797
322	338	GTIS Partners	\$2,687
323	356	Bivium Capital	\$2,662
324	342	Molpus Woodlands Group	\$2,646
325	308	Winthrop Capital	\$2,641
326	313	Zevenbergen Capital	\$2,513
327	327	Dalton Investments	\$2,460
328	332	Hood River Capital	\$2,412
329	330	Trillium Asset Mgmt.	\$2,405
330	331	Bowen, Hanes	\$2,400
331	329	EAM Investors	\$2,368
332	346	Verger Capital	\$2,354
333	343	GIA Partners	\$2,267
334	312	Weatherbie Capital	\$2,210
335	319	Oberweis Asset Mgmt.	\$2,169
336	344	Zazove Associates	\$2,009
337	353	Wexford Capital	\$2,000
338	352	Timberland Investment Resources	\$1,976
339	333	Sawgrass Asset Mgmt.	\$1,969
340	345	SSI Investment	\$1,944
341	339	NewSouth Capital	\$1,925
342	334	Foundry Partners	\$1,886
343	340	Sound Shore Mgmt.	\$1,854
344	358	KBS	\$1,783
345		HS Management	\$1,781
346		Silvant Capital	\$1,692
347	379	Millstreet Capital	\$1,683
348	351	Redwood Investments	\$1,682
349		Genter Capital	\$1,632
350	350	Smith Group Asset Mgmt.	\$1,632
351	357	Sarofim Realty	\$1,594
352	365	Edgar Lomax	\$1,590
353	383	Covenant Capital Group	\$1,580
354	360	Heartland Advisors	\$1,533
355	349	Adelante Capital	\$1,465
356	341	Rice Hall James	\$1,463
357	363	Cramer Rosenthal McGlynn	\$1,416

Rank	Prev. rank	Manager	Assets
358	355	Quest Investment	\$1,400
359	362	Penn Capital	\$1,389
360	354	Ranger Investments	\$1,365
361	373	Associated Capital Group	\$1,347
362	366	Cornerstone Investment	\$1,333
363		Smith Affiliated Capital	\$1,263
364	370	Logan Capital	\$1,190
365	376	Wilbanks, Smith & Thomas	\$1,181
366	368	Orleans Capital	\$1,133
367	382	Thornburg Investment	\$1,133
368		Karpus Investment	\$1,061
369	369	StoneRidge PMG Advisors	\$1,026
370	374	Tributary Capital	\$1,025
371		Mairs & Power	\$995
372	359	Bridgeway Capital	\$993
373	372	Granite Investment	\$974
374	367	Ativo Capital Mgmt.	\$962
375		Nicholas Investment	\$945
376	387	Sasco Capital	\$866
377	389	CS Capital	\$847
378	381	TWIN Capital	\$766
379	388	CI Inverness	\$712
380	398	Miller/Howard Investments	\$697
381	396	Belle Haven Investments	\$690
382	384	Montag & Caldwell	\$682
383	378	Anchor Capital	\$668
384	385	Wedgewood Partners	\$657
385	392	Wright Investors' Service	\$628
386	391	Phocas Financial	\$625
387	397	TSCG Investors	\$622
388	386	Pier Capital	\$614
389	395	GLOBALT	\$591
390	402	Van Hulzen Asset Mgmt.	\$569
391		SKBA Capital Mgmt.	\$551
392	405	Domain Timber Advisors	\$519
393	407	Speece Thorson Capital	\$502
394	404	Redstone Advisors	\$483
395	409	Aristotle Credit Partners	\$480
396	411	TerraCotta Group	\$465
397	403	Farr, Miller & Washington	\$461
398	400	SouthernSun Asset Mgmt.	\$448
399	401	Gifford Fong Associates	\$438
400	410	Denali Advisors	\$410
401		KDP Asset Mgmt.	\$406
402	399	AMI Asset Mgmt.	\$384
403	418	Semper Capital	\$354
404		Renaissance Investment	\$332
405	412	ZWJ Investment Counsel	\$329
406	414	Campbell Newman Asset	\$309
407	380	Gateway Investment	\$287
408	416	SMH Capital Advisors	\$271

Rank	Prev. rank	Manager	Assets
409	417	Argent Capital	\$235
410	413	Chicago Capital	\$219
411	427	Osborne Partners	\$203
412	415	Oak Associates	\$201
413	408	Windham Capital	\$193
414	422	Bridge City	\$182
415	434	Strategy Asset Managers	\$177
416	419	Kingdon Capital	\$167
417	423	Glovista Investments	\$164
418	426	Winslow Asset Mgmt.	\$157
419	421	Hahn Capital	\$154
420	429	Affinity Investment Advisors	\$153
421	424	Teton Advisors	\$144
422	428	Abner, Herrman & Brock	\$138
423	431	NovaPoint Capital	\$137
424	425	Paradigm Capital	\$135
425	436	Flippin, Bruce & Porter	\$125
426	432	Kestrel Investment	\$77
427	430	Tom Johnson Investment	\$74
428	433	Argus Investors' Counsel	\$59
429	438	Branson, Fowlkes/Russell	\$41
430	439	Robinson Value Mgmt.	\$41
431	440	Chase Investment Counsel	\$30
432	441	Nicholas Co.	\$26
433	437	Cadinha	\$25
434		Pacific West Land	\$16
Total			\$50,368,642

*As of Sept. 30.

The Largest Money Managers

The largest managers listed alphabetically

Manager	Rank	Manager	Rank	Manager	Rank	Manager	Rank	Manager	Rank	Manager	Rank
3650 REIT	321	Burgundy Asset Mgmt.	215	Fayez Sarofim	183	Kingdon Capital	416	PanAgora Asset Mgmt.	132	SouthernSun Asset Mgmt.	398
400 Capital Mgmt.	274	Cadinha	433	Federated Hermes	20	KKR	28	Paradigm Capital	424	Speece Thorsen Capital	393
AAM	149	Calamos Advisors	154	Fidelity Investments	4	Knights of Columbus Asset	144	Parnassus Investments	268	Spider Mgmt.	261
Abbott Capital	194	Callan	177	Fiduciary Mgmt./Milwaukee	281	Kornitzer Capital	297	Partners Group	79	Sprucegrove Investment	169
Abner, Herrman & Brock	422	Camden Asset Mgmt.	273	First Sentier Investors	95	L&B Realty	213	Pathway Capital	89	SSI Investment	340
Acadian Asset Mgmt.	82	Campbell Newman Asset	406	Fisher Investments	125	LaSalle Investment	100	Patron Capital	298	Stacey Braun Associates	301
ACORE Capital	155	Cantillon Capital Mgmt.	180	Flippin, Bruce & Porter	425	Lazard Asset Mgmt.	70	Payden & Rygel	69	Starwood Capital	80
Adams Street Partners	116	Canyon Partners	159	Forest Investment	289	LCM Partners	251	PCCP	156	State Street Global	3
Adelante Capital	355	Capital Fund Mgmt.	223	Fort Washington	105	Leading Edge Investment	302	Penn Capital	359	Stephens Inv. Mgmt. Group	265
Advent Capital	235	Capital Group	16	Foundry Partners	342	Legal & General Investment	8	Peregrine Capital	293	StepStone Group	85
Aegon Asset Mgmt.	37	Cardinal Capital	306	Franklin Templeton	19	LM Capital Group	285	PFM Asset Mgmt.	62	Sterling Capital	117
AEW Capital	93	Carmel Partners	290	Frontier Capital	226	Logan Capital	364	Phocas Financial	386	Stockbridge Capital Group	131
Affinity Investment Advisors	420	Causeway Capital	134	Fuller & Thaler	179	Lodan Co.	220	Pictet Asset Mgmt.	94	Stone Harbor Investment	210
AFL-CIO Building Trust	283	CBRE Investment Mgmt.	63	GAMCO Investors	221	Longfellow Investment	170	Pier Capital	388	StoneRidge PMG Advisors	369
AFL-CIO Housing Trust	258	Cc&L Financial Group	104	Garcia Hamilton	168	Loomis, Sayles	50	PIMCO	13	Strategic Investment Group	145
AGF Investments	247	CenterSquare Investment	198	Gateway Investment	407	Los Angeles Capital	140	PineBridge Investments	102	Strategy Asset Managers	415
Agincourt Capital	245	Ceredex Value Advisors	249	GCM Grosvenor	101	LSV Asset Mgmt.	84	PNC Financial	103	Sustainable Growth Advisers	163
Alan Biller and Associates	98	Champlain Investment	175	Genter Capital	349	Luther King Capital	255	Polaris Capital	200	Systematic Financial	316
Alger	242	Channing Capital	311	Geode Capital Mgmt.	12	Lycral Asset Mgmt.	276	Polen Capital	161	T. Rowe Price Associates	17
Algert Global	318	Charles Schwab Investment	87	GIA Partners	333	M3 Capital	262	Portfolio Advisors	124	TA Realty	162
AllianceBernstein	38	Chase Investment Counsel	431	Gifford Fong Associates	399	Macquarie Asset Mgmt.	30	PPM America	99	TCW Group	53
Allspring Global Investments	32	Chicago Capital	410	Glenmede Investment	275	Madison Investments	271	Prima Capital Advisors	241	TD Global	64
Altrinsic Global Advisors	233	Christian Brothers	227	Global Endowment Mgmt.	218	Madison Realty	252	Prime Group	320	TerraCotta Group	396
Amalgamated Bank	192	CI Inverness	379	Global Forest Partners	310	Mairs & Power	371	PRIMECAP	73	Teton Advisors	421
American Century	86	CIBC Asset Mgmt.	139	GLOBALT	389	Man Group	74	Principal Global Investors	27	Thornburg Investment	367
American Realty Advisors	193	CIM Group*	150	GlobeFlex Capital	296	Manning & Napier	228	Prologis	83	Timberland Inv. Resources	338
AMI Asset Mgmt.	402	City of London	260	Glovista Investments	417	Manulife Investment	47	Prudential Financial	11	Trident Capital	231
Amundi	10	Clarivest Asset Mgmt.	312	GoldenTree Asset Mgmt.	118	Mar Vista Investment	300	Pugh Capital	216	Todd Asset Mgmt.	294
Anchor Capital	383	Cliffwater	185	Goldman Sachs Group	6	Marathon-London	127	Putnam Investments	109	Torch Investment	427
Angel Oak Capital	309	Cohen & Steers	126	Gramercy	277	Martingale Asset Mgmt.	270	Pzena Investment	133	Tom Johnson Investors	264
Angelo, Gordon	120	Colchester Global Investors	135	Granahan Investment	307	MassMutual	44	Quest Investment	358	Tributary Capital	370
AQR Capital Mgmt.	81	Columbia Threadneedle	41	Granite Investment	373	Matthews Asia	222	Ramirez Asset Mgmt.	232	Trillium Asset Mgmt.	329
Ares Mgmt.	40	Commerce Trust	208	Growth & Opportunity	113	Mercer	35	Ranger Investments	360	TSCG Investors	387
Argent Capital	409	Commonfund	146	Growth & Opportunity	113	Mesrow	56	RBC Global Asset Mgmt.	55	TT International	240
Argus Investors' Counsel	428	Conestoga Capital	286	Great Lakes Advisors	266	MetLife Investment Mgmt.	23	Record Currency Mgmt.	91	Twin Bridge Capital	313
Ariel Investments	229	Congress Asset Mgmt.	267	GTIS Partners	322	MFG Asset Mgmt.	164	Redstone Advisors	394	TWIN Capital	378
Aristotle Capital Boston	315	Conning	60	Guardian Capital	157	MFS Investment	54	Redwood Investments	348	Ullico Investment	219
Aristotle Capital Mgmt.	129	Cooke & Bieler	212	Guggenheim Investments	57	Mill Creek Residential	217	Renaisance Investment	404	Unigestion	165
Aristotle Credit Partners	395	Corbin Capital	259	GW&K Investment	202	Miller/Howard Investments	380	Resource Mgmt.	279	Van Hulzen Asset Mgmt.	390
Arrowstreet Capital	66	CoreCommodity	250	Hahn Capital	419	MILStreet Capital	347	Rhumblin Advisors	88	Vanguard Group	1
Artisan Partners	72	Cornerstone Investment	362	Hamilton Lane	77	MissionSquare Investments	136	Rice Hall James	356	Verger Capital	332
Ashmore Group	110	Cornerstone Partners	203	Harbor Capital Advisors	128	Molpus Woodlands Group	324	Richmond Capital	272	Victory Capital	71
Asset Management One	34	Covenant Capital Group	353	Harding Loevner	122	Mondrian Investment	119	River Road Asset Mgmt.	244	Voya Investment Mgmt.	43
Associated Capital Group	361	Cramer Rosenthal McGlynn	357	Hardman Johnston Global	257	Montag & Caldwell	382	Riverbridge Partners	305	Walton Street Capital	187
Atlanta Sosnoff Capital	291	Crestline Investors	176	Harris Associates	115	Morgan Stanley Invest. Mgmt.	24	Robeco	75	Wasatch Global Investors	173
Ativo Capital Mgmt.	374	CS Capital	377	Harrison Street	112	National Investment	239	Robinson Value Mgmt.	430	Washington Capital	230
Aviva Investors	45	CS McKee	236	Hayfin Capital Mgmt.	137	National Real Estate	234	Rockpoint Group	147	Waterfall Asset Mgmt.	224
AXA Investment	18	D.F. Dent	278	Heartland Advisors	354	Neuberger Berman	39	Rockwood Capital	189	Weatherbie Capital	334
Axiom Investors	171	Dai-ichi Life Holdings	106	Heitman	111	New England Asset Mgmt.	97	Russell Investments	49	WEDGE Capital	237
Bahl & Gaynor	205	Dalton Investments	327	Hillisdale Investment	319	New York Life Investments	25	Sage Advisory Services	206	Wedgewood Partners	384
Baillie Gifford Overseas	51	Dana Investment	269	Hines	96	Newfleet Asset Mgmt.	238	Sarofim Realty	351	Wellington Mgmt.	9
Baird Advisors	76	Davis Advisors	263	Hoisington Investment	295	NewSouth Capital	341	Sasco Capital	376	Westbrook Partners	204
Baird Equity Asset Mgmt.	288	Denali Advisors	400	Hood River Capital	328	Nicholas Co.	432	Sawgrass Asset Mgmt.	339	Westfield Capital	196
Barings	36	DePrince, Race & Zollo	280	Hotchkiss & Wiley	148	Nicholas Investment	375	Schroders	26	Westwood Global	225
Beach Point Capital	191	Diamond Hill Capital	246	HS Management	345	Nikko Asset Mgmt.	121	Scout Investments	153	Wexford Capital	337
Beacon Capital	188	Dimensional Fund Advisors	22	IFM Investors	65	Ninety One	78	SECOR Asset Mgmt.	130	White Oak Global Advisors	254
Belle Haven Investments	381	Dodge & Cox	52	Income Research & Mgmt.	92	NISA Investment	42	Security Capital Research	304	Wilbanks, Smith & Thomas	365
Beutel, Goodman	151	Dolan McEniry	308	Intech	166	Nomura Asset Mgmt.	67	Segall Bryant & Hamill	199	William Blair	108
Bivium Capital	323	Domain Timber Advisors	392	Intercontinental Real Estate	186	Nomura Corporate Research	152	SEI Investments	46	Wilmington Trust	58
BlackRock	2	Driehaus Capital	197	Invesco	218	Northern Trust Asset Mgmt.	14	Semper Capital	403	Winham Capital	413
BNP Paribas Asset Mgmt.	33	Duff & Phelps	282	J.P. Morgan Asset & Wealth	7	NovaPoint Capital	423	Sentinel Real Estate	248	Winslow Asset Mgmt.	418
BNY Mellon	5	DuPont Capital	158	Jackson Square Partners	292	Nuveen	15	Shenkman Group	141	Winthrop Capital	325
Boston Partners	90	DWS	29	Jacobs Levy Equity	181	Oak Associates	412	Sierra Investment	287	Wright Investors' Service	385
Bowen, Hanes	330	Eagle Asset Mgmt.	195	Jarislowsky Fraser	142	Oak Hill Advisors	107	Silvant Capital	346	WTW Investment Services	59
Boyd Watterston	174	Eagle Capital	167	Jensen Investment	214	Oaktree Capital	68	Silver Creek Capital	243	Yousif Capital	207
Brandes Investment	182	EAM Investors	331	Johnson Asset Mgmt.	284	Oberweis Asset Mgmt.	335	Silvercrest Asset Mgmt.	253	Zacks Investment	209
Branson, Fowlkes/Russell	429	EARNEST Partners	143	Karpus Investment	368	ORIX USA	138	Sit Investment	184	Zavove Associates	336
Breckinridge Capital	190	Edgar Lomax	352	Kayne Anderson Rudnick	160	Orleans Capital	366	SKBA Capital Mgmt.	391	Zevenbergen Capital	326
Bridge City	414	Emerald Advisers	299	KBS	344	Osborne Partners	411	SLC Management	48	ZWI Investment Counsel	405
Bridgeway Capital	372	Empower Investments	61	KDP Asset Mgmt.	401	Pacific Asset Mgmt.	178	SMH Capital Advisors	408		
Brookfield Asset Mgmt.	31	Equus Capital	256	Kennedy Capital	303	Pacific West Land	434	Smith Affiliated Capital	363		
Brown Advisory	123	Evanston Capital	314	Kestrel Investment	426	PAG	114	Smith Group Asset Mgmt.	350		
Brown Capital	211	Farr, Miller & Washington	397	King Street Capital	172	Palisade Capital	317	Sound Shore Mgmt.	343		

The Largest Money Managers

The largest money managers by asset universe

Assets are in millions as of Dec. 31.

Total worldwide assets

Rank	Manager	Assets	Rank	Manager	Assets	Rank	Manager	Assets	Rank	Manager	Assets
1	BlackRock	\$8,594,488	14	Prudential Financial	\$1,377,417	27	New York Life Investments	\$653,638	40	MassMutual	\$465,776
2	Vanguard Group	\$7,252,612	15	T. Rowe Price Associates	\$1,274,700	28	AllianceBernstein	\$630,050	41	Allspring Global Investments	\$464,898
3	Fidelity Investments	\$3,655,574	16	Morgan Stanley Inv. Mgmt.	\$1,234,226	29	Manulife Investment	\$600,503	42	Asset Management One	\$459,526
4	State Street Global	\$3,481,473	17	Wellington Mgmt.	\$1,149,360	30	Columbia Threadneedle	\$585,161	43	Neuberger Berman	\$427,269
5	J.P. Morgan Asset & Wealth	\$2,765,710	18	Nuveen	\$1,090,174	31	Dimensional Fund Advisors	\$583,714	44	RBC Global Asset Mgmt.	\$389,912
6	Goldman Sachs Group	\$2,547,000	19	Northern Trust Asset Mgmt.	\$1,038,406	32	MetLife Investment Mgmt.	\$579,837	45	Ares Mgmt.	\$351,997
7	Capital Group	\$2,175,965	20	AXA Investment	\$879,135	33	MFS Investment	\$547,578	46	Barings	\$347,282
8	Amundi	\$2,031,753	21	DWS	\$876,790	34	Macquarie Asset Mgmt.	\$542,791	47	Mercer	\$344,915
9	BNY Mellon	\$1,836,032	22	Geode Capital Mgmt.	\$866,352	35	Dai-ichi Life Holdings	\$538,289	48	Voya Investment Mgmt.	\$343,403
10	Legal & General Investment	\$1,444,393	23	Charles Schwab Investment	\$757,647	36	BNP Paribas Asset Mgmt.	\$536,278	49	Dodge & Cox	\$322,933
11	Invesco	\$1,409,204	24	Schroders	\$741,635	37	KKR	\$503,897	50	SEI Investments	\$315,612
12	Franklin Templeton	\$1,387,686	25	Federated Hermes	\$668,901	38	Nomura Asset Mgmt.	\$503,661			
13	PIMCO	\$1,379,255	26	Brookfield Asset Mgmt.	\$666,146	39	Principal Global Investors	\$487,898			

U.S. institutional tax-exempt assets

Rank	Manager	Assets	Rank	Manager	Assets	Rank	Manager	Assets	Rank	Manager	Assets
1	Vanguard Group	\$2,069,703	14	Principal Global Investors	\$323,063	27	Allspring Global Investments	\$160,982	40	Arrowstreet Capital	\$95,683
2	BlackRock	\$1,748,411	15	BNY Mellon	\$317,015	28	Voya Investment Mgmt.	\$157,492	41	Rhumbline Advisers	\$84,092
3	State Street Global	\$1,188,498	16	Franklin Templeton	\$269,660	29	PFM Asset Mgmt.	\$152,712	42	Payden & Rygel	\$77,355
4	Fidelity Investments	\$1,063,114	17	Goldman Sachs Group	\$264,073	30	Empower Investments	\$146,193	43	WTW Investment Services	\$75,657
5	Geode Capital Mgmt.	\$842,721	18	MassMutual	\$251,270	31	AllianceBernstein	\$140,772	44	Pathway Capital	\$75,484
6	T. Rowe Price Associates	\$591,597	19	NISA Investment	\$235,381	32	TCW Group	\$132,953	45	LSV Asset Mgmt.	\$73,084
7	Nuveen	\$548,113	20	Wellington Mgmt.	\$227,521	33	Mercer	\$130,187	46	Alan Biller and Associates	\$72,630
8	Capital Group	\$513,351	21	Morgan Stanley Inv. Mgmt.	\$223,796	34	Legal & General Investment	\$127,931	47	Baird Advisers	\$71,044
9	Northern Trust Asset Mgmt.	\$453,567	22	Invesco	\$222,532	35	MFS Investment	\$122,783	48	American Century	\$65,886
10	Prudential Financial	\$446,143	23	Federated Hermes	\$200,225	36	Victory Capital	\$116,576	49	Brookfield Asset Mgmt.	\$65,259
11	J.P. Morgan Asset & Wealth	\$435,772	24	Dodge & Cox	\$187,633	37	Manulife Investment	\$109,978	50	KKR	\$63,744
12	Dimensional Fund Advisors	\$375,908	25	SEI Investments	\$182,628	38	Russell Investments	\$107,911			
13	PIMCO	\$339,924	26	Loomis, Sayles	\$164,655	39	Neuberger Berman	\$101,019			

U.S. institutional tax-exempt assets managed internally

Rank	Manager	Assets	Rank	Manager	Assets	Rank	Manager	Assets	Rank	Manager	Assets
1	Vanguard Group	\$1,891,398	14	BNY Mellon	\$317,015	27	Voya Investment Mgmt.	\$136,553	40	LSV Asset Mgmt.	\$73,084
2	BlackRock	\$1,748,411	15	Principal Global Investors	\$293,102	28	PFM Asset Mgmt.	\$136,039	41	AllianceBernstein	\$71,213
3	State Street Global	\$1,175,901	16	Franklin Templeton	\$269,660	29	TCW Group	\$132,953	42	Baird Advisers	\$71,044
4	Geode Capital Mgmt.	\$842,721	17	NISA Investment	\$235,381	30	Legal & General Investment	\$127,931	43	American Century	\$65,886
5	Fidelity Investments	\$698,217	18	MassMutual	\$228,270	31	MFS Investment	\$122,783	44	Brookfield Asset Mgmt.	\$65,259
6	T. Rowe Price Associates	\$591,597	19	Wellington Mgmt.	\$227,521	32	Victory Capital	\$114,649	45	KKR	\$63,744
7	Nuveen	\$548,113	20	Morgan Stanley Inv. Mgmt.	\$217,741	33	Manulife Investment	\$109,978	46	Income Research & Mgmt.	\$62,805
8	Capital Group	\$513,351	21	Federated Hermes	\$200,225	34	Empower Investments	\$96,495	47	New York Life Investments	\$60,410
9	Northern Trust Asset Mgmt.	\$425,569	22	Invesco	\$188,844	35	Arrowstreet Capital	\$95,683	48	Ares Mgmt.	\$55,603
10	J.P. Morgan Asset & Wealth	\$424,387	23	Goldman Sachs Group	\$187,925	36	Rhumbline Advisers	\$84,092	49	AQR Capital Mgmt.	\$51,869
11	Prudential Financial	\$378,141	24	Dodge & Cox	\$187,633	37	Neuberger Berman	\$79,395	50	MetLife Investment Mgmt.	\$50,383
12	Dimensional Fund Advisors	\$375,908	25	Loomis, Sayles	\$164,655	38	Payden & Rygel	\$77,355			
13	PIMCO	\$339,924	26	Allspring Global Investments	\$145,472	39	Russell Investments	\$73,969			

U.S.-client assets

Rank	Manager	Assets	Rank	Manager	Assets
1	Vanguard Group	\$6,909,007	14	Wellington Mgmt.	\$932,760
2	BlackRock	\$5,489,523	15	Northern Trust Asset Mgmt.	\$866,225
3	Fidelity Investments	\$3,510,819	16	BNY Mellon	\$863,708
4	State Street Global	\$2,501,855	17	Geode Capital Mgmt.	\$842,728
5	Capital Group	\$2,121,783	18	PIMCO	\$818,161
6	J.P. Morgan Asset & Wealth	\$1,945,501	19	Charles Schwab Investment	\$757,647
7	Goldman Sachs Group	\$1,806,000	20	Federated Hermes	\$620,048
8	T. Rowe Price Associates	\$1,174,991	21	MetLife Investment Mgmt.	\$562,796
9	Nuveen	\$1,025,905	22	Dimensional Fund Advisors	\$493,931
10	Prudential Financial	\$1,023,928	23	New York Life Investments	\$477,830
11	Franklin Templeton	\$993,086	24	MassMutual	\$465,776
12	Invesco	\$959,398	25	AllianceBernstein	\$444,850
13	Morgan Stanley Inv. Mgmt.	\$958,327			

Institutional U.S.-client assets

Rank	Manager	Assets	Rank	Manager	Assets
1	Vanguard Group	\$5,024,824	14	Northern Trust Asset Mgmt.	\$620,655
2	BlackRock	\$2,765,737	15	Federated Hermes	\$587,777
3	Fidelity Investments	\$1,731,599	16	MetLife Investment Mgmt.	\$562,796
4	State Street Global	\$1,498,989	17	Dimensional Fund Advisors	\$493,931
5	J.P. Morgan Asset & Wealth	\$970,556	18	PIMCO	\$468,874
6	Wellington Mgmt.	\$931,808	19	Franklin Templeton	\$413,335
7	Goldman Sachs Group	\$864,536	20	Principal Global Investors	\$403,253
8	Geode Capital Mgmt.	\$842,728	21	Invesco	\$403,016
9	Capital Group	\$746,012	22	New York Life Investments	\$384,064
10	Nuveen	\$695,784	23	Allspring Global Investments	\$353,837
11	Prudential Financial	\$679,368	24	KKR	\$316,630
12	T. Rowe Price Associates	\$675,852	25	NISA Investment	\$255,992
13	BNY Mellon	\$656,602			

The Largest Money Managers

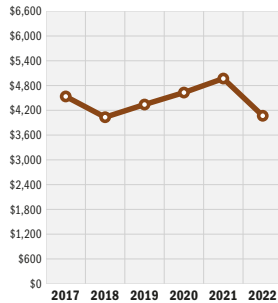
Managers of defined benefit assets

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	BlackRock	\$549,775
2	State Street Global	\$385,473
3	BNY Mellon	\$218,128
4	NISA Investment	\$217,274
5	PIMCO	\$189,216
6	Prudential Financial	\$184,892
7	J.P. Morgan Asset & Wealth	\$136,120
8	Northern Trust Asset Mgmt.	\$118,622
9	Morgan Stanley Inv. Mgmt.	\$96,219
10	Wellington Mgmt.	\$86,010

Asset growth (billions)



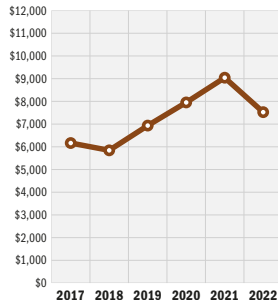
Managers of defined contribution assets

U.S. institutional, tax-exempt assets as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Vanguard Group	\$1,783,523
2	BlackRock	\$1,164,308
3	Fidelity Investments	\$987,774
4	State Street Global	\$554,967
5	T. Rowe Price Associates	\$542,720
6	Nuveen	\$510,463
7	Capital Group	\$483,269
8	J.P. Morgan Asset & Wealth	\$245,802
9	Prudential Financial	\$201,425
10	Northern Trust Asset Mgmt.	\$183,178

Asset growth (billions)



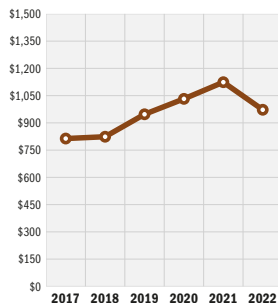
Managers of endowment & foundation assets

Total worldwide assets as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	State Street Global	\$140,609
2	Vanguard Group	\$115,720
3	BlackRock	\$50,029
4	J.P. Morgan Asset & Wealth	\$35,404
5	Morgan Stanley Inv. Mgmt.	\$28,340
6	Northern Trust Asset Mgmt.	\$27,956
7	PNC Financial	\$23,753
8	PIMCO	\$22,721
9	Mercer	\$22,155
10	Commonfund	\$20,978

Asset growth (billions)

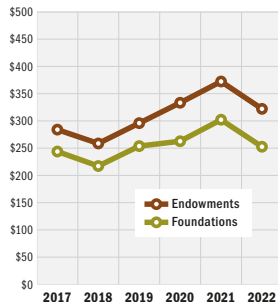


U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	State Street Global	\$140,609
2	Vanguard Group	\$115,720
3	Wellington Mgmt.	\$39,104
4	BlackRock	\$34,328
5	Northern Trust Asset Mgmt.	\$27,956
6	PIMCO	\$22,721
7	Morgan Stanley Inv. Mgmt.	\$17,204
8	PNC Financial	\$13,210
9	BNY Mellon	\$11,963
10	Payden & Rygel	\$11,917

Asset growth (billions)



Profiles of the 50 largest money managers

37 Aegon Asset Management

Aegonplein 50, The Hague 2591 TV Netherlands; phone: 877-234-6862; www.aegonam.com

	(millions)
Total assets managed worldwide.....	\$311,283
Total worldwide institutional assets.....	\$302,171
Total U.S. client assets.....	\$93,413
Total U.S. institutional client assets.....	\$93,413
Total U.S. RIA assets.....	\$17,800
Total U.S. tax-exempt assets.....	\$3,884
Total U.S. institutional tax-exempt.....	\$3,884
Internally managed.....	\$3,884

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX	
Fixed income.....	94%
Cash.....	6%

INVESTMENT STRATEGIES

U.S. equity, active.....	\$2
U.S. bond, active.....	\$3,882

FIXED-INCOME STRATEGIES

Core.....	\$92
Core-plus.....	\$100
High-yield.....	\$511
High-yield mandates.....	\$511

WORLDWIDE ASSETS UNDER MANAGEMENT

Hedge fund assets.....	\$11
Mutual fund assets.....	\$90,863
Investment outsourcing mandates.....	\$40,630
LDI strategies.....	\$134,470
Managed for retirement plans.....	\$41,082
ESG investing.....	\$128,385
ESG mandates.....	\$2,239

DEFINED CONTRIBUTION ASSETS

U.S. INSTITUTIONAL TAX-EXEMPT	
Total.....	\$467
Internally managed.....	\$467

WORKFORCE

Total number of employees.....	1,214
Number of U.S.-based employees.....	491
Number of cybersecurity professionals.....	18

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total.....	49%
Senior management.....	48%
Investment.....	24%

PERCENT U.S.-BASED MINORITY EMPLOYEES

Total.....	10%
Investment.....	14%

Parent company: Aegon NV

Chief executive officer: Bas NieuweWeme

Chief investment officer: Stephen Jones

U.S. client contact: Anthony Mazzella

Other client contact: Bradley Dawson

The assets of the following subsidiaries or affiliates are included in the figures above:

- ▶ Aegon Asset Management NL
- ▶ Aegon Asset Management Spain
- ▶ Aegon Asset Management UK
- ▶ Aegon Asset Management US: total assets: \$84.63 billion; U.S. institutional, tax-exempt assets: \$3.88 billion; CIO: Stephen Jones; client contact: Bradley Dawson, phone: 312-777-2732, email: brdawson@aegonam.com

38 AllianceBernstein LP

501 Commerce St., Nashville, TN 37203; phone: 212-969-1000; www.alliancebernstein.com

	(millions)
Total assets managed worldwide.....	\$630,050
Total worldwide institutional assets.....	\$301,329
Total U.S. client assets.....	\$444,850
Total U.S. institutional client assets.....	\$230,563
Total U.S. tax-exempt assets.....	\$215,313
Total U.S. institutional tax-exempt.....	\$140,772
Assigned to external managers.....	\$69,559
Internally managed.....	\$71,213

More data online

For a full set of manager data, plus profiles of all 434 managers, go to pionline.com/managers2023

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX	
Equity.....	79%
Fixed income.....	18%
Hedge funds.....	3%

INVESTMENT STRATEGIES

U.S. equity, active.....	\$20,679
U.S. equity, passive.....	\$17,981
Non-U.S. equity, active.....	\$7,176
Non-U.S. equity, passive.....	\$1,683
Global equity, active.....	\$8,664
Global equity, passive.....	\$232
U.S. bond, active.....	\$3,712
U.S. bond, passive.....	\$92
Global/non-U.S. bond, active.....	\$5,087
Global/non-U.S. bond, passive.....	\$3
Real estate debt.....	\$89
Hedge funds.....	\$1,737
Direct lending.....	\$51
Privately placed debt.....	\$161
Distressed debt.....	\$3,529
Renewable energy.....	\$141
Cash.....	\$196

ACTIVE U.S. EQUITY STRATEGIES

GROWTH	
Large-cap.....	\$9,195
Smidcap.....	\$2,112
Small-cap.....	\$3,298
Broad-market.....	\$78

VALUE

Large-cap.....	\$464
Smidcap.....	\$2,699
Small-cap.....	\$1,282

CORE

Large-cap.....	\$981
Small-cap.....	\$1
Broad-market.....	\$572

PASSIVE U.S. EQUITY STRATEGIES

GROWTH	
Large-cap.....	\$79

CORE

Large-cap.....	\$16,379
Midcap.....	\$21
Smidcap.....	\$374
Broad-market.....	\$1,130
Low-volatility strategies.....	\$1,138
REITs.....	\$495

NON-U.S. STRATEGIES

Emerging markets equity.....	\$523
Emerging markets equity mandates.....	\$176
Frontier markets equity.....	\$124
China equity.....	\$223
Emerging markets debt.....	\$1,070
Emerging markets debt mandates.....	\$1,070

FIXED-INCOME STRATEGIES

Core.....	\$611
Core-plus.....	\$4,639
High-yield.....	\$593
High-yield mandates.....	\$593
Inflation-protected securities.....	\$93
Risk-parity strategies.....	\$24

ESG INVESTING

Total.....	\$45,425
ESG mandates.....	\$566
Equity, active.....	\$421
Bond, active.....	\$4

WORLDWIDE ASSETS UNDER MANAGEMENT

Hedge fund assets.....	\$10,972
Hedge fund-of-fund assets.....	\$1,294
Mutual fund assets.....	\$207,377

DIRECT LENDING NICHE OFFERS CONSISTENT RETURNS



Drew Guyette
Co-Chief Credit Officer and Senior Partner
Twin Brook Capital Partners

Volatility has been a hallmark of the capital markets this year, with the Federal Reserve battling inflation while concerns linger about the strength of U.S. regional banks, tightening credit markets and a general growth slowdown. For investors seeking consistent returns, navigating this economic environment can be challenging at best. Not all asset classes, however, are subject to the whiplash of short-term market movements.

Direct lending is one such asset class that can provide long-term resilience, according to Drew Guyette, co-chief credit officer and senior partner at Twin Brook Capital Partners — Angelo Gordon's middle market direct lending business. "We think about direct lending in terms of consistency of outcomes and expectations," he said. "In this market, a senior debt position in the capital structures of sponsor-backed businesses coupled with the right experienced lending manager can produce that 'sleep well at night' experience for investors."

A SPECIFIC SEGMENT

Direct lending has been among the fastest-growing asset classes since the Global Financial Crisis, with total assets under management reaching roughly \$800 billion by mid-2022, according to Preqin. This large market is typically defined based on borrower ownership — family- or founder-owned (non-sponsored) versus private equity-backed (sponsored) companies — or it is segmented by size, measured by borrower revenue or EBITDA.

When defining the market based on borrower size, it is further delineated into four segments: the broadly syndicated loan, or BSL, market; the upper middle market; the core middle market; and the lower middle market. The BSL market consists of the largest companies — borrowers with greater than \$75 million of EBITDA — while the lower middle market is defined as companies with EBITDA of \$25 million or less, Guyette said.

It's the lower middle market segment that can offer investors a sweet spot, with lower volatility and consistent returns, he said. In fact, this segment has absorbed the recent shocks of four-decade high inflation followed by sharp and rapid interest rate increases better than other parts of the direct lending market.

"The lower middle market has benefited from the consistency of borrower performance," Guyette said. "Smaller businesses can compete as successfully as their larger counterparts in the marketplace. Additionally, structurally, they have had less pressurized balance sheets and more conservative debt instruments."

COUNTERINTUITIVE VIEW

The fact that smaller borrowers weathered the economic and fiscal storms of the last few years better than their larger counterparts seems counterintuitive. But, according to Guyette, that's where an experienced direct lending manager's process plays a major role.

"Generally, there is an assumption that larger businesses should perform better or be more resilient than smaller businesses," he said. "But if you have the right selection process and the right underwriting structures, you can identify small businesses that are market leaders with demonstrated niche or regional dominance." Twin Brook's unwavering focus on lending to market leaders within this lower middle market segment is one of the major reasons the firm has not only managed through the macroeconomic headwinds of the last

few years, but has continued to grow and gain market share, Guyette noted.

"The reality is that these businesses have been challenged by a variety of inflationary factors as well as interest rate policy over the last two years. And they've withstood those tests," he said. "These best-in-class businesses in the lower middle market have value propositions and pricing power that have allowed them to weather the storm." Some of the ways that Twin Brook's portfolio companies have navigated supply chain challenges, the rise in interest rates and volatile capital markets have included passing through price increases to customers, redefining their value propositions, reinforcing customer relationships, and staying small but nimble.

However, Guyette is quick to add that such success isn't seen across the entire lower middle market. With this in mind, investors need to carefully consider a manager's credit selection and underwriting processes, which are key to identifying companies best positioned to perform without the risk — or with a lower risk — of default. As such, they should consider the following about a direct lending manager:

- How much experience do they have in the direct lending space broadly and in the segment of the market on which they focus?
- What's their credit selection process?
- What's their portfolio construction process?
- What is the scale of the infrastructure backing the manager?

These best-in-class businesses in the lower middle market have value propositions and pricing power that have allowed them to weather the storm.

ROBUST DUE DILIGENCE

When it comes to identifying best-in-class small businesses, it's not about looking at a few standalone factors. Lenders need to perform robust due diligence, evaluating upwards of a dozen different factors that all need to be considered in concert, Guyette said.

"It's our institutional belief that you have to get 100% of those dozen-plus different factors right to deliver that consistent underwriting and portfolio management experience," he noted. "And that having a deep relationship with a borrower's PE sponsor — understanding their goals for the company and the value they bring to the table in terms of operating expertise and resources — is key."

However, a manager's job is not complete once they have determined that a borrower meets their standards and finish the initial underwriting process. Ongoing due diligence on the borrower — or portfolio management — is equally important, according to Guyette.

A DEEPER DIVE

Ongoing portfolio management includes in-depth monitoring of a borrower's performance and balance sheet to understand how much, if any, risk the company may be exposed to from outside forces, such as higher interest rates.

"We're always looking at the cash conversion cycle of our borrowers, thinking about their working capital and free cash flow from operations," Guyette explained. "Then we think about how the borrower will interact on its revolving line of credit and use that as a monitoring tool." That process, which Guyette characterized as "preventative maintenance," has served the firm well through the market stresses of the last three years.

"With recent Fed tightening, the question of, 'Is there concern of a future default cycle that direct lending as a whole is possibly facing?' has been a point of much discussion," he said. "Reflecting on the past few years, I think our performance has been supported by our portfolio management style and our ability to spot micro trends and manage through them before the macro trends really set in."

Given the ongoing macro concerns, both private equity firms and direct lenders are taking a more measured due diligence stance and engaging in a deeper evaluation of opportunities, which can result in elongated transaction timelines. Those extended processes could impact the level of market activity this year. "You could extrapolate that the markets are going to experience less volume this year," Guyette added.

EXPERIENCE AND CONSISTENCY

For Twin Brook, consistency of strategy — or not succumbing to style drift — is a key strength, Guyette said.

While investment opportunities exist across different industries in the lower middle market, Guyette warned that trying to capitalize on hot new ideas or sectors can be risky because those opportunities are often less likely to deliver consistent returns with low volatility over the long term. "We try to not chase trends or fads as they relate to specific sectors," he said. "Historically, we've sought to avoid volatile industries or industries that don't line up well with the consistent, stable senior cash flow profiles we target."

Twin Brook takes a generalist approach, focusing on businesses that offer a strong value proposition and have high barriers to entry, but they've also ensured they have the appropriate specialized resources in place where it makes sense. "We believe some sectors require specialized originations, underwriting, and PE support," Guyette said. "When it comes to healthcare, for example, we have the dedicated resources and human capital to specialize in that industry."

In addition to consistency, it is important to focus on a manager's experience, Guyette emphasized. "Longevity and experience are differentiators in the lower middle market. You need to make sure you have deeply knowledgeable professionals that are able to speak to all the nuances of the market in order to deliver on portfolio outcomes." ■

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pionline.com/twinbrook-direct-lending23

The Largest Money Managers

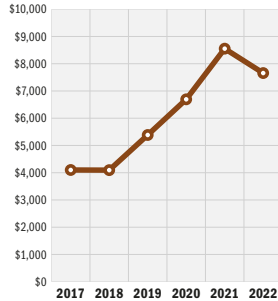
Managers sponsoring ETFs/ETNs

Total worldwide assets as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	BlackRock	\$2,909,613
2	Vanguard Group	\$2,003,689
3	State Street Global	\$1,018,882
4	Invesco	\$394,413
5	Charles Schwab Investment	\$259,367
6	Amundi	\$213,874
7	Nomura Asset Mgmt.	\$196,951
8	DWS	\$149,186
9	J.P. Morgan Asset & Wealth	\$97,473
10	Nikko Asset Mgmt.	\$90,360

Asset growth (billions)



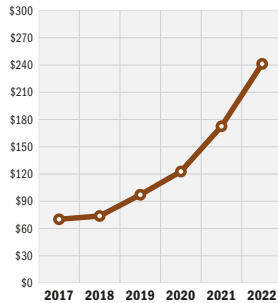
Managers sponsoring active ETFs/ETNs

Total worldwide assets as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Dimensional Fund Advisors	\$72,249
2	J.P. Morgan Asset & Wealth	\$63,526
3	PIMCO	\$21,014
4	American Century	\$18,423
5	Invesco	\$10,427
6	State Street Global	\$10,326
7	Victory Capital	\$8,004
8	Franklin Templeton	\$5,800
9	Vanguard Group	\$5,393
10	Fidelity Investments	\$4,803

Asset growth (billions)



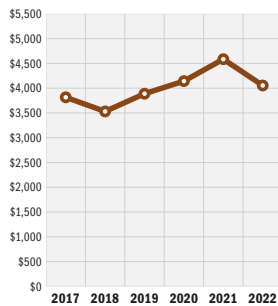
Managers of non-affiliated insurance co. assets

Total worldwide assets as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	BlackRock	\$569,851
2	PIMCO	\$258,938
3	J.P. Morgan Asset & Wealth	\$257,933
4	State Street Global	\$206,846
5	Prudential Financial	\$185,681
6	DWS	\$167,713
7	T. Rowe Price Associates	\$167,176
8	Schroders	\$143,403
9	Wellington Mgmt.	\$136,840
10	Franklin Templeton	\$117,186

Asset growth (billions)



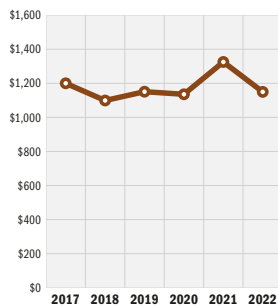
Managers of sovereign wealth fund assets

Total worldwide assets as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	BNY Mellon	\$109,369
2	BlackRock	\$98,813
3	Brookfield Asset Mgmt.	\$85,527
4	State Street Global	\$82,141
5	Legal & General Investment	\$57,890
6	Franklin Templeton	\$51,344
7	J.P. Morgan Asset & Wealth	\$45,689
8	Starwood Capital	\$30,494
9	Pathway Capital	\$28,937
10	Ares Mgmt.	\$28,022

Asset growth (billions)



Continued from Page 26

U.S. 1940 Investment Co. Act	\$120,728
Sponsored ETFs/ETNs	\$287
Actively managed	\$287
Institutional	\$50
Factor-based strategies	\$889
ESG investing	\$429,811
ESG mandates	\$17,226

DEFINED CONTRIBUTION ASSETS

U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$92,414
Internally managed	\$22,934

Primary custodian: State Street

Parent company: Equitable Holdings Inc.

Chief executive officer: Seth Bernstein

U.S. client contact: Miguel Rozensztrach

Other client contact: Onur Erzan

DC client contact: Jennifer DeLong

32 Allspring Global Investments

Level 3, 1415 Vantage Park Drive, Charlotte, NC 28203; phone: 800-368-7550; www.allspringglobal.com

	(millions)
Total assets managed worldwide	\$464,898
Total worldwide institutional assets	\$385,314
Total U.S. client assets	\$432,672
Total U.S. institutional client assets	\$353,837
Total U.S. RIA assets	\$24,311
Total U.S. tax-exempt assets	\$164,102
Total U.S. institutional tax-exempt	\$160,982
Assigned to external managers	\$15,510
Internally managed	\$145,472

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX	
Equity	21%
Fixed income	78%
Cash	1%

INVESTMENT STRATEGIES

U.S. equity, active	\$17,405
U.S. equity, passive	\$403
U.S. equity, enhanced index	\$1,386
Non-U.S. equity, active	\$9,609
Non-U.S. equity, passive	\$2
Non-U.S. equity, enhanced index	\$33
Global equity, active	\$1,343
U.S. bond, active	\$112,073
U.S. bond, passive	\$133
Global/non-U.S. bond, active	\$1,607
Hedge funds	\$62
Cash	\$1,416

ACTIVE U.S. EQUITY STRATEGIES

GROWTH	
Large-cap	\$2,674
Midcap	\$186
Smidcap	\$1,691
Small-cap	\$731
Broad-market	\$405
VALUE	
Large-cap	\$90
Midcap	\$6,064
Small-cap	\$3,236
CORE	
Large-cap	\$52
Midcap	\$225
Small-cap	\$79
Broad-market	\$169

PASSIVE U.S. EQUITY STRATEGIES

CORE	
Large-cap	\$341
Low-volatility strategies	\$1,865

NON-U.S. STRATEGIES

Emerging markets equity	\$4,423
Emerging markets equity mandates	\$4,423
Emerging markets debt	\$105

FIXED-INCOME STRATEGIES

Core	\$27,251
Core-plus	\$1,126
Unconstrained	\$7
High-yield	\$142
High-yield mandates	\$67
Inflation-protected securities	\$21
Stable value	\$61,531

Bank loans	\$14
LDI strategies	\$2,858

ESG INVESTING

Total	\$8,068
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WORLDWIDE ASSETS UNDER MANAGEMENT

Hedge fund assets	\$227
Mutual fund assets	\$251,154
U.S. 1940 Investment Co. Act	\$245,823
Investment outsourcing mandates	\$1,722
LDI strategies	\$2,858
Managed for retirement plans	\$2,858
Proprietary stable value	\$75,731
Factor-based strategies	\$7,388
ESG investing	\$26,641

OVERLAY STRATEGIES

U.S. INSTITUTIONAL TAX-EXEMPT ASSETS (NOTIONAL VALUE)	
Total	\$7

DEFINED CONTRIBUTION ASSETS

U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$106,534
Internally managed	\$91,315

WORKFORCE

Total number of employees	1,538
Number of U.S.-based employees	1,400

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total	39%
Senior management	43%
Investment	25%

PERCENT U.S.-BASED MINORITY EMPLOYEES

Total	32%
Senior management	21%
Investment	37%

Primary custodian: State Street

Parent company: Allspring Global Investments Holdings LLC

Chief executive officer: Joseph A. Sullivan

Chief investment officer: Jon Baranko

Client contact: John Moninger

10 Amundi

91-93 boulevard Pasteur, Paris 75015 France; phone: 33-1-7633-3030; www.amundi.com

	(millions)
Total assets managed worldwide	\$2,031,753
Total worldwide institutional assets	\$1,119,793
Total U.S. client assets	\$55,773
Total U.S. institutional client assets	\$20,546
Total U.S. RIA assets	\$2,600
Total U.S. tax-exempt assets	\$31,247
Total U.S. institutional tax-exempt	\$17,052
Internally managed	\$17,052

WORLDWIDE ASSETS UNDER MANAGEMENT

Mutual fund assets	\$758,409
U.S. 1940 Investment Co. Act	\$42,718
Sponsored ETFs/ETNs	\$213,874
Factor-based strategies	\$19,699
ESG investing	\$853,339
ESG mandates	\$280,998

WORKFORCE

Total number of employees	5,400
Percent employee owned	1%

Parent company: Credit Agricole SA

Chief executive officer: Valerie Baudson

Chief investment officer: Vincent Mortier

U.S. client contact: Joseph Carrabes

The assets of the following subsidiaries or affiliates are included in the figures above:

• Amundi Asset Management US Inc.

40 Ares Management LLC

2000 Avenue of the Stars, 12th Floor, Los Angeles, CA 90067; phone: 310-201-4100; www.aresmgmt.com

	(millions)
Total assets managed worldwide	\$351,997
Total worldwide institutional assets	\$296,014
Total U.S. client assets	\$154,413
Total U.S. institutional client assets	\$154,413
Total U.S. tax-exempt assets	\$55,603
Total U.S. institutional tax-exempt	\$55,603
Internally managed	\$55,603

The Largest Money Managers

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX

Fixed income	39%
Equity real estate	9%
Private equity	30%
Hedge funds	3%
Other	19%

Other type: Real estate debt, real estate secondaries, credit secondaries, strategic initiatives

INVESTMENT STRATEGIES

U.S. bond, active	\$8,680
Global/non-U.S. bond, active	\$13,422
Equity real estate, U.S.	\$916
Equity real estate, non-U.S.	\$1,610
Hedge funds	\$1,189
Buyout funds	\$7,335
Distressed debt	\$2,486
Renewable energy	\$499
High-yield	\$225
CDOs	\$577

WORLDWIDE ASSETS UNDER MANAGEMENT

Hedge fund assets	\$5,224
Mutual fund assets	\$2,434
U.S. 1940 Investment Co. Act	\$1,383
ESG investing	\$100

WORKFORCE

Total number of employees	2,536
Number of U.S.-based employees	1,744
Number of cybersecurity professionals	5
Percent employee owned	45%

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total	40%
Senior management	21%
Investment	22%

PERCENT U.S.-BASED MINORITY EMPLOYEES

Total	34%
Senior management	21%
Investment	24%

Primary custodian: State Street
 Parent company: Ares Management Corp.
 Chief executive officer: Michael Arougheti
 U.S. client contact: Scott McConnell

34 Asset Management One Co. Ltd.

Teikoku Building, 8-2, Marunouchi 1-chome, Chiyoda-ku, Tokyo 100-0005 Japan; phone: 81-3-6774-6075; www.am-one.co.jp

(millions)

Total assets managed worldwide	\$459,526
Total worldwide institutional assets	\$376,559
Total U.S. client assets	\$460
Total U.S. institutional client assets	\$460
Total U.S. tax-exempt assets	\$460
Total U.S. institutional tax-exempt	\$460
Internally managed	\$460

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX

Equity	11%
Fixed income	8%
Other	81%

Other type: Multiasset

INVESTMENT STRATEGIES

U.S. equity, active	\$7
Non-U.S. equity, active	\$43
U.S. bond, active	\$36

WORLDWIDE ASSETS UNDER MANAGEMENT

Mutual fund assets	\$74,417
Sponsored ETFs/ETNs	\$8,550
ESG investing	\$15,436
ESG mandates	\$15,436

WORKFORCE

Total number of employees	1,067
Number of U.S.-based employees	49
Number of cybersecurity professionals	23

Parent companies: Mizuho Financial Group Inc., Dai-ichi Life Holdings Inc.
 Chief executive officer: Akira Sugano
 Chief investment officers: Nobutaka Aoki, Takashi Maruyama
 U.S. client contact: Satoshi Oshita

45 Aviva Investors

St. Helen's, 1 Undershaft, London EC3P 3DQ England; phone: 44-20-7809-6000; www.avivainvestors.com

(millions)

Total assets managed worldwide	\$267,766
Total worldwide institutional assets	\$250,137
Total U.S. client assets	\$87
Total U.S. institutional client assets	\$87
Total U.S. tax-exempt assets	\$87
Total U.S. institutional tax-exempt	\$87
Internally managed	\$87

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX

Fixed income	100%
--------------	------

INVESTMENT STRATEGIES

U.S. bond, active	\$87
High-yield	\$27
High-yield mandates	\$27

ESG INVESTING

Total	\$87
-------	------

WORLDWIDE ASSETS UNDER MANAGEMENT

Mutual fund assets	\$33,816
U.S. 1940 Investment Co. Act	\$60
LDI strategies	\$20,822
Managed for retirement plans	\$5,509
ESG investing	\$267,766
ESG mandates	\$98,079

WORKFORCE

Total number of employees	997
Number of U.S.-based employees	34
Number of cybersecurity professionals	31
Percent employee owned	1%

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total	9%
Senior management	3%
Investment	3%

PERCENT U.S.-BASED MINORITY EMPLOYEES

Total	4%
Senior management	3%
Investment	3%

Primary custodian: J.P. Morgan
 Parent company: Aviva PLC
 Chief executive officer: Mark Versey

18 AXA Investment Managers

100 W. Putnam Ave., 3rd Floor, Greenwich, CT 06830; phone: 203-983-4200; www.axa-im.com

(millions)

Total assets managed worldwide	\$879,135
Total worldwide institutional assets	\$726,093
Total U.S. client assets	\$34,580
Total U.S. institutional client assets	\$33,070
Total U.S. tax-exempt assets	\$256
Total U.S. institutional tax-exempt	\$256
Internally managed	\$256

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX

Equity	48%
Fixed income	52%

INVESTMENT STRATEGIES

U.S. equity, active	\$122
U.S. bond, active	\$134

FIXED-INCOME STRATEGIES

Core	\$134
High-yield	\$134

WORLDWIDE ASSETS UNDER MANAGEMENT

Hedge fund-of-fund assets	\$3,353
Mutual fund assets	\$287,215
Investment outsourcing mandates	\$18,809
LDI strategies	\$12,561
Managed for retirement plans	\$8,842
Factor-based strategies	\$5,068
ESG investing	\$719,017
ESG mandates	\$522,059

WORKFORCE

Total number of employees	2,615
Number of U.S.-based employees	174
Number of cybersecurity professionals	4

Primary custodian: State Street
 Parent company: AXA Group

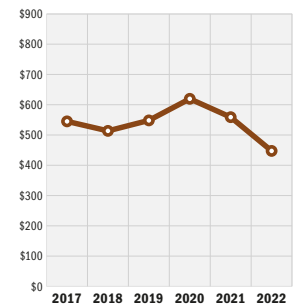
Managers of central bank assets

Total worldwide assets as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	BlackRock	\$73,292
2	State Street Global	\$67,366
3	PIMCO	\$45,440
4	BNP Paribas Asset Mgmt.	\$26,613
5	Northern Trust Asset Mgmt.	\$23,996
6	J.P. Morgan Asset & Wealth	\$21,483
7	Franklin Templeton	\$20,921
8	Prudential Financial	\$20,211
9	Columbia Threadneedle	\$14,375
10	Schroders	\$12,834

Asset growth (billions)



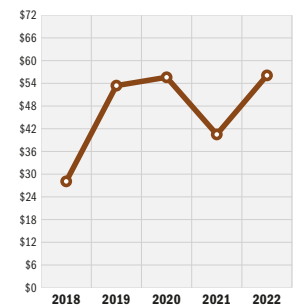
Managers of 529 plan assets

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Nuveen	\$32,561
2	Invesco	\$5,608
3	Dimensional Fund Advisors	\$4,704
4	Fidelity Investments	\$4,265
5	Voya Investment Mgmt.	\$2,654
6	American Century	\$2,634
7	State Street Global	\$1,547
8	Principal Global Investors	\$1,374
9	AllianceBernstein	\$228
10	AEW Capital	\$144

Asset growth (billions)



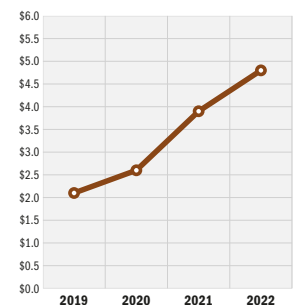
Managers of HSA assets

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Fidelity Investments	\$3,577
2	Nuveen	\$1,136
3	Voya Investment Mgmt.	\$52
4	Federated Hermes	\$29
5	Winthrop Capital	\$3

Asset growth (billions)



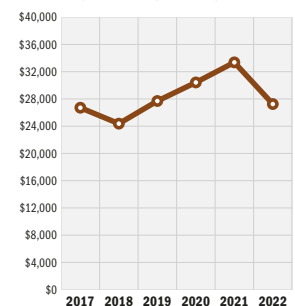
Managers of mutual fund assets

Total worldwide assets as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Vanguard Group	\$4,984,848
2	Fidelity Investments	\$3,235,885
3	Capital Group	\$2,058,957
4	J.P. Morgan Asset & Wealth	\$1,241,637
5	T. Rowe Price Associates	\$911,763
6	BlackRock	\$884,902
7	Franklin Templeton	\$870,034
8	PIMCO	\$851,703
9	Amundi	\$758,409
10	Wellington Mgmt.	\$643,415

Asset growth (billions)



The Largest Money Managers

WORKFORCE

Total number of employees 19,763
Primary custodian: J.P. Morgan
Chief executive officer: Laurence D. Fink
Chief investment officers: Rick Rieder, Raffaele Savi, Becci McKinley Rowe, Philip Vasani
U.S. client contact: Armando Senra
DC client contact: Anne Ackerley

33 BNP Paribas Asset Management

787 Seventh Ave., 5th Floor Annex, New York, NY 10019; phone: 212-681-3181; www.bnpparibas-am.com

(millions)
 Total assets managed worldwide \$536,278
 Total worldwide institutional assets \$377,839
 Total U.S. client assets \$4,750
 Total U.S. institutional client assets \$4,735
 Total U.S. tax-exempt assets \$3,601
 Total U.S. institutional tax-exempt \$3,601
 Internally managed \$3,601

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX
 Fixed income 65%
 Other 35%
 Other type: *Balanced, currency*

INVESTMENT STRATEGIES
 U.S. bond, active \$228
 Global/non-U.S. bond, active \$1,446
 Inflation-protected securities \$1,446

WORLDWIDE ASSETS UNDER MANAGEMENT
 Hedge fund assets \$287
 Hedge fund-of-fund assets \$868
 Mutual fund assets \$256,277
 Sponsored ETFs/ETNs \$30,922
 LDI strategies \$19,091
 Managed for retirement plans \$15,098
 Factor-based strategies \$14,230
 ESG investing \$328,264
 ESG mandates \$73,490

OVERLAY STRATEGIES
U.S. INSTITUTIONAL TAX-EXEMPT ASSETS (NOTIONAL VALUE)
 Total \$922

WORKFORCE
 Total number of employees 2,363
 Number of U.S.-based employees 97

PERCENT U.S.-BASED FEMALE EMPLOYEES
 Total 40%
 Senior management 60%
 Investment 26%

Primary custodian: BNP Paribas
Parent company: BNP Paribas
Chief executive officer: Sandro Pierri
Chief investment officer: Robert Gambi
U.S. client contact: Kenneth Corwin
Other client contact: Johanna Lasker

5 BNY Mellon Investment Management

240 Greenwich St., New York, NY 10286; phone: 212-495-1784; www.bnymellon.com

(millions)
 Total assets managed worldwide \$1,836,032
 Total worldwide institutional assets \$1,447,404
 Total U.S. client assets \$863,708
 Total U.S. institutional client assets \$656,602
 Total U.S. tax-exempt assets \$317,015
 Total U.S. institutional tax-exempt \$317,015
 Internally managed \$317,015

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX
 Equity 54%
 Fixed income 19%
 Cash 18%
 Other 9%
 Other type: *Multiasset, alternatives, LDI, overlay*

INVESTMENT STRATEGIES
 U.S. equity, active \$8,843
 U.S. equity, passive \$112,379
 Non-U.S. equity, active \$16,192
 Non-U.S. equity, passive \$7,883
 Global equity, active \$10,470

Global equity, passive \$17,132
 U.S. bond, active \$33,001
 U.S. bond, passive \$20,574
 Global/non-U.S. bond, active \$1,923
 Global/non-U.S. bond, passive \$1,481
 Cash \$56,819

ACTIVE U.S. EQUITY STRATEGIES
GROWTH
 Large-cap \$329
 Smidcap \$403
 Small-cap \$137

VALUE
 Large-cap \$1,149
 Midcap \$503
 Smidcap \$283
 Small-cap \$606

CORE
 Large-cap \$684

PASSIVE U.S. EQUITY STRATEGIES
GROWTH
 Large-cap \$1,113
 Small-cap \$124

VALUE
 Large-cap \$801
 Small-cap \$354

CORE
 Large-cap \$26,767
 Midcap \$3,787
 Small-cap \$5,001

NON-U.S. STRATEGIES
 Emerging markets debt \$241

FIXED-INCOME STRATEGIES
 Core \$130
 Core-plus \$3,253
 Unconstrained \$18
 High-yield \$352
 Inflation-protected securities \$1,023
 Stable value \$22,139
 LDI strategies \$11,251

WORLDWIDE ASSETS UNDER MANAGEMENT
 Mutual fund assets \$383,750
 U.S. 1940 Investment Co. Act \$308,887
 Sponsored ETFs/ETNs \$1,304
 Actively managed \$126
 LDI strategies \$469,603
 Managed for retirement plans \$453,888
 Proprietary stable value \$22,139

DEFINED CONTRIBUTION ASSETS
U.S. INSTITUTIONAL TAX-EXEMPT
 Total \$86,923
 Internally managed \$86,923

Primary custodian: BNY Mellon
Parent company: Bank of New York Mellon
Chief executive officer: Hanneke Smits
U.S. client contact: Kyle Pham

31 Brookfield Asset Management

250 Vesey St., 15th Floor, New York, NY 10281-1023; phone: 212-417-7000; www.brookfield.com

(millions)
 Total assets managed worldwide \$666,146
 Total worldwide institutional assets \$391,551
 Total U.S. client assets \$101,362
 Total U.S. institutional client assets \$86,907
 Total U.S. RIA assets \$3,990
 Total U.S. tax-exempt assets \$65,259
 Total U.S. institutional tax-exempt \$65,259
 Internally managed \$65,259

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX
 Equity 3%
 Equity real estate 42%
 Private equity 21%
 Other 34%
 Other type: *Infrastructure, multiasset*

INVESTMENT STRATEGIES
 Global equity, active \$2,024
 Global/non-U.S. bond, active \$196
 Equity real estate, U.S. \$5,973
 Equity real estate, non-U.S. \$21,685
 Timber \$60

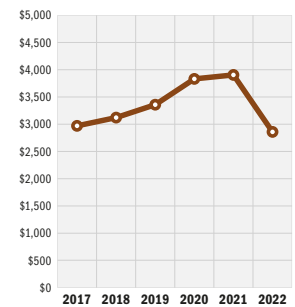
Managers of LDI strategies

Total worldwide assets as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Legal & General Investment	\$562,026
2	Insight Investment	\$469,603
3	BlackRock	\$345,942
4	NISA Investment	\$211,542
5	PIMCO	\$167,411
6	Mercer	\$158,660
7	Aegon Asset Mgmt.	\$134,470
8	J.P. Morgan Asset & Wealth	\$89,755
9	Schroders	\$73,100
10	Wellington Mgmt.	\$60,311

Asset growth (billions)



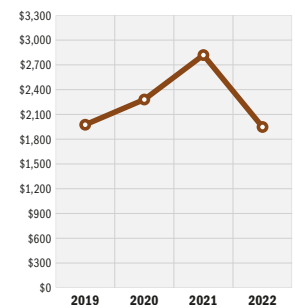
Managers of LDI strategies for retirement plans

Total worldwide assets as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Legal & General Investment	\$562,026
2	Insight Investment	\$453,888
3	NISA Investment	\$205,762
4	Mercer	\$158,660
5	PIMCO	\$135,345
6	Schroders	\$73,100
7	Aegon Asset Mgmt.	\$41,082
8	Franklin Templeton	\$32,851
9	Dodge & Cox	\$29,929
10	Russell Investments	\$22,600

Asset growth (billions)



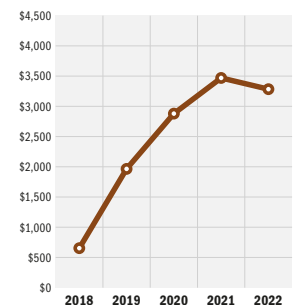
Managers of ESG mandates

Total worldwide assets as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	BlackRock	\$586,497
2	AXA Investment	\$522,059
3	Legal & General Investment	\$401,298
4	Amundi	\$280,998
5	State Street Global	\$244,200
6	Aviva Investors	\$98,079
7	Robeco	\$96,704
8	Northern Trust Asset Mgmt.	\$92,914
9	BNP Paribas Asset Mgmt.	\$73,490
10	IFM Investors	\$69,484

Asset growth (billions)



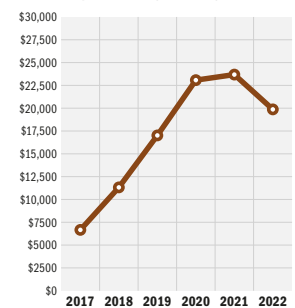
Managers of assets under ESG principles

Total worldwide assets as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	J.P. Morgan Asset & Wealth	\$2,289,349
2	Capital Group	\$2,175,965
3	Nuveen	\$1,090,174
4	Amundi	\$853,339
5	AXA Investment	\$719,017
6	Schroders	\$712,000
7	Brookfield Asset Mgmt.	\$666,146
8	BlackRock	\$586,497
9	New York Life Investments	\$570,583
10	MFS Investment	\$547,578

Asset growth (billions)



The Largest Money Managers

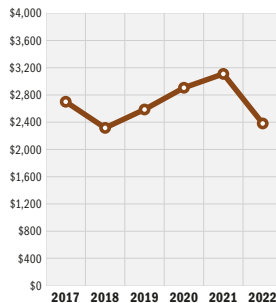
Managers of active U.S. equity

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	T. Rowe Price Associates	\$487,591
2	Fidelity Investments	\$319,843
3	Capital Group	\$260,622
4	Dimensional Fund Advisors	\$150,671
5	Nuveen	\$74,909
6	Dodge & Cox	\$70,220
7	MFS Investment	\$63,972
8	Prudential Financial	\$60,850
9	Franklin Templeton	\$59,264
10	Victory Capital	\$56,397

Asset growth (billions)



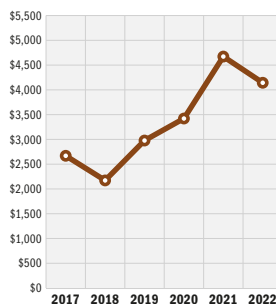
Managers of passive U.S. equity

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Vanguard Group	\$1,332,266
2	BlackRock	\$976,478
3	Geode Capital Mgmt.	\$697,818
4	State Street Global	\$440,186
5	Northern Trust Asset Mgmt.	\$221,852
6	BNY Mellon	\$112,379
7	RhumbLine Advisers	\$71,381
8	Morgan Stanley Inv. Mgmt.	\$70,513
9	Principal Global Investors	\$49,999
10	Nuveen	\$39,711

Asset growth (billions)



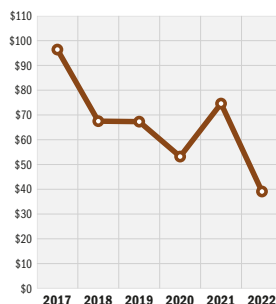
Managers of enhanced index U.S. equity

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	T. Rowe Price Associates	\$20,376
2	PIMCO	\$5,654
3	Legal & General Investment	\$4,031
4	J.P. Morgan Asset & Wealth	\$2,783
5	MFS Investment	\$1,517
6	Allspring Global Investments	\$1,386
7	Voya Investment Mgmt.	\$1,045
8	Franklin Templeton	\$990
9	TWIN Capital	\$596
10	Federated Hermes	\$275

Asset growth (billions)



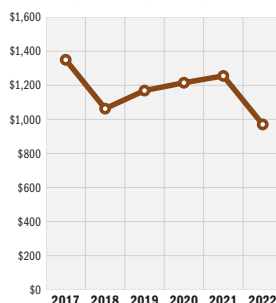
Managers of active non-U.S. equity

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Dimensional Fund Advisors	\$126,547
2	Fidelity Investments	\$92,691
3	Capital Group	\$79,612
4	MFS Investment	\$44,684
5	Baillie Gifford Overseas	\$43,498
6	Arrowstreet Capital	\$37,671
7	Nuveen	\$34,457
8	J.P. Morgan Asset & Wealth	\$33,225
9	Acadian Asset Mgmt.	\$31,755
10	Mondrian Investment	\$28,182

Asset growth (billions)



Continued from Page 31

Buyout funds	\$14,143
Infrastructure	\$20,191
Mezzanine debt	\$987
REITs	\$1,340
ESG INVESTING	
Total	\$65,259

WORLDWIDE ASSETS UNDER MANAGEMENT	
Mutual fund assets	\$1,630
U.S. 1940 Investment Co. Act	\$1,630
ESG investing	\$666,146

DEFINED CONTRIBUTION ASSETS	
U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$101
Internally managed	\$101

WORKFORCE	
Total number of employees	195,000

16 Capital Group

333 S. Hope St., Los Angeles, CA 90071; phone: 213-486-9200; www.capitalgroup.com

(millions)	
Total assets managed worldwide	\$2,175,965
Total worldwide institutional assets	\$753,026
Total U.S. client assets	\$2,121,783
Total U.S. institutional client assets	\$746,012
Total U.S. tax-exempt assets	\$1,280,234
Total U.S. institutional tax-exempt	\$513,351
Internally managed	\$513,351

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX	
Equity	73%
Fixed income	20%
Cash	7%

INVESTMENT STRATEGIES	
U.S. equity, active	\$260,622
Non-U.S. equity, active	\$79,612
Global equity, active	\$34,120
U.S. bond, active	\$91,137
Global/non-U.S. bond, active	\$11,900
Cash	\$35,960
LDI strategies	\$10,359

ESG INVESTING	
Total	\$513,351

WORLDWIDE ASSETS UNDER MANAGEMENT	
Mutual fund assets	\$2,058,957
U.S. 1940 Investment Co. Act	\$2,058,957
LDI strategies	\$10,698
Managed for retirement plans	\$10,698
ESG investing	\$2,175,965

DEFINED CONTRIBUTION ASSETS	
U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$483,269
Internally managed	\$483,269

WORKFORCE	
Total number of employees	5,003
Percent employee owned	100%
Chief executive officer: Timothy D. Armour	
U.S. client contacts: Walt Best, Chantal Manseau	

41 Columbia Threadneedle Investments

290 Congress St., Boston, MA 02210; phone: 617-385-9840; www.columbiathreadneedle.com

(millions)	
Total assets managed worldwide	\$585,161
Total worldwide institutional assets	\$265,521
Total U.S. client assets	\$361,548
Total U.S. institutional client assets	\$106,813
Total U.S. tax-exempt assets	\$24,313
Total U.S. institutional tax-exempt	\$19,233
Assigned to external managers	\$5,409
Internally managed	\$13,824

WORLDWIDE ASSETS UNDER MANAGEMENT	
Hedge fund assets	\$1,334
Mutual fund assets	\$294,500
U.S. 1940 Investment Co. Act	\$241,950
Sponsored ETFs/ETNs	\$1,300
Investment outsourcing mandates	\$122,120
LDI strategies	\$28,226
Proprietary stable value	\$3,896

ESG investing	\$27,286
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WORKFORCE	
Total number of employees	2,842
Number of U.S.-based employees	1,224
Number of cybersecurity professionals	150

PERCENT U.S.-BASED FEMALE EMPLOYEES	
Total	38%
Senior management	17%
Investment	18%

PERCENT U.S.-BASED MINORITY EMPLOYEES	
Total	19%
Senior management	12%
Investment	23%

Parent company: Ameriprise Financial Inc.
 Chief executive officer: Ted Truscott
 Chief investment officer: William Davies
 U.S. client contact: Francine Asselta

22 Dimensional Fund Advisors LP

6300 Bee Cave Road, Building One, Austin, TX 78746; phone: 512-306-7400; www.dfafunds.com

(millions)	
Total assets managed worldwide	\$583,714
Total worldwide institutional assets	\$583,714
Total U.S. client assets	\$493,931
Total U.S. institutional client assets	\$493,931
Total U.S. tax-exempt assets	\$375,908
Total U.S. institutional tax-exempt	\$375,908
Internally managed	\$375,908

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX	
Equity	82%
Fixed income	17%
Other	1%
Other type: Commodities	

INVESTMENT STRATEGIES	
U.S. equity, active	\$150,671
U.S. equity, passive	\$8,900
U.S. equity, enhanced index	\$216
Non-U.S. equity, active	\$126,547
Global equity, active	\$22,895
U.S. bond, active	\$46,837
Global/non-U.S. bond, active	\$18,352
Commodities	\$1,490

ACTIVE U.S. EQUITY STRATEGIES	
GROWTH	
Large-cap	\$2,335
Small-cap	\$807

VALUE	
Large-cap	\$25,893
Smidcap	\$12,587
Small-cap	\$14,523

CORE	
Large-cap	\$8,653
Small-cap	\$20,227
Broad-market	\$65,645

PASSIVE U.S. EQUITY STRATEGIES	
CORE	
Large-cap	\$8,900
REITs	\$17,144

NON-U.S. STRATEGIES	
Emerging markets equity	\$46,832
Emerging markets equity mandates ..	\$46,832

FIXED-INCOME STRATEGIES	
Core	\$10,348
Inflation-protected securities	\$10,463

WORLDWIDE ASSETS UNDER MANAGEMENT	
Mutual fund assets	\$503,194
U.S. 1940 Investment Co. Act	\$488,575
Sponsored ETFs/ETNs	\$72,249
Actively managed	\$72,249
LDI strategies	\$412
Factor-based strategies	\$574,192
ESG investing	\$75,901
ESG mandates	\$22,786

DEFINED CONTRIBUTION ASSETS	
U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$42,216
Internally managed	\$42,216

Continued on Page 34

Pensions&Investments

DEFINED CONTRIBUTION WEST

OCTOBER 22-24, 2023
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Ali Khawar
Principal Deputy Assistant Secretary, U.S. Department of Labor Employee Benefits Security Administration

REGULATORY UPDATE AT DC WEST: The Next Wave of SECURE 2.0 Deadlines – Is Your Plan Ready?

The next wave of SECURE 2.0 deadlines will be just 2-months away during P&I's DC West Conference, October 22-24. Significant changes which directly impact DC plans are underway in an attempt to make the January 1, 2024 deadline. To help navigate the complex landscape, please join Principal Deputy Assistant Secretary of the Employee Benefits Security Administration (EBSA), Ali Khawar, who will provide guidance on what steps plan sponsors need to be taking right now.

In an extended Q&A session, Mark Iwry, who helped develop some of the important tax code provisions, will join Ali Khawar on stage to help provide attendees with a comprehensive understanding of the new changes and opportunities under ERISA. You'll learn how to effectively leverage the tax qualification and tax credit rules aimed at fostering a financially secure future for both your organization and your workforce.



Mark Iwry
*Former Senior Advisor to the Secretary of the Treasury
Currently Non-Resident Senior Fellow, Brookings Institution
Visiting Scholar, Wharton School, University of Pennsylvania*

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Contact Kimba Jackson at kjackson@pionline.com | 978.317.5032 or Henry Larson at henry.larson@pionline.com | 763.370.9522 for more details and availability.

*Complimentary registration for Plan Sponsors only. All registration requests are subject to verification. P&I reserves the right to refuse any registrations not meeting our qualifications. Questions? Please contact Kathleen Stevens kstevens@pionline.com | 843.666.9849 or Andy Jenkins andyjenkins@pionline.com | 703.725.6161.

The Largest Money Managers

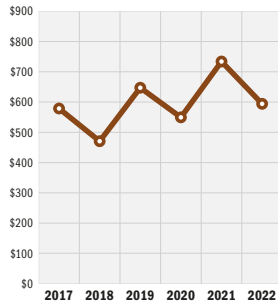
Managers of passive non-U.S. equity

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	BlackRock	\$162,162
2	Geode Capital Mgmt.	\$138,221
3	State Street Global	\$118,309
4	Vanguard Group	\$74,230
5	Northern Trust Asset Mgmt.	\$66,352
6	BNY Mellon	\$7,883
7	Nuveen	\$5,819
8	Legal & General Investment	\$5,792
9	RhumbLine Advisers	\$5,113
10	Voya Investment Mgmt.	\$2,660

Asset growth (billions)



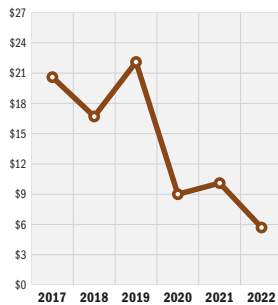
Managers of enhanced index non-U.S. equity

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Legal & General Investment	\$2,541
2	PIMCO	\$2,325
3	MFS Investment	\$797
4	Allspring Global Investments	\$33
5	T. Rowe Price Associates	\$8

Asset growth (billions)



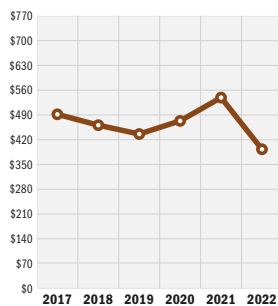
Managers of active global equity

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Arrowstreet Capital	\$52,837
2	Capital Group	\$34,120
3	Nuveen	\$26,349
4	Wellington Mgmt.	\$25,250
5	Dimensional Fund Advisors	\$22,895
6	American Century	\$21,105
7	BlackRock	\$16,994
8	Artisan Partners	\$12,720
9	Invesco	\$10,861
10	BNY Mellon	\$10,470

Asset growth (billions)



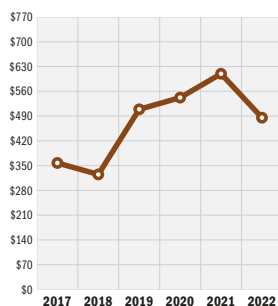
Managers of passive global equity

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	State Street Global	\$229,769
2	BlackRock	\$227,666
3	BNY Mellon	\$17,132
4	Legal & General Investment	\$4,059
5	RhumbLine Advisers	\$2,437
6	Vanguard Group	\$1,617
7	Morgan Stanley Inv. Mgmt.	\$1,127
8	Geode Capital Mgmt.	\$790
9	Invesco	\$568
10	AllianceBernstein	\$232

Asset growth (billions)



Continued from Page 32

WORKFORCE

Total number of employees 1,539
 Primary custodian: State Street
 Chief executive officers: David Butler, Gerard O'Reilly
 Chief investment officer: Gerard O'Reilly
 DC client contact: Ashish Shrestha

29 DWS Group GmbH & Co. KGaA

875 Third Ave., 26th Floor, New York, NY 10022; phone: 212-454-6260; www.dws.com

(millions)
 Total assets managed worldwide \$876,790
 Total worldwide institutional assets \$419,758
 Total U.S. client assets \$212,396
 Total U.S. institutional client assets \$145,987
 Total U.S. tax-exempt assets \$31,059
 Total U.S. institutional tax-exempt \$31,059
 Internally managed \$31,059

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX

Equity 22%
 Fixed income 3%
 Equity real estate 70%
 Private equity 1%
 Cash 2%
 Other 2%

WORLDWIDE ASSETS UNDER MANAGEMENT

Mutual fund assets \$314,392
 U.S. 1940 Investment Co. Act \$87,318
 Sponsored ETFs/ETNs \$149,186
 LDI strategies \$21,390
 Managed for retirement plans \$21,390
 ESG investing \$124,887

WORKFORCE

Total number of employees 3,662
 Number of U.S.-based employees 850

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total 40%
 Senior management 44%
 Investment 25%

PERCENT U.S.-BASED MINORITY EMPLOYEES

Total 33%
 Senior management 15%
 Investment 32%

Primary custodian: State Street

Parent company: Deutsche Bank AG

Chief executive officer: Stefan Hoops

Chief investment officer: Bjorn Jesch

U.S. client contacts: Dirk Goergen, JJ Wilczewski,

Laura Gaylor, Amanda Rebello

20 Federated Hermes Inc.

1001 Liberty Ave., 23rd Floor, Pittsburgh, PA 15222-3779; phone: 800-245-0242; www.federatedinvestors.com

(millions)
 Total assets managed worldwide \$668,901
 Total worldwide institutional assets \$618,026
 Total U.S. client assets \$620,048
 Total U.S. institutional client assets \$587,777
 Total U.S. RIA assets \$11,102
 Total U.S. tax-exempt assets \$205,584
 Total U.S. institutional tax-exempt \$200,225
 Internally managed \$200,225

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX

Equity 10%
 Fixed income 28%
 Cash 62%

INVESTMENT STRATEGIES

U.S. equity, active \$16,211
 U.S. equity, enhanced index \$275
 Non-U.S. equity, active \$2,430
 Global equity, active \$289
 U.S. bond, active \$56,767
 Global/non-U.S. bond, active \$191
 Cash \$124,062

ACTIVE U.S. EQUITY STRATEGIES

GROWTH
 Large-cap \$1,137

Midcap \$4,425
 Small-cap \$2,702

VALUE

Large-cap \$6,919
 Small-cap \$139
 Broad-market \$7

CORE

Small-cap \$640
 Broad-market \$242

NON-U.S. STRATEGIES

Emerging markets equity \$33
 Emerging markets debt \$10

FIXED-INCOME STRATEGIES

Core \$16,463
 Core-plus \$6,851
 High-yield \$5,860
 High-yield mandates \$1,026
 Inflation-protected securities \$102
 Stable value \$3,283
 Mortgages (whole loans) \$294
 LDI strategies \$2,539

WORLDWIDE ASSETS UNDER MANAGEMENT

Mutual fund assets \$424,487
 U.S. 1940 Investment Co. Act \$397,631
 Sponsored ETFs/ETNs \$75
 Actively managed \$75
 Institutional \$75
 LDI strategies \$2,539
 Proprietary stable value \$3,283
 Factor-based strategies \$6,184

DEFINED CONTRIBUTION ASSETS

U.S. INSTITUTIONAL TAX-EXEMPT

Total \$51,650
 Internally managed \$51,650

WORKFORCE

Total number of employees 1,961
 Number of U.S.-based employees 1,422
 Percent employee owned 19%

Primary custodian: State Street

Chief executive officer: John B. Fisher

Chief investment officers: Robert J. Ostrowski,

Stephen F. Auth, Deborah A. Cunningham

Client contacts: Paul A. Uhlman, Stephen Cronin,

Amy Michalyszyn

4 Fidelity Investments

245 Summer St., Boston, MA 02210; phone: 800-343-3548; www.fidelity.com

(millions)
 Total assets managed worldwide \$3,655,574
 Total worldwide institutional assets \$1,731,599
 Total U.S. client assets \$3,510,819
 Total U.S. institutional client assets \$1,731,599
 Total U.S. tax-exempt assets \$2,216,191
 Total U.S. institutional tax-exempt \$1,063,114
 Assigned to external managers \$364,897
 Internally managed \$698,217

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX

Equity 60%
 Fixed income 29%
 Cash 11%

INVESTMENT STRATEGIES

U.S. equity, active \$319,843
 U.S. equity, passive \$21
 Global equity, active \$4,436
 U.S. bond, active \$112,932
 U.S. bond, passive \$88,022
 Global/non-U.S. bond, active \$1,749
 Global/non-U.S. bond, passive \$2,207
 Cash \$76,316

ACTIVE U.S. EQUITY STRATEGIES

GROWTH

Large-cap \$191,088
 Midcap \$575
 Small-cap \$2,425

VALUE

Large-cap \$23,051
 Midcap \$18,181
 Small-cap \$1,480

CORE

Large-cap \$13,037

The Largest Money Managers

Midcap.....	\$4,320
Small-cap.....	\$9,735
NON-U.S. STRATEGIES	
Emerging markets equity.....	\$28,963
Emerging markets equity mandates ...	\$28,963
High-yield.....	\$11,682
Inflation-protected securities.....	\$14,050
Stable value.....	\$38,629
LDI strategies.....	\$35,115

WORLDWIDE ASSETS UNDER MANAGEMENT	
Mutual fund assets.....	\$3,235,885
U.S. 1940 Investment Co. Act.....	\$3,141,676
Sponsored ETFs/ETNs.....	\$32,607
Actively managed.....	\$4,803
Investment outsourcing mandates.....	\$14,218
LDI strategies.....	\$35,115
Proprietary stable value.....	\$43,315
Factor-based strategies.....	\$4,171

DEFINED CONTRIBUTION ASSETS	
U.S. INSTITUTIONAL TAX-EXEMPT	
Total.....	\$987,774
Internally managed.....	\$629,100

WORKFORCE
Total number of employees..... 68,000
Parent company: FMR LLC
Chief executive officer: Bart Grenier
Chief investment officer: Joe DeSantis
U.S. client contact: Casey Condron
DC client contact: Ted Madden

4 Franklin Templeton

1 Franklin Parkway, Building 970, 1st Floor, San Mateo, CA 94403; phone: 650-312-2000; www.franklintempleton.com

(millions)
Total assets managed worldwide..... \$1,387,686
Total worldwide institutional assets..... \$682,456
Total U.S. client assets..... \$993,086
Total U.S. institutional client assets..... \$413,335
Total U.S. tax-exempt assets..... \$298,921
Total U.S. institutional tax-exempt..... \$269,660
Internally managed..... \$269,660

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX	
Equity.....	27%
Fixed income.....	48%
Equity real estate.....	17%
Hedge funds.....	1%
Cash.....	1%
Other.....	6%
<i>Other type: Balanced</i>	

INVESTMENT STRATEGIES	
U.S. equity, active.....	\$59,264
U.S. equity, enhanced index.....	\$990
Non-U.S. equity, active.....	\$7,377
Global equity, active.....	\$6,998
U.S. bond, active.....	\$108,456
Global/non-U.S. bond, active.....	\$19,374
Equity real estate, U.S.....	\$31,108
Equity real estate, non-U.S.....	\$67
Hedge funds.....	\$1,852
Infrastructure.....	\$400
Convertible securities.....	\$166
Cash.....	\$2,655

ACTIVE U.S. EQUITY STRATEGIES	
GROWTH	
Large-cap.....	\$12,613
Midcap.....	\$352
Smidcap.....	\$414
Small-cap.....	\$4,698
Broad-market.....	\$1,566
VALUE	
Large-cap.....	\$15,814
Midcap.....	\$260
Smidcap.....	\$1
Small-cap.....	\$3,415
Broad-market.....	\$518

CORE	
Large-cap.....	\$4,037
Midcap.....	\$1,359
Small-cap.....	\$680
Low-volatility strategies.....	\$5,234

NON-U.S. STRATEGIES	
Emerging markets equity.....	\$1,098
Emerging markets equity mandates.....	\$1,098

Emerging markets debt.....	\$1,305
Emerging markets debt mandates.....	\$298

FIXED-INCOME STRATEGIES	
Core.....	\$11,473
Core-plus.....	\$30,316
Unconstrained.....	\$7,640
High-yield.....	\$5,990
High-yield mandates.....	\$2,788
Inflation-protected securities.....	\$537
CDOs.....	\$278
Stable value.....	\$5,519
Mortgages (whole loans).....	\$162
Bank loans.....	\$133
LDI strategies.....	\$36,758

WORLDWIDE ASSETS UNDER MANAGEMENT	
Hedge fund assets.....	\$11,681
Hedge fund-of-fund assets.....	\$1,410
Mutual fund assets.....	\$870,034
U.S. 1940 Investment Co. Act.....	\$530,884
Sponsored ETFs/ETNs.....	\$13,318
Actively managed.....	\$5,800
Investment outsourcing mandates.....	\$15,779
LDI strategies.....	\$51,337
Managed for retirement plans.....	\$32,851
Proprietary stable value.....	\$5,519

OVERLAY STRATEGIES	
U.S. INSTITUTIONAL TAX-EXEMPT ASSETS (NOTIONAL VALUE)	
Total.....	\$990

DEFINED CONTRIBUTION ASSETS	
U.S. INSTITUTIONAL TAX-EXEMPT	
Total.....	\$21,624
Internally managed.....	\$21,624

WORKFORCE
Total number of employees..... 9,400
Parent company: Franklin Resources Inc.
Chief executive officer: Jenny Johnson
Client contact: Michael Foley

12 Geode Capital Management

100 Summer St., 12th Floor, Boston, MA 02110; phone: 800-777-6757; www.geodecapital.com

(millions)
Total assets managed worldwide..... \$866,352
Total worldwide institutional assets..... \$866,352
Total U.S. client assets..... \$842,728
Total U.S. institutional client assets..... \$842,728
Total U.S. tax-exempt assets..... \$842,721
Total U.S. institutional tax-exempt..... \$842,721
Internally managed..... \$842,721

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS	
ASSET MIX	
Equity.....	99%
Other.....	1%
<i>Other type: Commodities, equity option overlay</i>	
INVESTMENT STRATEGIES	
U.S. equity, passive.....	\$697,818
Non-U.S. equity, passive.....	\$138,221
Global equity, passive.....	\$790
Commodities.....	\$5,687

PASSIVE U.S. EQUITY STRATEGIES	
GROWTH	
Large-cap.....	\$13,560
Midcap.....	\$523
Small-cap.....	\$320
VALUE	
Large-cap.....	\$16,503
Midcap.....	\$792
Smidcap.....	\$226
Small-cap.....	\$851
Broad-market.....	\$1,787
CORE	
Large-cap.....	\$473,583
Midcap.....	\$25,226
Smidcap.....	\$32,824
Small-cap.....	\$18,887
Broad-market.....	\$92,883
Low-volatility strategies.....	\$3,435
REITs.....	\$2,569

NON-U.S. STRATEGIES	
Emerging markets equity.....	\$15,168

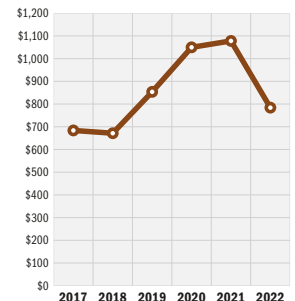
Managers of active U.S. large-cap growth equity

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	T. Rowe Price Associates	\$403,257
2	Fidelity Investments	\$191,088
3	Loomis, Sayles	\$29,638
4	Prudential Financial	\$18,309
5	Nuveen	\$15,911
6	Franklin Templeton	\$12,613
7	Sustainable Growth Advisers	\$10,142
8	AllianceBernstein	\$9,195
9	Polen Capital	\$8,791
10	Wellington Mgmt.	\$8,661

Asset growth (billions)



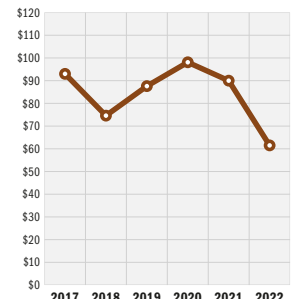
Managers of active U.S. midcap growth equity

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	T. Rowe Price Associates	\$20,276
2	Artisan Partners	\$7,525
3	MFS Investment	\$5,822
4	Federated Hermes	\$4,425
5	TimesSquare Capital	\$3,540
6	Baird Equity Asset Mgmt.	\$2,491
7	Westfield Capital	\$1,953
8	Invesco	\$1,792
9	Voya Investment Mgmt.	\$1,761
10	J.P. Morgan Asset & Wealth	\$1,518

Asset growth (billions)



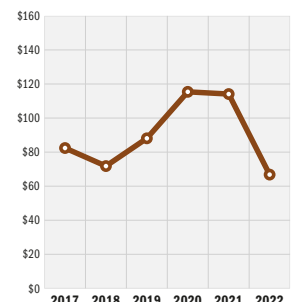
Managers of active U.S. small-cap growth equity

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	T. Rowe Price Associates	\$10,628
2	Franklin Templeton	\$4,698
3	Invesco	\$3,970
4	Emerald Advisers	\$3,419
5	AllianceBernstein	\$3,298
6	Brown Capital	\$2,975
7	Federated Hermes	\$2,702
8	Fidelity Investments	\$2,425
9	Hood River Capital	\$2,304
10	Artisan Partners	\$2,183

Asset growth (billions)



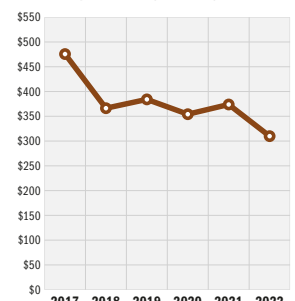
Managers of active U.S. large-cap value equity

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Dodge & Cox	\$70,220
2	MFS Investment	\$27,819
3	Dimensional Fund Advisers	\$25,893
4	Fidelity Investments	\$23,051
5	T. Rowe Price Associates	\$22,299
6	Franklin Templeton	\$15,814
7	Invesco	\$9,126
8	Principal Global Investors	\$8,954
9	Boston Partners	\$8,578
10	Nuveen	\$8,537

Asset growth (billions)



Continued on Page 36

The Largest Money Managers

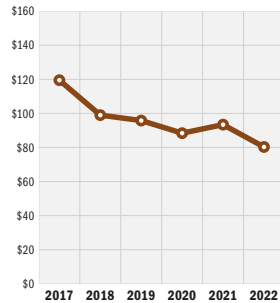
Managers of active U.S. midcap value equity

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Victory Capital	\$24,342
2	Fidelity Investments	\$18,181
3	MFS Investment	\$6,995
4	Allspring Global Investments	\$6,064
5	American Century	\$5,537
6	T. Rowe Price Associates	\$5,303
7	Ceredex Value Advisors	\$3,134
8	Boston Partners	\$2,643
9	Macquarie Asset Mgmt.	\$902
10	Cooke & Bieler	\$857

Asset growth (billions)



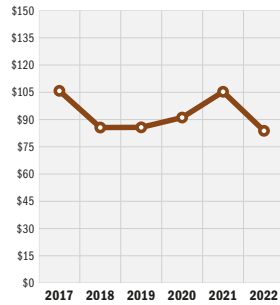
Managers of active U.S. small-cap value equity

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Dimensional Fund Advisors	\$14,523
2	Victory Capital	\$11,740
3	Fisher Investments	\$5,333
4	Franklin Templeton	\$3,415
5	Allspring Global Investments	\$3,236
6	T. Rowe Price Associates	\$3,039
7	Systematic Financial	\$2,862
8	American Century	\$2,443
9	Kennedy Capital	\$2,426
10	Channing Capital	\$2,213

Asset growth (billions)



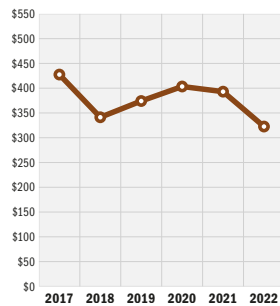
Managers of emerging markets equity

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Dimensional Fund Advisors	\$46,832
2	Fidelity Investments	\$28,963
3	BlackRock	\$25,848
4	J.P. Morgan Asset & Wealth	\$21,083
5	State Street Global	\$17,116
6	Geode Capital Mgmt.	\$15,168
7	Northern Trust Asset Mgmt.	\$11,763
8	Vanguard Group	\$10,429
9	Baillie Gifford Overseas	\$10,315
10	Nuveen	\$9,860

Asset growth (billions)



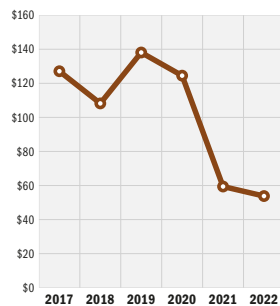
Managers of low-volatility equity strategies

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Morgan Stanley Inv. Mgmt.	\$11,164
2	Franklin Templeton	\$5,234
3	Acadian Asset Mgmt.	\$5,012
4	Martingale Asset Mgmt.	\$4,038
5	J.P. Morgan Asset & Wealth	\$3,444
6	Geode Capital Mgmt.	\$3,435
7	State Street Global	\$3,020
8	Neuberger Berman	\$2,363
9	MFG Asset Mgmt.	\$2,222
10	Allspring Global Investments	\$1,865

Asset growth (billions)



Continued from Page 35

WORLDWIDE ASSETS UNDER MANAGEMENT

Factor-based strategies	\$82,689
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WORKFORCE

Total number of employees	185
Number of U.S.-based employees	100
Number of cybersecurity professionals	1
Percent employee owned	10%

Parent company: Geode Capital Holdings LLC

Chief executive officer: David Lane

Chief investment officer: Diane Hsiung

U.S. client contacts: Bill Miller, Bill Gibbs

6 The Goldman Sachs Group Inc.

200 West St., New York, NY 10282; phone: 212-902-1000; www.gs.com

(millions)	
Total assets managed worldwide	\$2,547,000
Total worldwide institutional assets	\$1,441,249
Total U.S. client assets	\$1,806,000
Total U.S. institutional client assets	\$964,536
Total U.S. tax-exempt assets	\$281,929
Total U.S. institutional tax-exempt	\$264,073
Assigned to external managers	\$76,148
Internally managed	\$187,925

21 Invesco

Midtown Union, 1331 Spring St. N.W., Atlanta, GA 30309; phone: 404-479-1095; www.invesco.com

(millions)	
Total assets managed worldwide	\$1,409,204
Total worldwide institutional assets	\$606,715
Total U.S. client assets	\$959,398
Total U.S. institutional client assets	\$403,016
Total U.S. RIA assets	\$360,000
Total U.S. tax-exempt assets	\$328,565
Total U.S. institutional tax-exempt	\$222,532
Assigned to external managers	\$33,688
Internally managed	\$188,844

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX	
Equity	43%
Fixed income	32%
Equity real estate	19%
Private equity	1%
Cash	4%
Other	1%

Other type: Commodities

INVESTMENT STRATEGIES	
U.S. equity, active	\$31,940
U.S. equity, passive	\$21,598
U.S. equity, enhanced index	\$24
Non-U.S. equity, active	\$16,035
Non-U.S. equity, passive	\$509
Global equity, active	\$10,861
Global equity, passive	\$568
U.S. bond, active	\$55,716
Global/non-U.S. bond, active	\$4,948
Equity real estate, U.S.	\$31,131
Equity real estate, non-U.S.	\$2,666
Real estate debt	\$24
Venture capital	\$25
Infrastructure	\$13
Private equity, U.S.	\$648
Distressed debt	\$694
Mezzanine debt	\$2,270
MLPs	\$253
Commodities	\$1,747
Convertible securities	\$74
Cash	\$7,102

ACTIVE U.S. EQUITY STRATEGIES

GROWTH	
Large-cap	\$3,994
Midcap	\$1,792
Small-cap	\$3,970
Broad-market	\$1,577

VALUE	
Large-cap	\$9,126
Midcap	\$659
Small-cap	\$611
Broad-market	\$1,577

CORE	
Large-cap	\$2,675

Midcap	\$826
Small-cap	\$305
Broad-market	\$4,829

PASSIVE U.S. EQUITY STRATEGIES

GROWTH	
Large-cap	\$1,134
Midcap	\$2
Smidcap	\$239
Small-cap	\$33

VALUE	
Large-cap	\$1,013
Midcap	\$259
Smidcap	\$272
Small-cap	\$1

CORE

Large-cap	\$7,158
Midcap	\$1,115
Small-cap	\$284
Broad-market	\$10,088
Low-volatility strategies	\$225
REITs	\$1,891

NON-U.S. STRATEGIES

Emerging markets equity	\$8,530
Emerging markets equity mandates	\$8,530
Emerging markets debt	\$11
Emerging markets debt mandates	\$11

FIXED-INCOME STRATEGIES

Core	\$1,997
Core-plus	\$865
Unconstrained	\$42
High-yield	\$763
High-yield mandates	\$763
Inflation-protected securities	\$29
Stable value	\$42,817
Bank loans	\$1,224
Risk-parity strategies	\$9,470

ESG INVESTING

Total	\$1,131
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WORLDWIDE ASSETS UNDER MANAGEMENT

Mutual fund assets	\$581,812
U.S. 1940 Investment Co. Act	\$435,874
Sponsored ETFs/ETNs	\$394,413
Actively managed	\$10,427
Institutional	\$52,374
Proprietary stable value	\$75,638
Factor-based strategies	\$136,997
Digital assets/cryptocurrency	\$74
ESG investing	\$76,600
ESG mandates	\$18,400

DEFINED CONTRIBUTION ASSETS

U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$130,834
Internally managed	\$98,013

WORKFORCE

Total number of employees	8,600
Number of U.S.-based employees	3,295
Number of cybersecurity professionals	120
Percent employee owned	7%

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total	40%
Senior management	41%
Investment	18%

PERCENT U.S.-BASED MINORITY EMPLOYEES

Total	38%
Senior management	18%
Investment	29%

Parent company: Invesco Ltd.

Chief executive officer: Andrew Schlossberg

U.S. client contact: Stephen Wagenbach

DC client contact: John Galateria

28 Kohlberg Kravis Roberts & Co. LP

30 Hudson Yards, New York, NY 10001; phone: 212-750-8300; www.kkr.com

(millions)	
Total assets managed worldwide	\$503,897
Total worldwide institutional assets	\$458,165
Total U.S. client assets	\$349,824
Total U.S. institutional client assets	\$316,630
Total U.S. tax-exempt assets	\$69,056
Total U.S. institutional tax-exempt	\$63,744
Internally managed	\$63,744

CORE	
Large-cap	\$2,675

The Largest Money Managers

WORLDWIDE ASSETS UNDER MANAGEMENT

ESG investing \$3,852

WORKFORCE

Total number of employees 2,496
Number of U.S.-based employees 1,557

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total 46%
Senior management 26%
Investment 36%

Primary custodian: J.P. Morgan

Chief executive officers: Joe Bae, Scott Nuttall

U.S. client contact: Amy Lesch

9 Legal & General Investment Management (Holdings) Ltd.

1 Coleman St., London EC2R 5AA England; phone: 44-20-3124-3000; www.lgim.com

(millions)
Total assets managed worldwide \$1,444,393
Total worldwide institutional assets \$1,376,967
Total U.S. client assets \$136,457
Total U.S. institutional client assets \$136,457
Total U.S. RIA assets \$6,096
Total U.S. tax-exempt assets \$127,931
Total U.S. institutional tax-exempt \$127,931
Internally managed \$127,931

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX

Equity 33%
Fixed income 66%
Other 1%
Other type: Derivatives

INVESTMENT STRATEGIES

U.S. equity, passive \$22,865
U.S. equity, enhanced index \$4,031
Non-U.S. equity, passive \$5,792
Non-U.S. equity, enhanced index \$2,541
Global equity, passive \$4,059
U.S. bond, active \$83,219
U.S. bond, passive \$1,494
Global/non-U.S. bond, active \$144

PASSIVE U.S. EQUITY STRATEGIES

GROWTH

Large-cap \$707
Midcap \$59
Small-cap \$28

CORE

Large-cap \$17,643
Midcap \$1,224
Small-cap \$2,836
Broad-market \$367

NON-U.S. STRATEGIES

Emerging markets equity \$995
Emerging markets equity mandates \$995

FIXED-INCOME STRATEGIES

Core \$82,988
Core-plus \$1,807
High-yield \$144
High-yield mandates \$144
LDI strategies \$47,122

ESG INVESTING

Total \$9,223
ESG mandates \$9,223
Equity, passive \$9,223

WORLDWIDE ASSETS UNDER MANAGEMENT

Mutual fund assets \$517,363
U.S. 1940 Investment Co. Act \$32,135
Sponsored ETFs/ETNs \$10,309
Investment outsourcing mandates \$6,367
LDI strategies \$562,026
Managed for retirement plans \$562,026
Factor-based strategies \$57,738
ESG investing \$401,298
ESG mandates \$401,298

OVERLAY STRATEGIES

U.S. INSTITUTIONAL TAX-EXEMPT ASSETS (NOTIONAL VALUE)

Total \$49,481

DEFINED CONTRIBUTION ASSETS

U.S. INSTITUTIONAL TAX-EXEMPT

Total \$8,140
Internally managed \$8,140

WORKFORCE

Total number of employees 2,521
Number of U.S.-based employees 252

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total 31%
Senior management 19%
Investment 8%

PERCENT U.S.-BASED MINORITY EMPLOYEES

Total 30%
Senior management 13%
Investment 38%

Parent company: Legal & General Group

Chief executive officer: Michelle Sprimgeour

Chief investment officer: Sonja Laud

U.S. client contact: Donald Andrews

DC client contact: Rob Capone

The assets of the following subsidiaries or affiliates are included in the figures above:

Legal & General Investment Management

America Inc.: total assets: \$201.78 billion; U.S. institutional, tax-exempt assets: \$127.93 billion; CIO: Jason Shoup; client contact: Donald Andrews, phone: 312-585-0380, email: donald.andrews@lgima.com

50 Loomis, Sayles & Co. LP

1 Financial Center, Boston, MA 02111; phone: 617-482-2450; www.loomissayles.com

(millions)
Total assets managed worldwide \$282,060
Total worldwide institutional assets \$222,198
Total U.S. client assets \$222,148
Total U.S. institutional client assets \$168,380
Total U.S. tax-exempt assets \$217,590
Total U.S. institutional tax-exempt \$164,655
Internally managed \$164,655

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX

Equity 22%
Fixed income 78%

INVESTMENT STRATEGIES

U.S. equity, active \$35,979
Global equity, active \$923
U.S. bond, active \$123,649
Global/non-U.S. bond, active \$4,103

ACTIVE U.S. EQUITY STRATEGIES

GROWTH

Large-cap \$29,638
Smidcap \$1,969
Small-cap \$1,569
Broad-market \$1,433

VALUE

Small-cap \$807

CORE

Smidcap \$563

NON-U.S. STRATEGIES

Emerging markets equity \$232
Emerging markets debt \$241
Emerging markets debt mandates \$241

FIXED-INCOME STRATEGIES

Core \$20,679
Core-plus \$42,873
High-yield \$7,021
High-yield mandates \$7,021
Inflation-protected securities \$1
Stable value \$17,546
Bank loans \$714
LDI strategies \$11,205

ESG INVESTING

Total \$42,871

WORLDWIDE ASSETS UNDER MANAGEMENT

Hedge fund assets \$49
Mutual fund assets \$103,669
U.S. 1940 Investment Co. Act \$75,120
Sponsored ETFs/ETNs \$37
Actively managed \$37
Institutional \$37
LDI strategies \$11,392
Managed for retirement plans \$11,347
Proprietary stable value \$17,546
ESG investing \$119,715

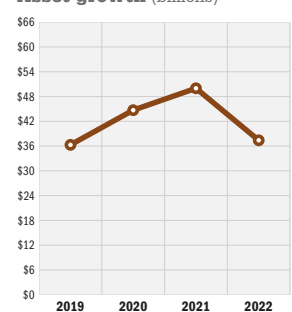
Managers of risk-parity strategies

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	PanAgora Asset Mgmt.	\$10,310
2	Invesco	\$9,470
3	AQR Capital Mgmt.	\$9,265
4	StepStone Group	\$6,723
5	J.P. Morgan Asset & Wealth	\$695
6	Neuberger Berman	\$615
7	Voya Investment Mgmt.	\$304
8	Morgan Stanley Inv. Mgmt.	\$26
9	AllianceBernstein	\$24

Asset growth (billions)



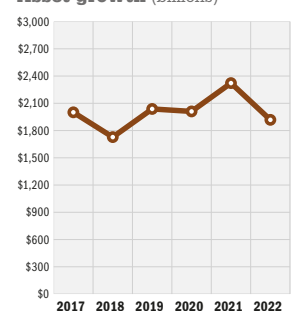
Managers of factor-based strategies

Total worldwide assets as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Dimensional Fund Advisors	\$574,192
2	BlackRock	\$280,367
3	State Street Global	\$201,564
4	Invesco	\$136,997
5	Geode Capital Mgmt.	\$82,689
6	AQR Capital Mgmt.	\$82,468
7	Northern Trust Asset Mgmt.	\$64,893
8	Legal & General Investment	\$57,738
9	Russell Investments	\$46,741
10	Charles Schwab Investment	\$42,745

Asset growth (billions)



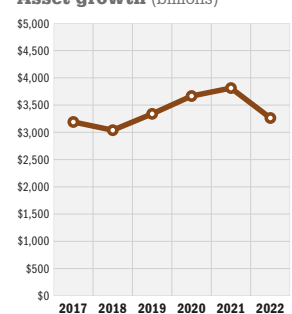
Managers of active U.S. bonds

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	PIMCO	\$275,624
2	NISA Investment	\$234,332
3	Prudential Financial	\$222,043
4	Nuveen	\$166,807
5	Loomis, Sayles	\$123,649
6	TCW Group	\$121,101
7	Fidelity Investments	\$112,932
8	Allspring Global Investments	\$112,073
9	Franklin Templeton	\$108,456
10	Wellington Mgmt.	\$98,497

Asset growth (billions)



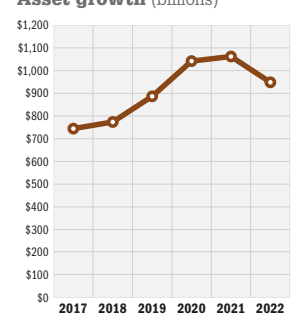
Managers of passive U.S. bonds

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Vanguard Group	\$333,260
2	State Street Global	\$220,215
3	BlackRock	\$165,595
4	Fidelity Investments	\$88,022
5	Northern Trust Asset Mgmt.	\$54,284
6	Morgan Stanley Inv. Mgmt.	\$23,252
7	BNY Mellon	\$20,574
8	Principal Global Investors	\$15,415
9	Payden & Rygel	\$8,177
10	RhumbLine Advisers	\$5,161

Asset growth (billions)



The Largest Money Managers

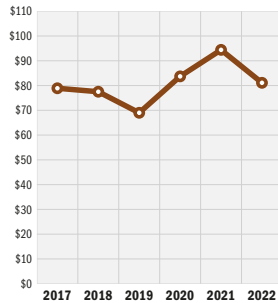
Managers of enhanced index U.S. bonds

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Baird Advisors	\$71,044
2	BlackRock	\$8,653
3	Neuberger Berman	\$1,382
4	T. Rowe Price Associates	\$36
5	Morgan Stanley Inv. Mgmt.	\$5

Asset growth (billions)



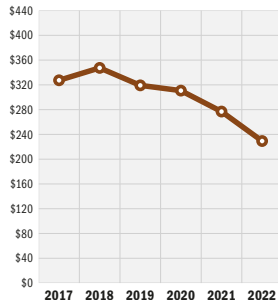
Managers of active global/non-U.S. bonds

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Wellington Mgmt.	\$23,098
2	PIMCO	\$20,147
3	Franklin Templeton	\$19,374
4	Dimensional Fund Advisors	\$18,352
5	Prudential Financial	\$15,046
6	Ares Mgmt.	\$13,422
7	Capital Group	\$11,900
8	Nuveen	\$10,236
9	J.P. Morgan Asset & Wealth	\$9,675
10	Principal Global Investors	\$8,925

Asset growth (billions)



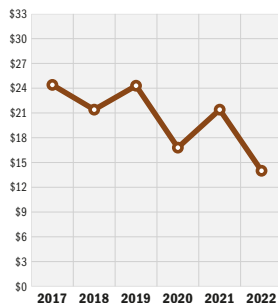
Managers of passive global/non-U.S. bonds

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	State Street Global	\$4,372
2	Vanguard Group	\$3,921
3	Fidelity Investments	\$2,207
4	BlackRock	\$1,825
5	BNY Mellon	\$1,481
6	Northern Trust Asset Mgmt.	\$100
7	J.P. Morgan Asset & Wealth	\$65
8	Yousif Capital	\$47
9	AllianceBernstein	\$3

Asset growth (billions)



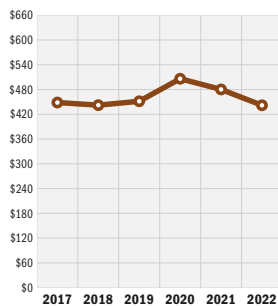
Managers of stable value assets

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Allspring Global Investments	\$61,531
2	Invesco	\$42,817
3	Fidelity Investments	\$38,629
4	T. Rowe Price Associates	\$38,074
5	Prudential Financial	\$27,561
6	Vanguard Group	\$27,242
7	PIMCO	\$23,585
8	Principal Global Investors	\$23,079
9	Empower Investments	\$22,212
10	BNY Mellon	\$22,139

Asset growth (billions)



Continued from Page 37

DEFINED CONTRIBUTION ASSETS

U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$28,051
Internally managed	\$28,051

WORKFORCE

Total number of employees	835
Number of U.S.-based employees	776
Number of cybersecurity professionals	12

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total	41%
Senior management	25%
Investment	26%

PERCENT U.S.-BASED MINORITY EMPLOYEES

Total	21%
Investment	24%

Primary custodian: State Street
 Parent company: Natixis Investment Managers
 Chief executive officer: Kevin Charleston
 Chief investment officer: David L. Waldman
 U.S. client contact: Maurice Leger
 DC client contacts: Christopher T. Perkin, Brian Hobin, Anne Schneidman Coleman

30 Macquarie Asset Management

50 Martin Place, Sydney NSW 2000 Australia; phone: 61-2-8232-3708; www.macquarie.com

(millions)	
Total assets managed worldwide	\$542,791
Total worldwide institutional assets	\$398,691
Total U.S. client assets	\$233,815
Total U.S. institutional client assets	\$110,545
Total U.S. tax-exempt assets	\$42,254
Total U.S. institutional tax-exempt	\$23,855
Assigned to external managers	\$375
Internally managed	\$23,480

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX	
Equity	41%
Fixed income	59%

INVESTMENT STRATEGIES

U.S. equity, active	\$8,107
Global equity, active	\$1,521
U.S. bond, active	\$11,793
Global/non-U.S. bond, active	\$2,059

ACTIVE U.S. EQUITY STRATEGIES

GROWTH	
Large-cap	\$53
Midcap	\$216
Small-cap	\$103

VALUE

Large-cap	\$4,429
Midcap	\$902
Smidcap	\$41

CORE

Large-cap	\$656
Smidcap	\$562
Small-cap	\$748
Broad-market	\$341

NON-U.S. STRATEGIES

Emerging markets equity	\$846
Emerging markets equity mandates	\$846
Emerging markets debt	\$141
Emerging markets debt mandates	\$141

FIXED-INCOME STRATEGIES

Core	\$1,416
Core-plus	\$9,915
High-yield	\$482
High-yield mandates	\$482
Bank loans	\$106
LDI strategies	\$665

WORLDWIDE ASSETS UNDER MANAGEMENT

Mutual fund assets	\$133,949
U.S. 1940 Investment Co. Act	\$42,915
LDI strategies	\$3,155

DEFINED CONTRIBUTION ASSETS

U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$3,024
Internally managed	\$3,024

WORKFORCE

Total number of employees	2,379
Number of U.S.-based employees	867

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total	36%
Senior management	25%
Investment	20%

PERCENT U.S.-BASED MINORITY EMPLOYEES

Total	21%
Senior management	25%
Investment	21%

Primary custodian: BNY Mellon
 Parent company: Macquarie Group

47 Manulife Investment Management

200 Bloor St. E., Toronto, ON M4W 1E5 Canada; phone: 617-375-1500; www.manulifeim.com

(millions)	
Total assets managed worldwide	\$600,503
Total worldwide institutional assets	\$235,473
Total U.S. client assets	\$295,482
Total U.S. institutional client assets	\$163,332
Total U.S. tax-exempt assets	\$116,390
Total U.S. institutional tax-exempt	\$109,978
Internally managed	\$109,978

WORLDWIDE ASSETS UNDER MANAGEMENT

Mutual fund assets	\$246,576
ESG investing	\$454,155

Primary custodian: State Street
 Parent company: Manulife Financial Corp.
 Chief executive officer: Paul Lorentz

44 MassMutual

1295 State St., Springfield, MA 01111; phone: 413-744-1000; www.massmutual.com

(millions)	
Total assets managed worldwide	\$465,776
Total worldwide institutional assets	\$251,270
Total U.S. client assets	\$465,776
Total U.S. institutional client assets	\$251,270
Total U.S. tax-exempt assets	\$278,465
Total U.S. institutional tax-exempt	\$251,270
Assigned to external managers	\$23,000
Internally managed	\$228,270

DEFINED CONTRIBUTION ASSETS

U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$77,900
Internally managed	\$54,900

Chief executive officer: Roger Crandall

35 Mercer

1166 Avenue of the Americas, New York, NY 10036; phone: 212-345-7000; www.mercer.com

(millions)	
Total assets managed worldwide	\$344,915
Total worldwide institutional assets	\$337,941
Total U.S. client assets	\$130,188
Total U.S. institutional client assets	\$130,188
Total U.S. tax-exempt assets	\$130,187
Total U.S. institutional tax-exempt	\$130,187
Assigned to external managers	\$130,187

WORLDWIDE ASSETS UNDER MANAGEMENT

Hedge fund-of-fund assets	\$7,282
Investment outsourcing mandates	\$344,915
LDI strategies	\$158,660
Managed for retirement plans	\$158,660

DEFINED CONTRIBUTION ASSETS

U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$67,855

WORKFORCE

Total number of employees	24,400
Number of U.S.-based employees	5,715

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total	59%
Senior management	37%
Investment	35%

PERCENT U.S.-BASED MINORITY EMPLOYEES

Total	23%
Senior management	11%
Investment	21%

Primary custodian: State Street
 Parent company: Marsh McLennan

The Largest Money Managers

Chief executive officer: Michael Dempsey
 Chief investment officer: Stan Mavromates
 U.S. client contact: Rich Joseph
 DC client contact: Holly Verdeyen

23 MetLife Investment Management

1 MetLife Way, Whippany, NJ 07981; phone: 973-355-4000;
 www.metlife.com/investments

	(millions)
Total assets managed worldwide	\$579,837
Total worldwide institutional assets	\$579,837
Total U.S. client assets	\$562,796
Total U.S. institutional client assets	\$562,796
Total U.S. tax-exempt assets	\$50,383
Total U.S. institutional tax-exempt	\$50,383
Internally managed	\$50,383

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX	
Equity	4%
Fixed income	90%
Equity real estate	6%

INVESTMENT STRATEGIES	
U.S. equity, passive	\$2,061
U.S. bond, active	\$42,843
U.S. bond, passive	\$806
Global/non-U.S. bond, active	\$1,412
Equity real estate, U.S.	\$3,075
Privately placed debt	\$187

NON-U.S. STRATEGIES	
Emerging markets debt	\$1,412
Emerging markets debt mandates	\$1,412

FIXED-INCOME STRATEGIES	
Core	\$2,001
Core-plus	\$1,198
High-yield	\$40
High-yield mandates	\$40
LDI strategies	\$5,458

ESG INVESTING	
Total	\$501

WORLDWIDE ASSETS UNDER MANAGEMENT	
Mutual fund assets	\$327
U.S. 1940 Investment Co. Act	\$327
LDI strategies	\$5,458
Managed for retirement plans	\$451
ESG investing	\$6,254
ESG mandates	\$254

DEFINED CONTRIBUTION ASSETS	
U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$2,632
Internally managed	\$2,632

WORKFORCE	
Total number of employees	1,687
Number of U.S.-based employees	1,335
Number of cybersecurity professionals	161

PERCENT U.S.-BASED FEMALE EMPLOYEES	
Total	35%
Senior management	14%
Investment	31%

PERCENT U.S.-BASED MINORITY EMPLOYEES	
Total	36%
Senior management	15%
Investment	30%

Parent company: MetLife Inc.
 Chief investment officer: Steven J. Goulart
 U.S. client contact: Brendan Kilfeather

Other client contacts: Thomas Metzler (Global), Nigel Murdoch (Europe, Middle East & Africa), Maya Kiyokawa (Japan), Angus Campbell (Global)
 DC client contact: Brendan Kilfeather

7 J.P. Morgan Asset & Wealth Management

383 Madison Ave., New York, NY 10179; phone: 212-648-0523; www.jpmorgan.com/institutional

	(millions)
Total assets managed worldwide	\$2,765,710
Total worldwide institutional assets	\$1,411,863
Total U.S. client assets	\$1,945,501
Total U.S. institutional client assets	\$970,556
Total U.S. RIA assets	\$90,600
Total U.S. tax-exempt assets	\$443,112
Total U.S. institutional tax-exempt	\$435,772

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS	
ASSET MIX	
Equity	34%
Fixed income	34%
Equity real estate	20%
Hedge funds	1%
Cash	10%
Other	1%
Other type: Currency, private credit	

INVESTMENT STRATEGIES	
U.S. equity, active	\$54,813
U.S. equity, passive	\$661
U.S. equity, enhanced index	\$2,783
Non-U.S. equity, active	\$33,225
U.S. bond, active	\$85,274
Global/non-U.S. bond, active	\$9,675
Global/non-U.S. bond, passive	\$65
Equity real estate, U.S.	\$44,534
Equity real estate, non-U.S.	\$1,070
Hedge funds	\$1,567
Venture capital	\$353
Buyout funds	\$383
Infrastructure	\$8,247
Cash	\$25,998

ACTIVE U.S. EQUITY STRATEGIES	
GROWTH	
Large-cap	\$2,635
Midcap	\$1,518
Small-cap	\$49
Broad-market	\$1,808
VALUE	
Large-cap	\$704
Midcap	\$851
Small-cap	\$209
Broad-market	\$2,151
CORE	
Large-cap	\$42,937
Small-cap	\$935
Broad-market	\$1,016

PASSIVE U.S. EQUITY STRATEGIES	
CORE	
Large-cap	\$661
Low-volatility strategies	\$3,444
REITs	\$1,821
NON-U.S. STRATEGIES	
Emerging markets equity	\$21,083
Emerging markets equity mandates	\$21,083
Emerging markets debt	\$802
Emerging markets debt mandates	\$802
FIXED-INCOME STRATEGIES	
Core	\$36,280
Core-plus	\$2,493
Unconstrained	\$143
High-yield	\$4,449
High-yield mandates	\$4,449
Inflation-protected securities	\$358
Stable value	\$8,895
Risk-parity strategies	\$695
LDI strategies	\$16,488
ESG INVESTING	
Total	\$411,475
ESG mandates	\$200
Equity, active	\$198
Bond, active	\$2

WORLDWIDE ASSETS UNDER MANAGEMENT	
Hedge fund assets	\$3,809
Hedge fund-of-fund assets	\$16,695
Mutual fund assets	\$1,241,637
U.S. 1940 Investment Co. Act	\$801,644
Sponsored ETFs/ETNs	\$97,473
Actively managed	\$63,526
Investment outsourcing mandates	\$51,676
LDI strategies	\$89,755
Managed for retirement plans	\$18,851
Proprietary stable value	\$11,895
Factor-based strategies	\$14,013
ESG investing	\$2,289,349
ESG mandates	\$14,447

Assigned to external managers	\$11,385
Internally managed	\$424,387

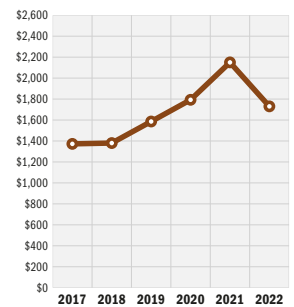
Managers of core bond strategies

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Vanguard Group	\$383,479
2	NISA Investment	\$234,332
3	State Street Global	\$175,216
4	Prudential Financial	\$163,778
5	Nuveen	\$107,609
6	BlackRock	\$107,536
7	Legal & General Investment	\$82,988
8	Baird Advisors	\$48,617
9	Dodge & Cox	\$46,145
10	J.P. Morgan Asset & Wealth	\$36,280

Asset growth (billions)



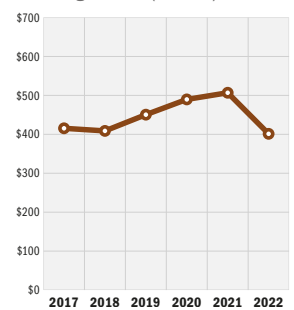
Managers of core-plus bond strategies

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	TCW Group	\$76,131
2	PIMCO	\$60,382
3	Loomis, Sayles	\$42,873
4	Franklin Templeton	\$30,316
5	Prudential Financial	\$30,048
6	Baird Advisors	\$22,427
7	State Street Global	\$19,552
8	Principal Global Investors	\$14,194
9	BlackRock	\$12,336
10	Macquarie Asset Mgmt.	\$9,915

Asset growth (billions)



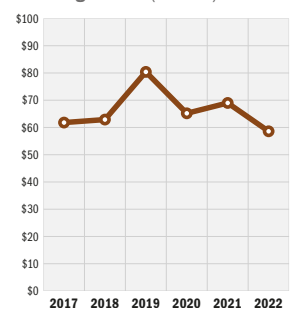
Managers of unconstrained bond strategies

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Empower Investments	\$22,212
2	Franklin Templeton	\$7,640
3	Neuberger Berman	\$5,893
4	SLC Management	\$5,651
5	TCW Group	\$5,175
6	PIMCO	\$3,639
7	Payden & Rygel	\$1,916
8	Prudential Financial	\$1,356
9	American Century	\$946
10	3650 REIT	\$933

Asset growth (billions)



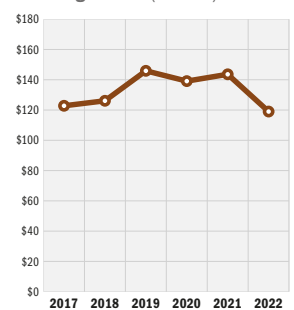
Managers of inflation-protected securities

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	State Street Global	\$23,363
2	Fidelity Investments	\$14,050
3	Vanguard Group	\$13,849
4	BlackRock	\$11,132
5	Dimensional Fund Advisors	\$10,463
6	PIMCO	\$10,396
7	Northern Trust Asset Mgmt.	\$9,593
8	Nuveen	\$7,108
9	NISA Investment	\$5,775
10	RhumbLine Advisers	\$2,082

Asset growth (billions)



The Largest Money Managers

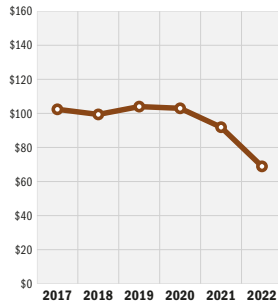
Managers of emerging markets debt

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Nuveen	\$10,236
2	Wellington Mgmt.	\$8,453
3	Prudential Financial	\$7,499
4	Payden & Rygel	\$4,900
5	TCW Group	\$4,481
6	PIMCO	\$3,416
7	Ashmore Group	\$3,400
8	Principal Global Investors	\$3,298
9	BlackRock	\$2,431
10	Ninety One	\$1,822

Asset growth (billions)



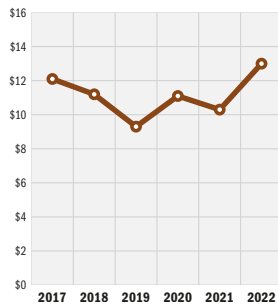
Managers of convertible securities

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Advent Capital	\$4,593
2	Voya Investment Mgmt.	\$4,560
3	Victory Capital	\$1,733
4	Oaktree Capital	\$693
5	Palisade Capital	\$503
6	Income Research & Mgmt.	\$320
7	New York Life Investments	\$181
8	Franklin Templeton	\$166
9	AAM	\$124
10	Invesco	\$74

Asset growth (billions)



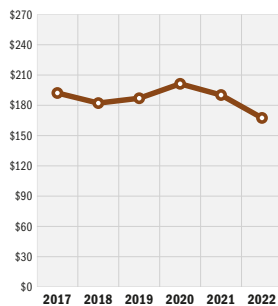
Managers of high-yield securities

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	New York Life Investments	\$13,570
2	Nuveen	\$11,898
3	Fidelity Investments	\$11,682
4	Nomura Corporate Research	\$9,400
5	Nomura Asset Mgmt.	\$9,090
6	Shenkman Group	\$8,666
7	Principal Global Investors	\$7,171
8	Loomis, Sayles	\$7,021
9	Franklin Templeton	\$5,990
10	T. Rowe Price Associates	\$5,923

Asset growth (billions)



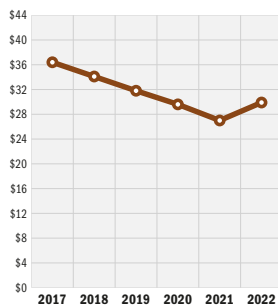
Managers of bank loans

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	PineBridge Investments	\$6,349
2	Nuveen	\$4,037
3	Voya Investment Mgmt.	\$3,405
4	Pacific Asset Mgmt.	\$3,036
5	Morgan Stanley Inv. Mgmt.	\$2,462
6	Conning	\$2,195
7	T. Rowe Price Associates	\$1,873
8	Barings	\$1,748
9	Invesco	\$1,224
10	Neuberger Berman	\$902

Asset growth (billions)



Continued from Page 39

OVERLAY STRATEGIES

U.S. INSTITUTIONAL TAX-EXEMPT ASSETS (NOTIONAL VALUE)

Total	\$43,472
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DEFINED CONTRIBUTION ASSETS

U.S. INSTITUTIONAL TAX-EXEMPT

Total	\$245,802
Internally managed	\$242,548

WORKFORCE

Total number of employees	7,762
Number of U.S.-based employees	3,309
Number of cybersecurity professionals	1,471
Percent employee owned	3%

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total	41%
Senior management	21%
Investment	26%

PERCENT U.S.-BASED MINORITY EMPLOYEES

Total	37%
Senior management	17%
Investment	24%

Parent company: J.P. Morgan Chase & Co.
 Chief executive officer: George Gatch
 U.S. client contact: Andrea Lisher
 Other client contact: Keith Cahill
 DC client contact: Jennifer Archer

24 Morgan Stanley Investment Management

522 Fifth Ave., New York, NY 10036; phone: 212-761-4000; www.morganstanley.com/im

(millions)	
Total assets managed worldwide	\$1,234,226
Total worldwide institutional assets	\$530,982
Total U.S. client assets	\$958,327
Total U.S. institutional client assets	\$255,133
Total U.S. RIA assets	\$267
Total U.S. tax-exempt assets	\$303,153
Total U.S. institutional tax-exempt	\$223,796
Assigned to external managers	\$6,055
Internally managed	\$217,741

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX

Equity	52%
Fixed income	27%
Equity real estate	14%
Private equity	3%
Cash	3%
Other	1%

Other type: Commodities

INVESTMENT STRATEGIES

U.S. equity, active	\$20,200
U.S. equity, passive	\$70,513
Non-U.S. equity, active	\$10,835
Non-U.S. equity, passive	\$435
Global equity, active	\$9,479
Global equity, passive	\$1,127
U.S. bond, active	\$28,727
U.S. bond, passive	\$23,252
U.S. bond, enhanced index	\$5
Global/non-U.S. bond, active	\$5,875
Equity real estate, U.S.	\$29,364
Equity real estate, non-U.S.	\$327
Hedge funds	\$14
Infrastructure	\$1,707
Private equity, U.S.	\$1,757
Private equity, non-U.S.	\$1,200
Privately placed debt	\$3,375
Commodities	\$1,857
Cash	\$7,691
Low-volatility strategies	\$11,164
REITs	\$62

NON-U.S. STRATEGIES

Emerging markets equity	\$4,005
Emerging markets equity mandates	\$3,049
China equity	\$1,449
Emerging markets debt	\$1,198
Emerging markets debt mandates	\$1,198
High-yield	\$4,028
CDOs	\$5,252
Stable value	\$931
Mortgages (whole loans)	\$695
Bank loans	\$2,462

Risk-parity strategies	\$26
LDI strategies	\$7,505

WORLDWIDE ASSETS UNDER MANAGEMENT

Hedge fund assets	\$3,935
Hedge fund-of-fund assets	\$18,338
Mutual fund assets	\$557,596
U.S. 1940 Investment Co. Act	\$413,989
Investment outsourcing mandates	\$12,316
LDI strategies	\$10,020
Managed for retirement plans	\$10,020
Factor-based strategies	\$9,953
ESG investing	\$211,210
ESG mandates	\$39,564

OVERLAY STRATEGIES

U.S. INSTITUTIONAL TAX-EXEMPT ASSETS (NOTIONAL VALUE)

Total	\$85,849
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DEFINED CONTRIBUTION ASSETS

U.S. INSTITUTIONAL TAX-EXEMPT

Total	\$8,214
Internally managed	\$8,214

WORKFORCE

Total number of employees	4,363
Number of U.S.-based employees	3,118

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total	35%
Senior management	28%
Investment	25%

PERCENT U.S.-BASED MINORITY EMPLOYEES

Total	29%
Senior management	23%
Investment	28%

Parent company: Morgan Stanley
 U.S. client contact: Lou Membrino
 DC client contact: Kristin Carcio

The assets of the following subsidiaries or affiliates are included in the figures above:

- ▶ **Atlanta Capital:** total assets: \$25.1 billion; U.S. institutional, tax-exempt assets: \$5.79 billion; client contact: Kelly Williams, phone: 404-682-2528
- ▶ **Calvert Research and Management:** total assets: \$32.7 billion; U.S. institutional, tax-exempt assets: \$235 million; client contact: Lou Membrino, phone: 617-672-8775, email: louis.membrino@morganstanley.com
- ▶ **Eaton Vance Management:** total assets: \$149.5 billion; U.S. institutional, tax-exempt assets: \$10.49 billion; client contact: Lou Membrino, phone: 617-672-8775, email: louis.membrino@morganstanley.com
- ▶ **Parametric Portfolio Associates:** total assets: \$286.2 billion; U.S. institutional, tax-exempt assets: \$168.38 billion; client contact: Rob Ciro, phone: 206-381-6441

39 Neuberger Berman

1290 Avenue of the Americas, New York, NY 10104; phone: 212-476-9000; www.nb.com

(millions)	
Total assets managed worldwide	\$427,269
Total worldwide institutional assets	\$297,897
Total U.S. client assets	\$246,398
Total U.S. institutional client assets	\$140,880
Total U.S. tax-exempt assets	\$120,353
Total U.S. institutional tax-exempt	\$101,019
Assigned to external managers	\$21,624
Internally managed	\$79,395

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX

Equity	30%
Fixed income	47%
Equity real estate	6%
Private equity	13%
Other	4%

Other type: Alternatives, quantitative, multiasset

INVESTMENT STRATEGIES

U.S. equity, active	\$19,405
Non-U.S. equity, active	\$3,700
Global equity, active	\$263
U.S. bond, active	\$31,920
U.S. bond, passive	\$1,728
U.S. bond, enhanced index	\$1,382
Global/non-U.S. bond, active	\$2,074
Equity real estate, U.S.	\$4,878
Hedge funds	\$234

The Largest Money Managers

Private equity, U.S.	\$1,883
Privately placed debt	\$2,694

ACTIVE U.S. EQUITY STRATEGIES

GROWTH	
Large-cap	\$340
Midcap	\$697
Small-cap	\$138
Broad-market	\$20

VALUE	
Large-cap	\$2,232
Midcap	\$5
Smidcap	\$8
Small-cap	\$980
Broad-market	\$83

CORE	
Large-cap	\$1,313
Small-cap	\$6,842
Broad-market	\$3,892
Low-volatility strategies	\$2,363
REITS	\$305

NON-U.S. STRATEGIES	
Emerging markets equity	\$1,242
Emerging markets equity mandates	\$1,242
Emerging markets debt	\$1,054
Emerging markets debt mandates	\$1,054

FIXED-INCOME STRATEGIES	
Core	\$4,622
Core-plus	\$1,626
Unconstrained	\$5,893
High-yield	\$4,497
High-yield mandates	\$4,497
Inflation-protected securities	\$781
Bank loans	\$902
Risk-parity strategies	\$615
LDI strategies	\$2,889

WORLDWIDE ASSETS UNDER MANAGEMENT	
Hedge fund assets	\$6,148
Hedge fund-of-fund assets	\$9,712
Mutual fund assets	\$78,342
U.S. 1940 Investment Co. Act	\$49,684
Sponsored ETFs/ETNs	\$243
Actively managed	\$243
Investment outsourcing mandates	\$1,760
LDI strategies	\$3,197
Factor-based strategies	\$10,282
Digital assets/cryptocurrency	\$33

DEFINED CONTRIBUTION ASSETS	
U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$14,266
Internally managed	\$14,248

WORKFORCE	
Total number of employees	2,691
Number of U.S.-based employees	1,930
Number of cybersecurity professionals	40
Percent employee owned	100%

PERCENT U.S.-BASED FEMALE EMPLOYEES	
Total	37%
Senior management	29%
Investment	24%

PERCENT U.S.-BASED MINORITY EMPLOYEES	
Total	34%
Senior management	26%
Investment	26%

Primary custodian: State Street
Chief executive officer: George Walker
Chief investment officers: Joseph Amato, Brad Tank, Anthony Tutrone, Erik Knutzen
U.S. client contact: Matt Malloy
Other client contact: Lesley Nurse
DC client contact: Scott Kilgallen

25 New York Life Investments

51 Madison Ave., New York, NY 10010; phone: 212-576-7000; www.nyli.com

(millions)	
Total assets managed worldwide	\$653,638
Total worldwide institutional assets	\$487,748
Total U.S. client assets	\$477,830
Total U.S. institutional client assets	\$384,064
Total U.S. RIA assets	\$56,758
Total U.S. tax-exempt assets	\$65,508
Total U.S. institutional tax-exempt	\$60,725
Assigned to external managers	\$315
Internally managed	\$60,410

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX	
Equity	1%
Fixed income	77%
Equity real estate	15%
Private equity	6%
Cash	1%

INVESTMENT STRATEGIES	
Non-U.S. equity, active	\$470
U.S. bond, active	\$42,076
Equity real estate, U.S.	\$2,084
Equity real estate, non-U.S.	\$2,736
Buyout funds	\$2,057
Private equity, U.S.	\$1,349
Privately placed debt	\$3,905
Mezzanine debt	\$288
Fossil fuel energy	\$175
Convertible securities	\$181
Cash	\$591

FIXED-INCOME STRATEGIES	
Core	\$2,684
Core-plus	\$7,548
Unconstrained	\$369
High-yield	\$13,570
Stable value	\$8,202

ESG INVESTING	
Total	\$49,245

WORLDWIDE ASSETS UNDER MANAGEMENT

Hedge fund assets	\$4,951
Hedge fund-of-fund assets	\$351
Mutual fund assets	\$171,475
U.S. 1940 Investment Co. Act	\$86,169
Sponsored ETFs/ETNs	\$3,440
Actively managed	\$592
Institutional	\$592
Investment outsourcing mandates	\$1,050
LDI strategies	\$15,351
Managed for retirement plans	\$1,048
Proprietary stable value	\$18,354
Factor-based strategies	\$11,859
ESG investing	\$570,583
ESG mandates	\$40,441

DEFINED CONTRIBUTION ASSETS	
U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$12,121
Internally managed	\$12,121

WORKFORCE

Total number of employees

Parent company: New York Life Insurance Co.
Chief executive officer: Naim Abou-Jaoude
The assets of the following subsidiaries or affiliates are included in the figures above:

▶ **Apogem Capital LLC:** total assets: \$39.31 billion; U.S. institutional, tax-exempt assets: \$3.87 billion; client contact: David Fann, phone: 212-601-3600

▶ **MacKay Shields LLC:** total assets: \$128.58 billion; U.S. institutional, tax-exempt assets: \$35.73 billion; client contact: John Akkerman, phone: 212-230-3805

42 NISA Investment Advisors LLC

101 S. Hanley Road, Suite 1700, St. Louis, MO 63105; phone: 314-721-1900; www.nisa.com

(millions)	
Total assets managed worldwide	\$259,207
Total worldwide institutional assets	\$259,207
Total U.S. client assets	\$255,992
Total U.S. institutional client assets	\$255,992
Total U.S. tax-exempt assets	\$235,381
Total U.S. institutional tax-exempt	\$235,381
Internally managed	\$235,381

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX	
Fixed income	100%
INVESTMENT STRATEGIES	
U.S. equity, active	\$59
U.S. equity, passive	\$810
Non-U.S. equity, passive	\$180
U.S. bond, active	\$234,332

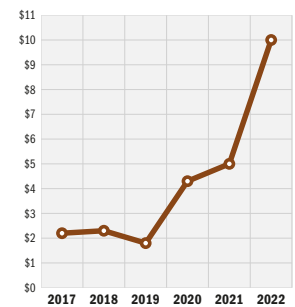
Managers of collateralized debt obligations

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Morgan Stanley Inv. Mgmt.	\$5,252
2	SLC Management	\$2,870
3	Conning	\$755
4	Ares Mgmt.	\$577
5	Franklin Templeton	\$278
6	Barings	\$126
7	Carmel Partners	\$83
8	Putnam Investments	\$46

Asset growth (billions)



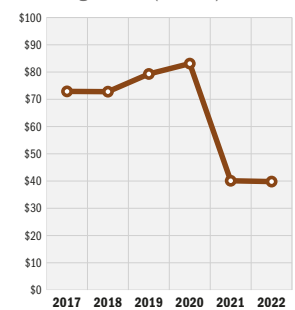
Managers of mortgages (whole loans)

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Prudential Financial	\$17,170
2	Principal Global Investors	\$8,795
3	Heitman	\$3,683
4	Ullico Investment	\$3,363
5	Prima Capital Advisors	\$2,844
6	Washington Capital	\$1,758
7	3650 REIT	\$933
8	Morgan Stanley Inv. Mgmt.	\$695
9	Federated Hermes	\$294
10	Franklin Templeton	\$162

Asset growth (billions)



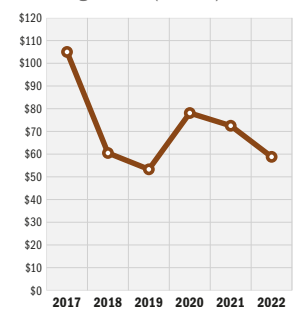
Managers of hedge fund assets

U.S. instl, tax-exempt assets managed internally, reported on a net basis, as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Wellington Mgmt.	\$17,759
2	PIMCO	\$8,250
3	Grantham, Mayo v. Otterloo	\$4,417
4	Waterfall Asset Mgmt.	\$4,393
5	King Street Capital	\$2,900
6	Franklin Templeton	\$1,852
7	AllianceBernstein	\$1,737
8	BlackRock	\$1,625
9	Voya Investment Mgmt.	\$1,597
10	J.P. Morgan Asset & Wealth	\$1,567

Asset growth (billions)



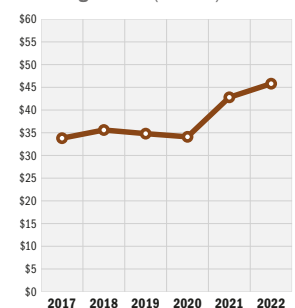
Managers of private equity*

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Nuveen	\$17,508
2	State Street Global	\$7,068
3	Oaktree Capital	\$5,596
4	Morgan Stanley Inv. Mgmt.	\$2,957
5	Voya Investment Mgmt.	\$2,600
6	Neuberger Berman	\$1,883
7	StepStone Group	\$1,691
8	Prudential Financial	\$1,404
9	Unigestion	\$1,378
10	New York Life Investments	\$1,349

Asset growth (billions)



*Excludes private equity assets broken out elsewhere.

The Largest Money Managers

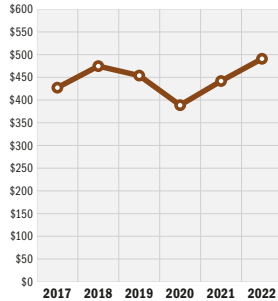
Managers of real estate equity

U.S. institutional, tax-exempt assets managed internally, net of leverage, as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Nuveen	\$59,650
2	J.P. Morgan Asset & Wealth	\$45,604
3	Invesco	\$33,797
4	Franklin Templeton	\$31,175
5	Morgan Stanley Inv. Mgmt.	\$29,691
6	Brookfield Asset Mgmt.	\$27,718
7	Principal Global Investors	\$24,932
8	Heitman	\$23,297
9	AEW Capital	\$18,994
10	State Street Global	\$15,536

Asset growth (billions)



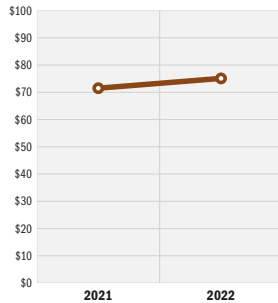
Managers of real estate debt

U.S. institutional, tax-exempt assets managed internally, net of leverage, as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Nuveen	\$43,321
2	Prudential Financial	\$21,258
3	Voya Investment Mgmt.	\$3,326
4	Prima Capital Advisors	\$2,844
5	Washington Capital	\$1,758
6	3650 REIT	\$933
7	CenterSquare Investment	\$816
8	Barings	\$423
9	TerraCotta Group	\$106
10	StepStone Group	\$95

Asset growth (billions)



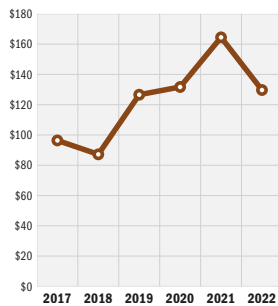
Managers of REITs

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Prudential Financial	\$35,955
2	Dimensional Fund Advisors	\$17,144
3	Principal Global Investors	\$11,796
4	Vanguard Group	\$10,339
5	Northern Trust Asset Mgmt.	\$9,749
6	State Street Global	\$9,649
7	CenterSquare Investment	\$5,973
8	Cohen & Steers	\$5,288
9	BlackRock	\$3,838
10	AEW Capital	\$2,962

Asset growth (billions)



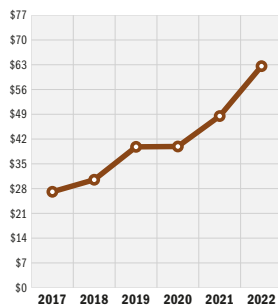
Managers of infrastructure assets

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Brookfield Asset Mgmt.	\$20,191
2	IFM Investors	\$16,454
3	J.P. Morgan Asset & Wealth	\$8,247
4	Nuveen	\$3,705
5	Ullico Investment	\$3,615
6	CBRE Investment Mgmt.	\$2,100
7	Morgan Stanley Inv. Mgmt.	\$1,707
8	Cohen & Steers	\$1,687
9	Harrison Street	\$1,586
10	Barings	\$1,279

Asset growth (billions)



Continued from Page 41

ACTIVE U.S. EQUITY STRATEGIES

CORE	
Large-cap	\$44
Smidcap	\$15

PASSIVE U.S. EQUITY STRATEGIES

CORE	
Large-cap	\$325
Small-cap	\$4
Broad-market	\$417
REITs	\$417

NON-U.S. STRATEGIES

Emerging markets equity	\$48
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FIXED-INCOME STRATEGIES

Core	\$234,332
Inflation-protected securities	\$5,775
Stable value	\$1,560
LDI strategies	\$206,695

ESG INVESTING

Total	\$7,107
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WORLDWIDE ASSETS UNDER MANAGEMENT

LDI strategies	\$211,542
Managed for retirement plans	\$205,762
Proprietary stable value	\$1,560
Factor-based strategies	\$202
ESG investing	\$7,714

OVERLAY STRATEGIES

U.S. INSTITUTIONAL TAX-EXEMPT ASSETS (NOTIONAL VALUE)	
Total	\$177,239

DEFINED CONTRIBUTION ASSETS

U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$1,782
Internally managed	\$1,782

WORKFORCE

Total number of employees	383
Number of U.S.-based employees	383
Number of cybersecurity professionals	6
Percent employee owned	100%

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total	29%
Senior management	16%
Investment	22%

PERCENT U.S.-BASED MINORITY EMPLOYEES

Total	14%
Senior management	12%
Investment	14%

Parent company: NISA LLC
 Chief executive officer: David G. Eichhorn
 U.S. client contact: Cheryl L. Hanson
 DC client contact: Daniel H. Riley

14 Northern Trust Asset Management

50 S. LaSalle St., Chicago, IL 60603; phone: 312-630-6000;
www.northerntrust.com/asset-management/united-states
 (millions)

Total assets managed worldwide	\$1,038,406
Total worldwide institutional assets	\$792,802
Total U.S. client assets	\$866,225
Total U.S. institutional client assets	\$620,655
Total U.S. tax-exempt assets	\$486,255
Total U.S. institutional tax-exempt	\$453,567
Assigned to external managers	\$27,998
Internally managed	\$425,569

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX	
Equity	69%
Fixed income	14%
Cash	17%

INVESTMENT STRATEGIES

U.S. equity, active	\$3,686
U.S. equity, passive	\$221,852
Non-U.S. equity, passive	\$66,352
U.S. bond, active	\$4,808
U.S. bond, passive	\$54,284
Global/non-U.S. bond, passive	\$100
Hedge funds	\$443
Private equity, U.S.	\$426
Cash	\$73,618

ACTIVE U.S. EQUITY STRATEGIES

VALUE	
Large-cap	\$350
Small-cap	\$60

CORE

Large-cap	\$2,512
Small-cap	\$763

PASSIVE U.S. EQUITY STRATEGIES

GROWTH

Large-cap	\$23,073
Midcap	\$219
Small-cap	\$6,114

VALUE

Large-cap	\$24,216
Midcap	\$357
Small-cap	\$5,927

CORE

Large-cap	\$115,584
Midcap	\$4,876
Smidcap	\$955
Small-cap	\$1,835
Broad-market	\$38,694

Low-volatility strategies	\$1,232
REITs	\$9,749

NON-U.S. STRATEGIES

Emerging markets equity	\$11,763
Emerging markets equity mandates	\$11,763

FIXED-INCOME STRATEGIES

Core	\$2,393
High-yield	\$213
Inflation-protected securities	\$9,593
LDI strategies	\$8,237

ESG INVESTING

Total	\$11,970
ESG mandates	\$5,775
Equity, passive	\$1,463
Bonds, passive	\$2,291

WORLDWIDE ASSETS UNDER MANAGEMENT

Hedge fund-of-fund assets	\$1,264
Mutual fund assets	\$247,592
U.S. 1940 Investment Co. Act	\$176,396
Sponsored ETFs/ETNs	\$20,750
Actively managed	\$987
Investment outsourcing mandates	\$70,196
LDI strategies	\$8,812
Managed for retirement plans	\$7,392
Factor-based strategies	\$64,893
ESG investing	\$137,080
ESG mandates	\$92,914

OVERLAY STRATEGIES

U.S. INSTITUTIONAL TAX-EXEMPT ASSETS (NOTIONAL VALUE)	
Total	\$702

DEFINED CONTRIBUTION ASSETS

U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$183,178
Internally managed	\$183,178

WORKFORCE

Total number of employees	985
Number of U.S.-based employees	632
Percent employee owned	2%

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total	38%
Senior management	26%
Investment	36%

PERCENT U.S.-BASED MINORITY EMPLOYEES

Total	31%
Senior management	29%
Investment	30%

Primary custodian: Northern Trust
 Parent company: Northern Trust Co.
 Chief executive officer: Daniel Gamba
 Chief investment officer: Angelo Manioudakis
 U.S. client contacts: John Abunassar, Jason Tyler

15 Nuveen

730 Third Ave., New York, NY 10017; phone: 800-842-2733;
www.nuveen.com
 (millions)

Total assets managed worldwide	\$1,090,174
Total worldwide institutional assets	\$759,724
Total U.S. client assets	\$1,025,905
Total U.S. institutional client assets	\$695,784
Total U.S. tax-exempt assets	\$548,113

The Largest Money Managers

Total U.S. institutional tax-exempt \$548,113
Internally managed \$548,113

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX
Equity..... 33%
Fixed income..... 33%
Equity real estate..... 11%
Private equity 3%
Other 20%
Other type: Alternatives, asset allocation, balanced, structured

INVESTMENT STRATEGIES
U.S. equity, active \$74,909
U.S. equity, passive..... \$39,711
Non-U.S. equity, active..... \$34,457
Non-U.S. equity, passive \$5,819
Global equity, active \$26,349
Global equity, passive..... \$2
U.S. bond, active \$166,807
Global/non-U.S. bond, active..... \$10,236
Equity real estate, U.S. \$53,862
Equity real estate, non-U.S. \$4,822
Real estate debt \$43,321
Timber..... \$966
Infrastructure \$3,705
Private equity, U.S. \$17,508
Privately placed debt \$62,268

ACTIVE U.S. EQUITY STRATEGIES
GROWTH
Large-cap \$15,911
Small-cap \$182
VALUE
Large-cap \$8,537
Small-cap \$175
CORE
Large-cap \$47,508
Smidcap \$1,211
Small-cap \$1,385

PASSIVE U.S. EQUITY STRATEGIES
GROWTH
Large-cap \$17,458
CORE
Large-cap \$21,186
Small-cap \$1,067
REITs \$1,147

NON-U.S. STRATEGIES
Emerging markets equity \$9,860
Emerging markets debt..... \$10,236
Emerging markets debt mandates \$10,236

FIXED-INCOME STRATEGIES
Core..... \$107,609
High-yield..... \$11,898
High-yield mandates \$4,790
Inflation-protected securities \$7,108
Stable value..... \$2,743
Bank loans..... \$4,037
LDI strategies..... \$3,340

ESG INVESTING
Total..... \$548,113
ESG mandates \$44,869
Equity, active..... \$951
Equity, passive \$12,519
Bond, active..... \$8,835

WORLDWIDE ASSETS UNDER MANAGEMENT
Hedge fund assets \$182
Mutual fund assets \$319,335
U.S. 1940 Investment Co. Act \$319,335
Sponsored ETFs/ETNs \$11,250
LDI strategies..... \$3,340
Managed for retirement plans..... \$3,340
Proprietary stable value \$2,743
ESG investing \$1,090,174
ESG mandates \$44,869

OVERLAY STRATEGIES
U.S. INSTITUTIONAL TAX-EXEMPT ASSETS (NOTIONAL VALUE)
Total..... \$4,560

DEFINED CONTRIBUTION ASSETS
U.S. INSTITUTIONAL TAX-EXEMPT
Total..... \$510,463
Internally managed \$510,463

WORKFORCE
Total number of employees..... 19,318
Number of cybersecurity professionals 218

Primary custodian: BNY Mellon
Parent company: TIAA
Chief executive officer: Jose Minaya
Chief investment officer: Saira Malik
U.S. client contact: Elizabeth Sansone

13 Pacific Investment Management Co. LLC

650 Newport Center Drive, Newport Beach, CA 92660; phone: 949-720-6000; www.pimco.com

(millions)
Total assets managed worldwide \$1,379,255
Total worldwide institutional assets \$865,656
Total U.S. client assets \$818,161
Total U.S. institutional client assets \$468,874
Total U.S. tax-exempt assets \$341,457
Total U.S. institutional tax-exempt \$339,924
Internally managed \$339,924

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX
Equity..... 6%
Fixed income..... 83%
Private equity 1%
Hedge funds 1%
Cash 3%
Other 6%
Other type: Commodities, real estate, asset allocation, ARS

INVESTMENT STRATEGIES
U.S. equity, active \$7,687
U.S. equity, enhanced index \$5,654
Non-U.S. equity, active \$4,284
Non-U.S. equity, enhanced index \$2,325
Global equity, active \$866
U.S. bond, active \$275,624
Global/non-U.S. bond, active..... \$20,147
Hedge funds \$8,250
Commodities..... \$4,339
Cash \$10,748

ACTIVE U.S. EQUITY STRATEGIES
VALUE
Large-cap \$4,822
Small-cap \$84

NON-U.S. STRATEGIES
Emerging markets equity \$1,045
Emerging markets equity mandates \$1,045
Emerging markets debt..... \$3,416
Emerging markets debt mandates \$3,416

FIXED-INCOME STRATEGIES
Core..... \$8,870
Core-plus \$60,382
Unconstrained..... \$3,639
High-yield..... \$4,836
High-yield mandates \$4,836
Inflation-protected securities..... \$10,396
Stable value..... \$23,585
Bank loans..... \$463
LDI strategies..... \$122,742

ESG INVESTING
Total..... \$8,529
ESG mandates \$914
Bond, active..... \$914

WORLDWIDE ASSETS UNDER MANAGEMENT
Hedge fund assets \$23,747
Mutual fund assets \$851,703
U.S. 1940 Investment Co. Act \$441,488
Sponsored ETFs/ETNs \$27,258
Actively managed..... \$21,014
LDI strategies..... \$167,411
Managed for retirement plans..... \$135,345
Proprietary stable value \$18,097
Factor-based strategies \$14,570
ESG investing \$236,108
ESG mandates \$64,286

OVERLAY STRATEGIES
U.S. INSTITUTIONAL TAX-EXEMPT ASSETS (NOTIONAL VALUE)
Total..... \$4,590

DEFINED CONTRIBUTION ASSETS
U.S. INSTITUTIONAL TAX-EXEMPT
Total..... \$106,500
Internally managed \$106,500

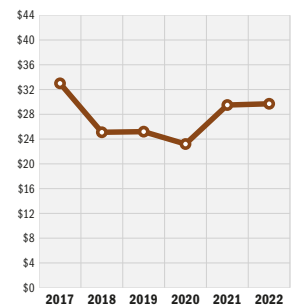
Managers of commodities

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	State Street Global	\$7,121
2	Geode Capital Mgmt.	\$5,687
3	PIMCO	\$4,339
4	Victory Capital	\$3,332
5	CoreCommodity	\$2,197
6	Morgan Stanley Inv. Mgmt.	\$1,857
7	Invesco	\$1,747
8	Dimensional Fund Advisors	\$1,490
9	BlackRock	\$1,479
10	Prudential Financial	\$196

Asset growth (billions)



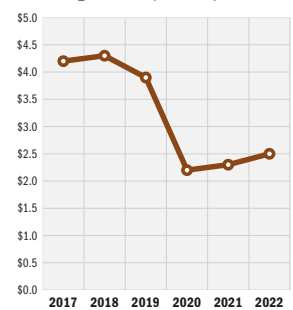
Managers of venture capital

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Adams Street Partners	\$1,180
2	StepStone Group	\$523
3	Wexford Capital	\$400
4	J.P. Morgan Asset & Wealth	\$353
5	Invesco	\$25
6	PineBridge Investments	\$8

Asset growth (billions)



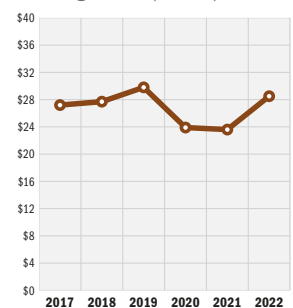
Managers of buyout funds

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Brookfield Asset Mgmt.	\$14,143
2	Ares Mgmt.	\$7,335
3	New York Life Investments	\$2,057
4	Twin Bridge Capital	\$1,977
5	StepStone Group	\$1,522
6	Adams Street Partners	\$1,065
7	J.P. Morgan Asset & Wealth	\$383
8	PineBridge Investments	\$5

Asset growth (billions)



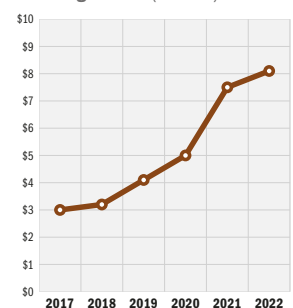
Managers of mezzanine debt

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	SLC Management	\$2,834
2	Invesco	\$2,270
3	Brookfield Asset Mgmt.	\$987
4	AEW Capital	\$880
5	Oaktree Capital	\$576
6	New York Life Investments	\$288
7	Barings	\$116
8	Rockwood Capital	\$48
9	National Real Estate	\$40
10	StepStone Group	\$30

Asset growth (billions)



Continued on Page 44

The Largest Money Managers

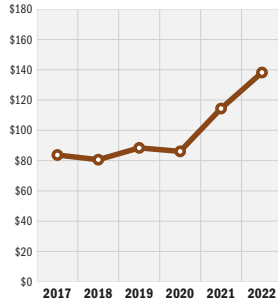
Managers of privately placed debt

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Nuveen	\$62,268
2	Prudential Financial	\$29,859
3	Voya Investment Mgmt.	\$21,618
4	New York Life Investments	\$3,905
5	TCW Group	\$3,716
6	Morgan Stanley Inv. Mgmt.	\$3,375
7	Neuberger Berman	\$2,694
8	PCCP	\$2,517
9	Schroders	\$2,462
10	Adams Street Partners	\$2,199

Asset growth (billions)



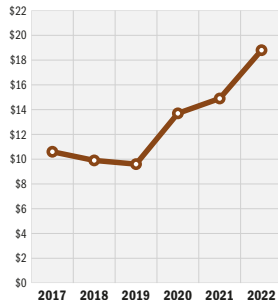
Managers of distressed debt

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Oaktree Capital	\$11,712
2	AllianceBernstein	\$3,529
3	Ares Mgmt.	\$2,486
4	Invesco	\$694
5	TCW Group	\$290
6	Barings	\$50
7	Prudential Financial	\$17
8	StepStone Group	\$7

Asset growth (billions)



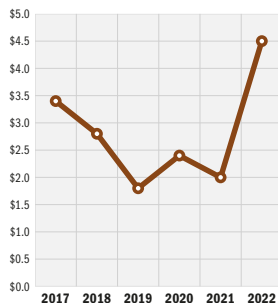
Managers of energy assets

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Voya Investment Mgmt.	\$3,191
2	Ares Mgmt.	\$499
3	Victory Capital	\$409
4	New York Life Investments	\$175
5	AllianceBernstein	\$141
6	StepStone Group	\$60

Asset growth (billions)



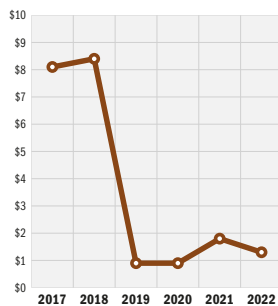
Managers of MLPs

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	State Street Global	\$1,026
2	Invesco	\$253
3	Cohen & Steers	\$62

Asset growth (billions)



Continued from Page 43

WORKFORCE

Total number of employees 3,393
 Number of U.S.-based employees 2,386

PERCENT U.S.-BASED FEMALE EMPLOYEES

Total 37%
 Senior management 29%
 Investment 21%

PERCENT U.S.-BASED MINORITY EMPLOYEES

Total 48%
 Senior management 42%
 Investment 50%

Parent company: Allianz Asset Management

Chief executive officer: Emmanuel Roman

Chief investment officer: Daniel Ivascyn

DC client contact: James Bentley

17 T. Rowe Price Associates Inc.

100 E. Pratt St., Baltimore, MD 21202-1009; phone: 410-345-2000; www.troweprice.com

(millions)
 Total assets managed worldwide \$1,274,700
 Total worldwide institutional assets \$737,473
 Total U.S. client assets \$1,174,991
 Total U.S. institutional client assets \$675,852
 Total U.S. tax-exempt assets \$701,398
 Total U.S. institutional tax-exempt \$591,597
 Internally managed \$591,597

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX

Equity 90%
 Fixed income 10%

INVESTMENT STRATEGIES

U.S. equity, active \$487,591
 U.S. equity, passive \$1,926
 U.S. equity, enhanced index \$20,376
 Non-U.S. equity, active \$12,114
 Non-U.S. equity, passive \$100
 Non-U.S. equity, enhanced index \$8
 Global equity, active \$6,862
 U.S. bond, active \$56,305
 U.S. bond, passive \$778
 U.S. bond, enhanced index \$36
 Global/non-U.S. bond, active \$3,899
 Cash \$1,602

ACTIVE U.S. EQUITY STRATEGIES

GROWTH
 Large-cap \$403,257
 Midcap \$20,276
 Small-cap \$10,628

VALUE

Large-cap \$22,299
 Midcap \$5,303
 Small-cap \$3,039

CORE
 Large-cap \$11,776
 Midcap \$3,276
 Small-cap \$7,737

PASSIVE U.S. EQUITY STRATEGIES

CORE
 Large-cap \$1,858
 Midcap \$68
 REITs \$155

NON-U.S. STRATEGIES

Emerging markets equity \$3,818
 Emerging markets equity mandates \$3,818
 Emerging markets debt \$334
 Emerging markets debt mandates \$334

FIXED-INCOME STRATEGIES

Core \$2,137
 Core-plus \$225
 Unconstrained \$94
 High-yield \$5,923
 Inflation-protected securities \$133
 Stable value \$38,074
 Mortgages (whole loans) \$27
 Bank loans \$1,873
 LDI strategies \$8,811

WORLDWIDE ASSETS UNDER MANAGEMENT

Hedge fund assets \$2,976
 Mutual fund assets \$911,763

U.S. 1940 Investment Co. Act \$872,787
 Sponsored ETFs/ETNs \$845
 Actively managed \$845
 Institutional \$170
 LDI strategies \$8,811
 Proprietary stable value \$37,420
 ESG investing \$19,137
 ESG mandates \$19,137

DEFINED CONTRIBUTION ASSETS

U.S. INSTITUTIONAL TAX-EXEMPT

Total \$542,720
 Internally managed \$542,720

WORKFORCE

Total number of employees 7,868
 Number of U.S.-based employees 6,642
 Percent employee owned 9%

Parent company: T. Rowe Price Group Inc.

Chief executive officer: Robert Sharps

27 Principal Global Investors

801 Grand Ave., Des Moines, IA 50392-0490; phone: 800-533-1390; www.principalglobal.com

(millions)
 Total assets managed worldwide \$487,898
 Total worldwide institutional assets \$458,932
 Total U.S. client assets \$429,119
 Total U.S. institutional client assets \$403,253
 Total U.S. RIA assets \$143,897
 Total U.S. tax-exempt assets \$323,076
 Total U.S. institutional tax-exempt \$323,063
 Assigned to external managers \$29,961
 Internally managed \$293,102

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX

Equity 44%
 Fixed income 39%
 Equity real estate 16%
 Cash 1%

INVESTMENT STRATEGIES

U.S. equity, active \$51,277
 U.S. equity, passive \$49,999
 Non-U.S. equity, active \$22,181
 Non-U.S. equity, passive \$1,254
 Global equity, active \$6,165
 Global equity, passive \$10
 U.S. bond, active \$82,254
 U.S. bond, passive \$15,415
 Global/non-U.S. bond, active \$8,925
 Equity real estate, U.S. \$24,932
 Hedge funds \$32
 Direct lending \$7,199
 Cash \$2,110

ACTIVE U.S. EQUITY STRATEGIES

GROWTH
 Large-cap \$7,699
 Midcap \$617
 Smidcap \$44
 Small-cap \$66

VALUE

Large-cap \$8,954
 Midcap \$1
 Smidcap \$855
 Small-cap \$40

CORE

Large-cap \$3,632
 Midcap \$19,541
 Broad-market \$2,398

PASSIVE U.S. EQUITY STRATEGIES

GROWTH
 Large-cap \$1,236
 Midcap \$167
 Small-cap \$147

VALUE

Large-cap \$449
 Midcap \$451
 Small-cap \$76

CORE

Large-cap \$34,114
 Midcap \$8,049
 Small-cap \$5,310
 REITs \$11,796

NON-U.S. STRATEGIES

Emerging markets equity \$5,364
 Emerging markets equity mandates \$5,364

The Largest Money Managers

Emerging markets debt.....	\$3,298
Emerging markets debt mandates	\$3,298
FIXED-INCOME STRATEGIES	
Core-plus.....	\$14,194
High-yield.....	\$7,171
High-yield mandates	\$6,187
Stable value.....	\$23,079
Mortgages (whole loans).....	\$8,795
Bank loans.....	\$241
LDI strategies.....	\$5,124
ESG INVESTING	
Total.....	\$2,011
ESG mandates	\$2,011
Equity, active.....	\$888
Bond, active.....	\$1,122

WORLDWIDE ASSETS UNDER MANAGEMENT	
Hedge fund assets	\$385
Mutual fund assets	\$165,829
U.S. 1940 Investment Co. Act	\$135,327
Sponsored ETFs/ETNs	\$2,189
Actively managed.....	\$2,189
Institutional	\$2,189
LDI strategies.....	\$5,211
Managed for retirement plans.....	\$5,124
Proprietary stable value	\$23,079
Factor-based strategies	\$2,070
ESG investing	\$9,981
ESG mandates	\$9,981

DEFINED CONTRIBUTION ASSETS	
U.S. INSTITUTIONAL TAX-EXEMPT	
Total.....	\$111,859
Internally managed	\$111,859

WORKFORCE	
Total number of employees.....	1,929
Number of U.S.-based employees.....	1,547
Percent employee owned.....	5%
PERCENT U.S.-BASED FEMALE EMPLOYEES	
Total.....	40%
Senior management	35%
Investment.....	27%

PERCENT U.S.-BASED MINORITY EMPLOYEES	
Total.....	12%
Senior management	6%
Investment.....	13%

Primary custodian: BNY Mellon
 Parent company: Principal Financial Group
 Chief executive officer: Patrick G. Halter
 The assets of the following subsidiaries or affiliates are included in the figures above:

- ▶ Claritas Administracao de Recursos Ltda.
- ▶ Edge Asset Management: total assets: \$16.11 billion; U.S. institutional, tax-exempt assets: \$11.52 billion; client contact: Jaime Kiehn, phone: 206-913-5842
- ▶ Origin Asset Management LLP: total assets: \$4.18 billion; U.S. institutional, tax-exempt assets: \$2.65 billion; client contact: Nishil Patel, phone: 44-20-7812-8500
- ▶ Post Advisory Group: total assets: \$16.39 billion; U.S. institutional, tax-exempt assets: \$4.61 billion; CIO: Jeffrey Stroll; client contact: Hugh Costello, phone: 310-996-9727
- ▶ Principal Real Estate Investors LLC: total assets: \$97.87 billion; U.S. institutional, tax-exempt assets: \$61.27 billion; client contact: Michelle Fang, phone: 203-858-9649, email: fang.michelle@principal.com
- ▶ Spectrum Asset Management: total assets: \$17.37 billion; U.S. institutional, tax-exempt assets: \$5.42 billion; CIO: L. Phillip Jacoby; client contact: Mark Lieb, phone: 203-321-1120

Prudential Financial	
751 Broad St., Newark, NJ 07102; phone: 973-802-6000; www.pgim.com	
(millions)	
Total assets managed worldwide.....	\$1,377,417
Total worldwide institutional assets	\$1,021,084
Total U.S. client assets	\$1,023,928
Total U.S. institutional client assets	\$679,368
Total U.S. RIA assets	\$91,330
Total U.S. tax-exempt assets	\$634,336
Total U.S. institutional tax-exempt	\$446,143
Assigned to external managers.....	\$68,002
Internally managed	\$378,141

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX	
Equity.....	20%
Fixed income.....	77%
Equity real estate.....	2%
Cash	1%

INVESTMENT STRATEGIES	
U.S. equity, active	\$60,850
U.S. equity, passive.....	\$8,042
Non-U.S. equity, active	\$1,597
Non-U.S. equity, passive	\$1,258
Global equity, active	\$3,446
U.S. bond, active	\$222,043
Global/non-U.S. bond, active.....	\$15,046
Equity real estate, U.S.	\$6,658
Equity real estate, non-U.S.	\$925
Real estate debt.....	\$21,258
Hedge funds	\$1,422
Private equity, U.S.	\$496
Private equity, non-U.S.	\$908
Direct lending.....	\$640
Privately placed debt	\$29,859
Distressed debt.....	\$17
Mezzanine debt	\$18
Commodities.....	\$196
Cash	\$3,462

ACTIVE U.S. EQUITY STRATEGIES	
GROWTH	
Large-cap	\$18,309
Midcap.....	\$4
VALUE	
Large-cap	\$694
Midcap.....	\$28
CORE	
Large-cap	\$2,597
Midcap.....	\$550
Small-cap.....	\$2,661
Broad-market.....	\$36,007

PASSIVE U.S. EQUITY STRATEGIES	
CORE	
Large-cap	\$6,259
Midcap.....	\$25
Small-cap	\$127
Broad-market	\$1,631
REITs	\$35,955

NON-U.S. STRATEGIES	
Emerging markets equity	\$1,173
Emerging markets equity mandates	\$1,173
Emerging markets debt.....	\$7,499
Emerging markets debt mandates	\$7,499

DEFINED CONTRIBUTION ASSETS	
U.S. INSTITUTIONAL TAX-EXEMPT	
Total.....	\$201,425
Internally managed	\$155,468

WORKFORCE	
Total number of employees.....	37,921
Number of U.S.-based employees.....	14,148

PERCENT U.S.-BASED FEMALE EMPLOYEES	
Total.....	51%
Senior management	35%

PERCENT U.S.-BASED MINORITY EMPLOYEES	
Total.....	35%
Senior management	27%

Chief executive officer: Charles F. Lowrey
 Client contact: Cameron Lochhead
 DC client contact: Michael Miller

The assets of the following subsidiaries or affiliates are included in the figures above:

- ▶ Jennison Associates LLC: total assets: \$164.12 billion; U.S. institutional, tax-exempt assets: \$74.30 billion; client contact: Lori McEvoy, phone: 212-833-0794
- ▶ PGIM Fixed Income: total assets: \$770.23 billion; U.S. institutional, tax-exempt assets: \$190.88 billion; CIO: Craig Dewling/Gregory Peters; client contact: Brad Blalock, phone: 973-367-5431
- ▶ PGIM Private Capital: total assets: \$96.33 billion; U.S. institutional, tax-exempt assets: \$32.52 billion; CIO: Matt Douglass; client contact: Albert Trank, phone: 973-802-8608
- ▶ PGIM Quantitative Solutions: total assets: \$86.28 billion; U.S. institutional, tax-exempt assets: \$15.11 billion; CIO: George N. Patterson; client contact: Jonathan Ryan, phone: 973-802-6099
- ▶ PGIM Real Estate: total assets: \$159.16 billion; U.S. institutional, tax-exempt assets: \$65.27 billion; CIO: Raimondo Amabile; client contact: Mark Chamieh, phone: 973-734-1300, email: realestate.investorservices@pgim.com

OVERLAY STRATEGIES	
U.S. INSTITUTIONAL TAX-EXEMPT ASSETS (NOTIONAL VALUE)	
Total.....	\$248

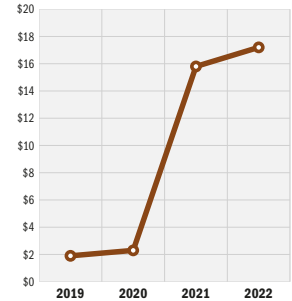
Managers of direct lending assets

U.S. institutional, tax-exempt assets managed internally as of Dec. 31.

The largest managers (millions)

Rank	Manager	Assets
1	Principal Global Investors	\$7,199
2	SLC Management	\$2,913
3	Madison Realty	\$2,038
4	Barings	\$1,655
5	White Oak Global Advisors	\$1,465
6	StepStone Group	\$1,236
7	Prudential Financial	\$640
8	AllianceBernstein	\$51

Asset growth (billions)



Minority- & women-owned managers

As of Dec. 31.

- ▶ Adelante Capital
- ▶ Advent Capital
- ▶ Affinity Investment Advisors
- ▶ Alger
- ▶ Argus Investors' Counsel
- ▶ Ariel Investments
- ▶ Ativo Capital Mgmt.
- ▶ Bivium Capital
- ▶ Brown Capital
- ▶ Cadinha
- ▶ Campbell Newman Asset
- ▶ Causeway Capital
- ▶ Channing Capital
- ▶ Denali Advisors
- ▶ EARNEST Partners
- ▶ Edgar Lomax
- ▶ Garcia Hamilton
- ▶ GIA Partners
- ▶ Gifford Fong Associates
- ▶ GlobeFlex Capital
- ▶ Giovista Investments
- ▶ Hardman Johnston Global
- ▶ Leading Edge Investment
- ▶ LM Capital Group
- ▶ Longfellow Investment
- ▶ Mar Vista Investment
- ▶ Nicholas Co.
- ▶ Nicholas Investment
- ▶ Oak Associates
- ▶ Orleans Capital
- ▶ Palisade Capital
- ▶ Paradigm Capital
- ▶ Payden & Rygel
- ▶ Phocas Financial
- ▶ Pugh Capital
- ▶ Ramirez Asset Mgmt.
- ▶ Redwood Investments
- ▶ RhumbLine Advisers
- ▶ Robinson Value Mgmt.
- ▶ Semper Capital
- ▶ Sit Investment
- ▶ Smith Affiliated Capital
- ▶ Sprucegrove Investment
- ▶ Stacey Braun Associates
- ▶ StoneRidge PMG Advisors
- ▶ TerraCotta Group
- ▶ Weatherbie Capital
- ▶ Westwood Global
- ▶ Wright Investors' Service
- ▶ Zevenbergen Capital

49 Russell Investments

1301 Second Ave., 18th Floor, Seattle, WA 98101; phone: 206-505-7877; www.russellinvestments.com

(millions)	
Total assets managed worldwide.....	\$276,485
Total worldwide institutional assets.....	\$227,159
Total U.S. client assets	\$142,004
Total U.S. institutional client assets	\$108,307
Total U.S. tax-exempt assets	\$108,307
Total U.S. institutional tax-exempt	\$107,911
Assigned to external managers.....	\$33,942
Internally managed	\$73,969
LDI strategies.....	\$14,400
ESG investing	\$6,687

WORLDWIDE ASSETS UNDER MANAGEMENT	
Hedge fund-of-fund assets.....	\$2,535
Mutual fund assets	\$48,511
U.S. 1940 Investment Co. Act	\$31,897
Sponsored ETFs/ETNs	\$564
Investment outsourcing mandates.....	\$149,838
LDI strategies.....	\$22,600
Managed for retirement plans.....	\$22,600
Factor-based strategies	\$46,741
ESG investing	\$35,029

OVERLAY STRATEGIES	
U.S. INSTITUTIONAL TAX-EXEMPT ASSETS (NOTIONAL VALUE)	
Total.....	\$50,384

DEFINED CONTRIBUTION ASSETS	
U.S. INSTITUTIONAL TAX-EXEMPT	
Total.....	\$12,141
Internally managed	\$12,141

WORKFORCE	
Total number of employees.....	1,340
Number of U.S.-based employees.....	696
Number of cybersecurity professionals	7

PERCENT U.S.-BASED FEMALE EMPLOYEES	
Total.....	35%

The Largest Money Managers

Cash	\$68,006
ACTIVE U.S. EQUITY STRATEGIES	
GROWTH	
Large-cap	\$2,032
Midcap	\$105
Small-cap	\$2,093
VALUE	
Large-cap	\$7,892
Midcap	\$32
Small-cap	\$13
CORE	
Large-cap	\$1,804
Midcap	\$1,312
Small-cap	\$286
PASSIVE U.S. EQUITY STRATEGIES	
GROWTH	
Large-cap	\$29,225
Midcap	\$2,683
Small-cap	\$5,857
Broad-market	\$3,074
VALUE	
Large-cap	\$19,407
Midcap	\$4,139
Small-cap	\$7,318
Broad-market	\$1,873
CORE	
Large-cap	\$396,873
Midcap	\$87,812
Small-cap	\$42,616
Broad-market	\$731,389
REITS	\$10,339
NON-U.S. STRATEGIES	
Emerging markets equity	\$10,429
FIXED-INCOME STRATEGIES	
Core	\$383,479
High-yield	\$1,936
Inflation-protected securities	\$13,849
Stable value	\$27,242
ESG INVESTING	
Total	\$71
ESG mandates	\$71
WORLDWIDE ASSETS UNDER MANAGEMENT	
Mutual fund assets	\$4,984,848
U.S. 1940 Investment Co. Act	\$4,641,243
Sponsored ETFs/ETNs	\$2,003,689
Actively managed	\$5,393
Investment outsourcing mandates	\$49,905
Proprietary stable value	\$47,946
ESG investing	\$9,802
ESG mandates	\$9,802
DEFINED CONTRIBUTION ASSETS	
U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$1,783,523
Internally managed	\$1,642,390
Chief executive officer: Mortimer J. (Tim) Buckley	
Chief investment officer: Gregory Davis	
43 Voya Investment Management	
230 Park Ave., New York, NY 10169; phone: 212-309-8200; www.voyainvestments.com	
(millions)	
Total assets managed worldwide	\$343,403
Total worldwide institutional assets	\$257,941
Total U.S. client assets	\$260,336
Total U.S. institutional client assets	\$232,208
Total U.S. tax-exempt assets	\$161,878
Total U.S. institutional tax-exempt	\$157,492
Assigned to external managers	\$20,939
Internally managed	\$136,553
INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS	
ASSET MIX	
Equity	34%
Fixed income	60%
Private equity	3%
Hedge funds	2%
Cash	1%
INVESTMENT STRATEGIES	
U.S. equity, active	\$13,355
U.S. equity, passive	\$16,725
U.S. equity, enhanced index	\$1,045
Non-U.S. equity, active	\$1,132
Non-U.S. equity, passive	\$2,660
Global equity, active	\$517

U.S. bond, active	\$58,278
U.S. bond, passive	\$3,459
Global/non-U.S. bond, active	\$843
Real estate debt	\$3,326
Hedge funds	\$1,597
Private equity, U.S.	\$1,475
Private equity, non-U.S.	\$1,125
Privately placed debt	\$21,618
Renewable energy	\$3,191
Convertible securities	\$4,560
Cash	\$1,646
ACTIVE U.S. EQUITY STRATEGIES	
GROWTH	
Large-cap	\$6,534
Midcap	\$1,761
Smidcap	\$1
Small-cap	\$591
VALUE	
Large-cap	\$934
CORE	
Large-cap	\$2,273
Small-cap	\$381
PASSIVE U.S. EQUITY STRATEGIES	
GROWTH	
Large-cap	\$900
Midcap	\$922
VALUE	
Large-cap	\$1,299
Midcap	\$44
CORE	
Large-cap	\$13,537
Midcap	\$1,635
Small-cap	\$1,098
Low-volatility strategies	\$827
NON-U.S. STRATEGIES	
Emerging markets equity	\$732
Emerging markets equity mandates	\$732
Emerging markets debt	\$623
Emerging markets debt mandates	\$623
FIXED-INCOME STRATEGIES	
Core	\$12,900
Core-plus	\$8,917
Unconstrained	\$663
High-yield	\$1,158
High-yield mandates	\$741
Inflation-protected securities	\$42
Stable value	\$14,352
Bank loans	\$3,405
Risk-parity strategies	\$304
LDI strategies	\$6,388
ESG INVESTING	
Total	\$86,809
ESG mandates	\$36
Equity, active	\$2
Bond, active	\$35
WORLDWIDE ASSETS UNDER MANAGEMENT	
Hedge fund assets	\$2,656
Mutual fund assets	\$124,408
U.S. 1940 Investment Co. Act	\$71,095
LDI strategies	\$13,835
Managed for retirement plans	\$6,388
Proprietary stable value	\$14,050
Factor-based strategies	\$4,608
ESG investing	\$225,234
ESG mandates	\$1,296
OVERLAY STRATEGIES	
U.S. INSTITUTIONAL TAX-EXEMPT ASSETS (NOTIONAL VALUE)	
Total	\$43,736
DEFINED CONTRIBUTION ASSETS	
U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$90,571
Internally managed	\$75,201
WORKFORCE	
Total number of employees	934
Number of U.S.-based employees	913
Number of cybersecurity professionals	95
PERCENT U.S.-BASED FEMALE EMPLOYEES	
Total	35%
Senior management	25%
Investment	17%
PERCENT U.S.-BASED MINORITY EMPLOYEES	
Total	29%
Senior management	21%

Investment..... 25%

Primary custodian: BNY Mellon

Parent company: Voya Financial

Chief executive officer: Christine Hurtsellers

Chief investment officers: Matt Toms, Paul Zemsky, Vincent Costa

Client contact: Jake Tuzza

Wellington Management Group LLP

280 Congress St., Boston, MA 02210; phone: 617-951-5000; www.wellington.com

(millions)	
Total assets managed worldwide	\$1,149,360
Total worldwide institutional assets	\$1,147,946
Total U.S. client assets	\$932,760
Total U.S. institutional client assets	\$931,808
Total U.S. tax-exempt assets	\$227,787
Total U.S. institutional tax-exempt	\$227,521
Internally managed	\$227,521

INTERNALLY MANAGED U.S. INSTITUTIONAL TAX-EXEMPT ASSETS

ASSET MIX	
Equity	39%
Fixed income	53%
Hedge funds	8%

INVESTMENT STRATEGIES	
U.S. equity, active	\$39,399
Non-U.S. equity, active	\$23,518
Global equity, active	\$25,250
U.S. bond, active	\$98,497
Global/non-U.S. bond, active	\$23,098
Hedge funds	\$17,759

ACTIVE U.S. EQUITY STRATEGIES	
GROWTH	
Large-cap	\$8,661
Midcap	\$895
Small-cap	\$916
Broad-market	\$1,585
VALUE	
Large-cap	\$2,569
Midcap	\$229
Smidcap	\$587
Small-cap	\$1,572
Broad-market	\$1,064
CORE	
Large-cap	\$2,977
Midcap	\$6,232
Small-cap	\$7,396
Broad-market	\$2,027
REITS	\$45

NON-U.S. STRATEGIES	
Emerging markets equity	\$6,611
Emerging markets debt	\$8,453
FIXED-INCOME STRATEGIES	
Core	\$19,326
Core-plus	\$7,255
High-yield	\$2,356
Inflation-protected securities	\$1,196
LDI strategies	\$48,035

WORLDWIDE ASSETS UNDER MANAGEMENT	
Hedge fund assets	\$17,759
Mutual fund assets	\$643,415
U.S. 1940 Investment Co. Act	\$643,415
LDI strategies	\$60,311

DEFINED CONTRIBUTION ASSETS	
U.S. INSTITUTIONAL TAX-EXEMPT	
Total	\$23,840
Internally managed	\$23,840
WORKFORCE	
Total number of employees	3,372
Number of U.S.-based employees	2,363
Percent employee owned	100%
Chief executive officer: Jean Hynes	
Client contact: Stefan Haselwandter	
DC client contact: Amy Morse	



INTEREST: Jed Laskowitz cited several reasons for the increase in demand for J.P. Morgan Asset Management's ETFs.

ETFs

CONTINUED FROM PAGE 18

vice president at Dimensional. The rule allowed Dimensional to implement ETFs with the same flexibility it has had with mutual funds for more than 40 years, Mr. Caruso said in an interview.

Dimensional currently offers 30 ETFs, he said, all of which are active transparent ETFs. Those ETFs include seven tax-managed mutual fund-to-ETF conversions. Six of the conversions were completed in 2021 and the seventh was completed in 2022, he said.

"We are very fortunate to be the largest active ETF issuer," Mr. Caruso said.

When it comes to Dimensional's success in growing assets last year, he acknowledged that lower fees likely played a role.

"Having lower fees obviously is beneficial to every investor," Mr. Caruso said.

"When you look across our lineup, we're very competitive in fees. In many cases, we price our strategies more closely to passive than we do to active," he added.

Los Angeles-based Eduardo Repetto, chief investment officer of Avantis Investors, an investment unit of Kansas City, Mo.-based American Century, said all of Avantis' ETFs have expense ratios below 40 basis points. Avantis ETF expense ratios range from 15 to 36 basis points, he said.

"We're always trying to provide an expense ratio that in our view is a good deal for the end client," Mr. Repetto said. "If it's a good deal for the end client and we get a lot of got of assets, a lot of volume, that becomes a good deal for us."

Prior to Avantis Investors' establishment in 2019, Mr. Repetto served as co-chief executive officer, co-chief investment officer and director at Dimensional until 2017, according to Avantis' website.

Avantis currently has 18 investment strategies available as transparent active ETFs. Nine of those strategies are also available as mutual funds offered at the same expense ratios as the ETFs. Avantis also manages separate accounts, and in total manages about \$24 billion, a spokeswoman said. Avantis' lineup includes both equity and fixed-income ETFs.

"We started three-and-a-half years ago with zero, no money," Mr. Repetto said. "And today we are around \$24 billion."

The Largest Money Managers

Bonds

CONTINUED FROM PAGE 1

Gregory Peters, managing director and co-chief investment officer at active manager PGIM Fixed Income, Newark, N.J., said in a phone interview that 2022 represented a quintessential stagflation environment in which all assets do poorly and investors are caught between high inflation and the fear of declining economic growth.

On top of that, fixed income was operating at very low yield levels, he said.

The Prudential Financial subsidiary's active U.S. fixed income AUM totaled \$222 billion as of Dec. 31, down 23% from the prior year, ranking at No. 3.

"I think what 2022 was about was the breaking of the zero interest rate policy glass," Mr. Peters said. "We've been in this environment and all the accompanying excesses of zero or negative interest rates being so low, you know there's nowhere else to go but higher. Particularly in that environment, there was a massive repricing as a consequence."

For perspective, the annualized 5-year return of the Bloomberg U.S. Aggregate was 0.02%.

Historic velocity

Barbara J. McKenna, managing principal and portfolio manager at Longfellow Investment Management Co. LLC, said in a phone interview the historic velocity of the interest rate hikes contributed to the negative returns.

"The one good or bad thing about fixed income is when it does really well, it becomes expensive," Ms. McKenna said. "2022 was really a function of 2020 and 2021 when interest rates plummeted and spreads on credit tightened."

The result was very strong returns that managers had to give back at some point, and it turned out it would all happen in a single calendar year.

Longfellow had \$16.6 billion in U.S. institutional tax-exempt AUM as of Dec. 31, of which 95% was in

active U.S. fixed income, down about 7% for the year.

"The thing that made 2022 so painful is, we expect as interest rates start to rise, principle losses will start to increase, but typically it doesn't happen with such speed," she said.

If everything goes well, bond prices are always moving back to par as they mature, but the dramatic speed in interest rate changes led to historic losses, she said.

"The losses now make bonds very attractive because as long as everything goes according to plan, you're going to go back to par," Ms. McKenna said.

In late 2022 and going into 2023, Ms. McKenna said investors were able to appreciate the cheapness that bonds had as a result of those previous losses.

"It has been a very long time since we've seen this type of yield opportunity in fixed income," she said. "We certainly see more inquiries regularly as clients want to now lock in where on many securities in the corporate sector you could get a 5% yield, and they haven't seen that in decades."

The result is that fixed-income managers are confronting a level of interest in their asset class rarely seen since the Great Recession.

Anders S. Persson, Charlotte, N.C.-based chief investment officer of global fixed income at Nuveen, said in a phone interview the



SPEEDY: Longfellow Investment Management's Barbara J. McKenna said 2022 was painful because of how quickly interest rates rose.

accelerated rise in the federal funds rate turned out to be helpful rather than hikes spread out over two or three years.

"You would have had a lot of negativity around fixed income as an asset class," Mr. Persson said. Over that stretch of time, he said, investors would inevitably say: "60/40 is completely gone! Should we invest in fixed income ever again?"

Instead, he said, the transition from the negative returns of 2022 shifted immediately into positive feedback from investors in 2023.

"It has been a very different mind shift for investors," he said, driven by the fact that in fixed income, investors can have both high income, yield and liquidity, which is appealing. "The mindset or interest from investors more broadly into fixed income is much more front and center, very differently than what I've seen in my quite long career."

Before this year, he said, it was very difficult to get much attention from investors, whether they be retail or institutional.

Now, investors are giving fixed income the time and attention that has been reserved in recent years for more illiquid alternative credit asset classes and the usual bias toward public equities.

"It's become a much more balanced discussion around what are the income opportunities and yield opportunities bringing me, and what is the risk/reward compared to other asset classes?" Mr. Persson said.

As of Dec. 31, Nuveen had \$166.8 billion in active U.S. fixed income AUM for U.S. tax-exempt institutional investors, down 16% from the year before.

Allocation challenges

But while institutional asset owners want to revisit their fixed-income allocations, moving ahead is a challenge, PGIM's Mr. Peters said.

"I think the challenge of actually resetting those allocations is the volatility and the uncertainty," Mr. Peters said. "Investors, CIOs, investment committees and boards aren't necessarily that anxious to



SHIFTING MINDSET: Nuveen's Anders S. Persson cited the rise in interest rates as helping put fixed income more front and center in the thoughts of investors.

move when volatility is so high, so I think you need to see a decline in volatility to see some of those actually move."

"That being said, the dialogue is way up," he said. "Before, I will tell you the question that we were always getting was, 'Why bother?'"

That question has disappeared, but managers still see uncertainty ahead.

"Volatility is likely to remain elevated, the risk of a policy error is exacerbated, and overtightening by central banks may ultimately result in a rally in longer-term rates if markets start to anticipate that tighter policy is unsustainable as economies weaken," said David Leduc, CEO for North America at Insight Investment, in a written response to questions.

Brian P. Kennedy, vice president at Loomis Sayles & Co. and co-portfolio manager on the full discretion team, said in a phone interview that the market seems to be pricing one more fed funds rate hike in July and then a downturn eventually necessitating rate cuts beginning in January 2024.

"The market continues to look forward that there's a downturn coming, there are rate cuts coming, and I'm not sure that's the case," Mr. Kennedy said.

"We think you may see sticky in-

flation here for a longer period of time, and that may leave rates higher for longer assuming the economy holds up and financial stability remains present and evident," Mr. Kennedy said.

As of Dec. 31, Loomis Sayles had \$123.6 billion in active U.S. fixed income AUM for U.S. tax-exempt institutional investors, down 12.6% from the year before.

LDI hit hard

Managers of liability-driven investing strategies were hit particularly hard in 2022. As of Dec. 31, worldwide LDI assets under management totaled \$2.86 trillion, down 26.8% from \$3.9 trillion a year earlier.

David G. Eichhorn, CEO and head of investment strategies at NISA Investment Advisers LLC, St. Louis, said in a phone interview it was a really tough year, because LDI strategies tend to be longer in duration with instruments such as 15-year and longer Treasury STRIPS, or long credit strategies.

"Durations north of 10 years when interest rates go up as rapidly as they did, you end up with meaningful assets under management declines," Mr. Eichhorn said.

The Bloomberg U.S. Long Credit Index lost a staggering 25.3% during the year ended Dec. 31.

ESG

CONTINUED FROM PAGE 17

39% in 2021, the survey found.

"Regardless of whether you are deprioritizing it, it's out there. It's just been slowed down mostly for the political reasons. The market also has been a bit shaky so there might be other priorities," he said.

"Underneath it all, the asset managers still need to provide ESG offerings to their clients, and they still need to have reporting and data," he said. Linedata's latest survey found that 46% of firms expect ESG data management demands to intensify, driven in part by climate and fund disclosure rules from the Securities and Exchange Commission, which are still being finalized.

"The toothpaste is out of the tube. It's further out of the tube in Europe. You can't put it back in," Mr. Moitoso said.

Another 2023 survey released in March by Robeco also found investors regionally divided by the politics of ESG, with 47% of investors in

North America concerned about the impact of ESG politicization on their investment plans, compared with 30% in Europe.

By contrast, European and Asia-Pacific investors at 63% and 57%, respectively, were more concerned about political pressure for failing to act on ESG and climate issues, according to the survey of 300 large institutional and wholesale investors with a collective \$27.4 trillion in assets under management.

Transparency

Despite the politics of ESG in the U.S., "the promotion and disclosure of ESG considerations has not changed in the Schroders strategies," said Marina Severinovsky, New York-based head of sustainability North America for Schroders.

"We believe that both regulators, and clients who have a variety of views and objectives, are becoming quite attuned to how managers position themselves on these issues. Between the buzzwords of both 'greenwashing' and 'greenhushing'

we believe that what our key stakeholders expect of us is transparency and consistency," she said.

Greenwashing represents concerns that firms' marketing of ESG products and strategies is not followed through in practice, and the potential for abuse has attracted regulators in numerous countries to address it.

The more recent phenomenon of greenhushing is the opposite: Asset managers use science-based targets and other ESG criteria, but talk about it as little as possible and disclose only what is required by regulation.

ESG integration is critical across all asset classes, "and represents a higher standard of investment due diligence that includes the risks and opportunities," a message that is communicated consistently and globally, "irrespective of any fluctuations in market or political sentiment," Ms. Severinovsky said.

For Schroders, which uses an internal sustainability taxonomy ranging from ESG integration of most of the firm's assets to categories of sustainable driven, sustain-



'The toothpaste is out of the tube. It's further out of the tube in Europe. You can't put it back in.'

LINEDATA'S BOB MOITOSO

able thematic and impact driven, "we ensure that our clients are well aware of these efforts, which are made with the intention to mitigate risk and deliver more durable investment returns," Ms. Severinovsky said.

U.S. vs. rest of the world

The U.S. drama does not seem to be slowing down regulators and policymakers.

The U.S. Department of Labor finalized a rule last year, which went into effect Jan. 30, that allows ERISA fiduciaries to consider ESG factors.

On June 1, the European Parliament approved draft legislation that would create a corporate sustainability due diligence directive holding companies with 1,000 or more employees to higher human rights and environmental stan-

The Largest Money Managers

Among LDI managers of U.S. tax-exempt institutional assets, NISA was ranked first with \$206.7 billion in assets under management, down 25.8% from the prior year.

The rise in interest rates resulting in lower pension liabilities benefited the funding ratios of corporate pension plans that utilize LDI strategies, although that effect was muted somewhat by the decline in assets due to poor market returns.

Still, Mr. Eichhorn said: "Last year was one of the most active for us for adjusting hedge targets, and they were really across the board increasing hedge targets as interest rates rose."

The U.K. gilt crisis also affected worldwide LDI AUM numbers, said InSight's Mr. Leduc.

"(That) prompted U.K. clients with liability-driven investment strategies to rebalance to maintain their required level of hedging. The revaluation of the LDI portfolios and the need to source collateral in the face of increasing rates impacted LDI and fixed-income assets under management in the short term," Mr. Leduc said.

"Notwithstanding the decline in asset values, the net result has been an improvement in funding position for many U.K. DB schemes and asset managers that proved their risk management expertise and supported their clients through a difficult period are very well placed to benefit from the ongoing popularity of LDI as an investment approach," Mr. Leduc said.

Insight Investment, which manages mostly non-U.S. assets, had \$45.9 billion in LDI AUM as of Dec. 31, down 43.7% from the prior year's total of \$805.8 billion.

Mr. Eichhorn echoed the sentiments of other managers that there is a growing level of excitement around bonds.

"Interest rates as an asset class, not as a hedging class, are very interesting to people," Mr. Eichhorn said. "The long bond is nearly 4%, so that means you obviously can get 4% locked up for 30 years if you're investment-grade credit. Those start to have very, very attractive return profiles."

dards. As proposed, the directive would apply to financial institutions and require asset managers to do due diligence and engage with the companies they hold to minimize impacts.

This September is expected to bring a global framework from the Taskforce on Nature-related Financial Disclosures for companies to manage and disclose their nature-related risks.

While not mandatory, the framework is considered the biodiversity counterpart to the now-prevalent Task Force on Climate-related Financial Disclosures standards to assess and report on the portfolio risks of climate change. It is also expected to spur more ambitious investments addressing biodiversity challenges.

By the end of 2023, global sustainability disclosure standards to help investors understand how a company connects sustainability and value will be finalized by the International Sustainability Standards Board, and Japan is working on standards consistent with ISSB that are expected by spring 2025. ■

Alts

CONTINUED FROM PAGE 3

P&I's data show.

"Last year saw a marked shift in the macro environment, which feels as though is more than just a short-term pivot in the market," said Darren Wolf, global head of investments – alternative investment strategies at abrdn PLC. "With this regime shift, we do not think investors can follow the same playbook over the next five years that they followed the prior 10 years – allocators (investors) are adjusting portfolios accordingly towards those strategies better suited for a higher-volatility, higher-rate environment."

For example, U.S. institutional investor 2022 hedge fund portfolios reflected asset allocations adopted in 2021, which was "a very different market environment," Mr. Wolf said in an emailed response to questions. In 2023, hedge fund AUM are increasing as investors adjust their portfolios for volatile market and high interest rates, he said. Most relative value, market-neutral or macro strategies "thrive" in a high-interest-rate and volatile market environment, Mr. Wolf said.

However, unlike private market assets, hedge funds mark their underlying assets to market, he said. Because hedge funds allow periodic subscriptions and redemptions, the net asset values of hedge funds' assets are struck on a monthly basis, Mr. Wolf said.

This difference had an impact in 2022, alternative investment industry executives said.

Public vs. private

In 2022, there was a massive dispersion between public and private markets, said Michael Langdon, director of private markets for the Oregon State Treasury Investment Division, speaking at the March 31 meeting of the Oregon Investment Council, which runs the \$92.9 billion Oregon Public Employees Retirement Fund.

When it comes to private markets asset values, in the short term there is a great deal of smoothing, Mr. Langdon said in response to questions about private market valuations from a council member.

Managers have "a great incentive not to be the first one to write down their portfolios" because they still need to raise fresh capital, he said.

Oregon investment staff expects that it will take about four to six more quarters to see the asset declines already experienced in the public markets to appear in private market portfolios, depending on the private market asset class, Mr. Langdon said.

In private equity, with the rebound in the public markets, public and private market valuation multiples are slowly starting to converge.

"It is the current expectation, but that could change tomorrow," Mr. Langdon said.

"In the short term, there is skepticism that private market values are perfectly reflective of reality," but over the long term it evens out, he said.

Over Oregon's 40-year history of investing in private equity, there's never been a period of time in which realizations from portfolio

asset sales weren't in excess of stated valuations of those assets in managers' portfolios, Mr. Langdon said.

"Generally, there's a 20% to 60% pop at exit," mostly from value creation by the private equity manager, he said. "Over time, we would expect there to continue to be a premium at exit," Mr. Langdon said.

"We don't think they are sandbagging valuations," he added.

Private equity increased by 7% to \$45.8 billion in the year ended Dec. 31, P&I money manager data shows.

Hits to real estate first

Among the private market asset classes, Oregon's investment staff expects write-downs to show up in real estate sooner than other asset classes, possibly over the next several quarters, because there are more transactions in real estate, Mr. Langdon said.

P&I's money manager report shows that private real estate AUM rose 11.4% to \$482.7 billion in the year ended Dec. 31, while the real estate investment trusts dropped 21.1% to \$129.7 billion in 2022.

REITs can presage private real estate's future, industry insiders say.

"Our belief is that the public market generally overshoots but they are (a) good indicator of the direction of private real estate values," said Peter Rogers, Chicago-based director, investments – Americas head of real assets research at Willis Towers Watson PLC.

And even while real estate AUM increased in 2022, it was still a tough year for all real estate sectors, with few transactions, he said.

"2022 was a tale of two halves for private real estate," Mr. Rogers said. Total returns for core private real estate were up approximately 12% through the first half of the year but began repricing in the second half of 2022, to end the year up roughly 7.5%, said Mr. Rogers, with data reflective of the NCREIF Fund Index – Open End Diversified Core Equity index.

The market repricing continued into the first quarter of 2023, with appraisal values dropping roughly 10% from their mid-2022 peak at the end of the first quarter, Mr. Rogers said.

"Based on where we believe current transaction market pricing to be, we expect further appraisal write-downs in the coming quarter," he said.

Property sectors that did well were those that were supported by "secular and demographic tailwinds such as single-family rental, student housing, medical office, self-storage, data centers," Mr. Rogers said.

One of the most favored, multifamily, witnessed a slump in transactions in 2022, said Sean Burton, Los Angeles-based CEO of multifamily real estate manager Cityview, which has \$5 billion in assets under management.

Notwithstanding rent growth as well as high occupancy in its apartment properties throughout 2022, the rapid rise in interest rates and impact of fluctuations of capitalization rate, which is a measure of property values, the spread between the price a buyer is willing to spend and the price the seller is willing to sell was "fairly insurmountable," Mr. Burton said.

"As a result, we continued to be

patient with our capital and plan to wait for the distressed buying opportunities that we expect to hit the market towards the end of 2023 and 2024," Mr. Burton said.

As for Cityview's existing assets, they are "well capitalized with reasonable leverage levels and we don't have an urgent need to sell anything," he said.

Cityview executives are bidding their time and waiting to sell properties in its portfolio in "a more advantageous seller's market," Mr. Burton said. In the meantime, they are focusing on maximizing net operating income, controlling operating expenses, mitigating downside risk and executing on its business plans, Mr. Burton said.

Not all property types equal

Property types such as office and certain retail properties for which there has been a fundamental shift in how people utilize the real estate will likely have more write-downs, he said.

Still, stronger property types like industrial and multifamily have seen a dislocation, but it is



PRESIDENT: Julie Ingersoll said CBRE saw the reshaping of how offices would be used even before the pandemic hit.

expected to be temporary and from that opportunities will arise, Mr. Burton said.

Despite multifamily being a more favored asset class, certain apartment building portfolios and areas are facing more headwind pressures than others, he explained.

"Portfolios largely made up of assets that were banking on significant rent growth for their valuations and those in areas that are seeing an abundance of new supply – like the Sunbelt cities – are going to feel more acute pressures than those in supply-constrained markets," Mr. Burton said.

Cityview expects to see distressed buying opportunities to hit over the next six to 18 months, with a relatively short buying window for quality distressed assets, he said.

Overall, Julie Ingersoll, chief investment officer for Americas direct real estate strategies at CBRE Investment Management, said that even before the pandemic her firm's Americas portfolios were underweight office as well as retail. CBRE executives believed there would be a reshaping of the way offices would be used and the pandemic accelerated trends that were already in place, she said.

The outlook for office worsened in 2022, Ms. Ingersoll said.

CBRE Investment Management's real estate assets under management rose 32.4% to \$14.3 billion managed for U.S. tax-exempt insti-

tutional investors in the 12 months ended Dec. 31.

Ms. Ingersoll attributed much of the increase to new funds raised in 2021 that amassed a significant amount of capital, even though CBRE took a "market leading write-down" for properties it could get access to appraisals in the fourth quarter.

"We thought it was prudent to recognize the new normal," she said.

These fundraises included \$2.3 billion for CBRE Strategic Partners U.S. Value 9 and its co-investment vehicle that closed in August 2021.

A portion of the capital raised for the Americas was earmarked for development and in 2022, some of those projects were completed, Ms. Ingersoll said. Among them was a life science property that had better than expected leasing and logistics properties that exceeded expectations, she said.

Christopher Merrill, Chicago-based co-founder, chairman and CEO of Harrison Street Real Estate Capital, which focuses on demographic-driven, needs-based real estate such as student and senior housing, said that in 2022 the firm "stayed in its demographic lane."

"Our asset classes are tougher to access and are more fragmented" because of ownership of the properties, he said. More recently, Harrison Street has expanded into life sciences, data centers, build-to-rent housing and social infrastructure such as university and college campus power projects.

Even so, fundraising has been slower than in prior years, Mr. Merrill said.

Harrison Street had \$32.2 billion in assets managed for U.S. institutional tax-exempt investors as of Dec. 31, up 17% from a year earlier.

Real estate debt

For real estate lenders like Mesa West Capital, 2022 was a story with two chapters. Property markets were highly liquid with transaction activity ramping up for multifamily and industrial properties in the second half of 2021 and first half of 2022, said Ronnie Gul, Los Angeles-based co-CEO of Mesa West. There were fewer office transactions but the sector was still liquid, he said.

With the stunning rise in interest rates, the property markets froze up in the second half of 2022, Mr. Gul said.

Even so, real estate debt assets under management for U.S. institutional tax-exempt investors grew 5% to \$75 billion in the year ended Dec. 31, P&I data show.

These days, quality assets within multifamily and industrial sectors are finding buyers and lending capital, he said. For offices, there needs to be more clarity to see what demand for those buildings will be, Mr. Gul said.

In the commercial real estate world, it takes time for the impact of the higher interest rates to result in price discovery in which buyers and sellers determine what prices should now be, he said.

"If history is any indicator, it would not surprise us if it takes the balance of this year and next year" for there to be price discovery, Mr. Gul said. However, he added, it is sector specific, market specific and asset specific. ■

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Wednesday, June 14 | 2:00 pm ET

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Investors and solutions providers are increasingly struggling with the investment solutions industry's current lack of standards, one of several critical challenges hindering a continuation of the industry's recent rapid growth.

Chestnut Advisory Group is launching the CHESTNUT SOLUTIONS INSTITUTE™, a membership based independent think tank, designed to address these challenges by providing market intelligence and insight to the entire solutions/OCIO ecosystem. This webinar represents the first step in the Institute's mission to help educate and inform investors and solutions partners and to influence burgeoning new solutions industry standards.

In this webinar, Chestnut Managing Partner Ravi Venkataraman and a panel of solutions business leaders, each of whom are Institute Founding Members, will discuss key issues facing investment solutions businesses today, including:

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Canadian Pension Risk Strategies

Thursday, June 22 | 2:00 pm ET

To combat inflation, central banks have adopted measures such as raising policy interest rates and implementing quantitative tightening. These actions are having a dampening effect on economic growth and are raising concerns that a recession is imminent – the question is “How long will it last?” and “How does this affect pensions in Canada?”

On June 22nd at 2:00PM EST, industry experts share various approaches to protecting pensions:

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Managers

CONTINUED FROM PAGE 1

trillion and State Street Global Advisors, off 15.9% to \$3.48 trillion. The rest of the top 10 all stayed within one or two positions of their year-earlier rankings.

The ranks of the 10 largest managers by total worldwide institutional AUM were similarly stable with one major exception: Vanguard Group, the perennial runner-up to BlackRock in that category, finally claimed the top spot with a 7.1% decline to \$5.02 trillion. BlackRock tumbled 15.1% to \$4.83 trillion. The next three AUM leaders remained in place, with SSGA off 16.9% to \$2.41 trillion; Fidelity down 14.8% to \$1.73 trillion and BNY Mellon Investment Management dropping 25.9% to \$1.45 trillion. Among the top 10, only Goldman Sachs Group reported a rise in assets, up 5.9% to \$1.44 trillion, on the back of its acquisition last year of The Hague, Netherlands-based NN Investment Partners. That inorganic AUM gain of more than \$300 billion lifted Goldman to sixth place from ninth the year before.

But if hard times were the order of the day for 2022, managers of private market assets didn't get the news, reporting continued asset gains for segments such as real estate, venture capital, infrastructure, private equity and private credit.

Brookfield jumps 14 spots

Brookfield Asset Management, a Toronto-based manager of infrastructure, private equity, real estate and credit, rose to 26th place with \$666.1 billion in total worldwide AUM from 40th place in 2021, while New York-based KKR & Co. advanced to 37th place from 45th and Ares Management Corp., a Los Angeles-based real estate, private equity and credit firm, jumped to 45th place from 60th.

Whether the resilience shown by those market segments will leave money management executives as eager to diversify into private markets as their institutional clients in

recent years is an open question.

According to some analysts, they should be.

The end of extraordinary monetary policy stimulus, which helped money managers absorb rising costs, falling fees and surging demand for passive strategies over the past decade, will force the industry to look to high-margin private market strategies for the revenue growth previously driven by an ever-rising tide of asset prices, said Chris McIntyre, New York-based managing director and partner with Boston Consulting Group.

A recent BCG report on the industry tied roughly 90% of money manager revenue growth over the past decade to the “second order consequences” of the central bank's efforts to levitate markets through the global financial crisis and the pandemic downturn.



DIVERSIFY: Christine Hurtsellers said about a third of Voya's assets are in private markets.

Absent that tailwind, money managers will need to restructure their businesses going forward to garner at least a third of their revenues from private market strategies, he said.

Market participants point to Franklin Templeton's recent move to acquire Boston-based Putnam Investments – adding scale to counter the fee and cost pressures facing active managers of stocks and bonds – as a sign of the times.

Need to diversify

If the push to add private market capabilities is well underway, the resilience those market segments enjoyed in 2022 could provide added momentum.

“As a result of last year, some of the people who maybe had their head in the sand ... or sort of resisted (moving into private markets) are going to be forced to look at some of these other things,” said R. Bruce Cameron, partner and co-founder of Berkshire Global Advisors, a New York-based investment bank focused on the global money management industry.

Shifting a 60% equity/40% bond mix to a 50% equity, 30% bond, 20% private markets mix is the likely course of action for investment managers thinking about how to di-

versify their businesses going forward, agreed John Delaney, a Philadelphia-based portfolio manager with Willis Towers Watson PLC.

Some money managers say they've either cleared BCG's 30% hurdle or are close to doing so.

“I would say we're in that ballpark,” said Mike Perry, head of global client group and global product with Chicago-based Nuveen, which rose one position to 18th place for total worldwide AUM in the latest rankings with a 13.6% decline to \$1.09 trillion. Having about \$250 billion in less-volatile private market assets such as private credit, real estate and farmland helped Nuveen's book of business remain relatively resilient last year, he said.

Christine Hurtsellers, CEO of Atlanta-based Voya Investment Management, said her firm is “already there ... with about a third of our assets in private and more than that in terms of revenue.” Voya climbed to 48th place in the latest survey on the back of a 15% gain in AUM to \$343.4 billion from 61st place the year before, powered by the acquisition of Allianz Global Investor's U.S.-based equity and private placement investment teams, with combined assets of roughly \$100 billion, in exchange for a 24.9% stake in Voya.

Goldman Sachs Asset Management is moving in that direction, with more than 20% of its revenues coming from alternatives in the quarter ended March 31, said a GSAM spokeswoman.

That, in turn, reflects the continued focus of GSAM's clients – whether sovereign wealth funds, financial institutions, public pension plans, endowments and foundations, individuals or family offices – on private markets as an unusual source of uncorrelated, diversified returns, said J. Christopher Kojima, partner, global head of client solutions and capital markets at New York-based GSAM.

Mr. Kojima said GSAM takes a solutions approach, rather than a product-focused approach, to meet those client needs, bringing diversified, scaled capabilities across “private equity, private credit, secondaries, GP stakes, growth equity, real estate (and) infrastructure” to the table to serve institutional clients looking now to partner with ever fewer providers.

As of Dec. 31, private markets as-

Security

CONTINUED FROM PAGE 2

the company's board of directors made the decision to tighten security for Messrs. Fink and Kapito last year, to “address potential threats to their safety that have originated in connection with their roles.”

A spokesman for BlackRock declined to comment on what security concerns led to the decision to upgrade Messrs. Fink and Kapito's home security, saying only that “BlackRock has a robust security program in place aimed at protecting our employees and offices.”

The criticism of BlackRock comes from across the political spectrum. Last fall, a small group of climate activists protested BlackRock's investment in fossil fuels at the company's New York headquarters, blocking escalators and reportedly strewing coal across the floors. Earlier this year, climate activists heckled Mr. Kapito at a fi-

nancial conference in New York. The company has also drawn the ire of Republicans, who claim BlackRock's ESG investing is an overreach that unfairly discriminates against the energy industries in real states.

And in France earlier this year, anti-pension reform protesters stormed BlackRock's Paris headquarters with smoke bombs and flares.

Threat assessment

Matthew J. Dumpert, managing director of Kroll's security risk management practices and a former special agent with the U.S. State Department, said it was “not atypical at all” for a company like BlackRock to provide additional security benefits to its executives. Kroll is a global risk consulting firm.

Executive protection programs such as the one put in place by BlackRock are “very standard in Fortune 200, Fortune 300” companies, according to New York-based

Mr. Dumpert, and “can range in size and composition from offering simply a car and driver for commute to and from work to 24 hour a day, seven days a week guards at residences, guards that travel with the executives in the family, private and charter aircraft, (and) threat intelligence reporting when they travel overseas.”

The level of protection provided depends on the threat environment for each executive, Mr. Dumpert added.

“These things are costly, so to get these by a board of directors or independent investors is not easy.”

Though Mr. Dumpert declined to provide an estimate for how much round-the-clock residential security services could cost, another security provider, Kent Moyer, founder, president and CEO of Los Angeles-based World Protection Group, suggested a minimum cost could be anywhere from \$500,000 to \$3 million per year.

Both men said that, if there's a demonstrated threat environment,

sets accounted for \$260 billion of GSAM's \$2.55 trillion in total worldwide assets, with a record \$72 billion in commitments for the year and another \$14 billion for the quarter ended March 31, the spokeswoman confirmed.

Others remain at an earlier stage of their private markets journey, including Federated Hermes Inc., which rose to 25th place from 32nd on the back of strong money market fund inflows that left the Pittsburgh-based firm's worldwide institutional AUM roughly flat at \$618 billion.

Federated's 2018 acquisition of London-based Hermes Investment Management, with \$47.2 billion in AUM including private equity assets, started the firm on the road to building a private markets business that could make a significant contribution to Federated's revenues, said J. Christopher Donahue, chairman, president and CEO of Federated Hermes.

Currently, with Federated's \$21 billion in real estate and private equity assets accounting for 10% of the firm's revenues, it's starting "to move the dial," said Mr. Donahue, offering "wonderful diversification" for a business that had been balanced among money market, equity and bond assets. With private markets accounting for more than half of Federated's current mandate pipeline of \$4.8 billion, that high-margin segment of the business is poised for continued growth, he said.

Meanwhile, Scott Couto, head of North American institutional and intermediary distribution, product and marketing with Columbia Threadneedle Investments, which fell to 30th place from 25th with a 22.6% decline to \$585.2 billion in global AUM, said his firm is moving to meet growing demand for private market exposures not just from institutional clients but from the wealth management side as well. Every big wealth management firm Columbia Threadneedle's team has met with recently said their clients were looking to lift alternatives allocations to between 15% and 20% of their portfolios from 5% at present, focusing "our efforts around bringing some of these alternative return streams in the North America wealth market," he said, adding "you should watch for what we do there."

Boston Consulting Group's Mr.

McIntyre said at present hardly any traditional managers are getting a material revenue contribution from private markets. Among the top 50, "you can list them on one hand, probably," he said.

Down, but not out

But despite agreement that firms focusing on actively managed equities and bonds are facing, on balance, a tougher environment going forward, a number of managers insist they have the culture and investment chops to make those asset classes the cornerstone of successful businesses for decades to come.

"Profitability was down for asset managers last year and we weren't immune to that," said Michael W. Roberge, chairman and CEO of Boston-based MFS Investment Management, which saw total and institutional AUM each decline 21% to \$547.6 billion and \$186.3 billion, respectively. "But our perspective on it is, hopefully clients give us their money to manage over 10 years and we're not going to overreact" to short-term developments.

Baillie Gifford, an Edinburgh-based manager of global equities, saw its total and institutional AUM plunge 41% to \$268.7 billion and \$216 billion, respectively, the sharpest decline among P&I's top 100 ranked managers and falling to 51st from 37th on the institutional rankings. It likewise is culturally predisposed not to overreact to any short-term development, said Scott Nisbet, partner and head of global strategy for the more than 110-year-old firm.

A year "happens to be the time it takes the Earth to revolve around the sun. That's it," noted Mr. Nisbet. "If you look to just 2022 and say 'Oh my God, we need to change everything,' that is rarely the right thing to do in investing and probably means you end up doing exactly the wrong thing at exactly the wrong time," he said.

Instead, active management should continue to reward managers who deliver benchmark-beating returns over the long term, and the competitive backdrop has become more conducive for doing so

since last year, those executives say.

Following a decade or more of a rising tide lifting all boats, the environment of higher inflation and higher dispersion that's likely to prevail over the coming five to 10 years should be better suited to active management, and as long as MFS continues to deliver value for clients over the long term, it will stay relevant, Mr. Roberge said.

"Active management is alive and kicking," agreed George Gatch, CEO of J.P. Morgan Asset Management. To the extent tighter financial market conditions pressure managers to devote fewer resources to their

tension of the skill set of being long term, not being risk averse, going for home runs, accepting mistakes, and the kind of investment culture we have for equities we think translates very nicely to private companies," Mr. Nisbet said. Still, the company's business remains 95% focused on global growth equities, he said.

BCG's Mr. McIntyre said he expects traditional firms to embrace private markets more passionately going forward. "Most of what we see people doing today is buying little companies, like they're experimenting. I think in five years, you're

Higginbotham said. "We just tend to embed it, not as a stand-alone, but embed it in the products that we offer to clients, particularly in our small- and midcap strategies," he said, calling it "one of the best kept secrets in asset management."

T. Rowe Price was the 17th largest global institutional manager, with \$737.5 billion in AUM down 18% last year.

Head count increases

Meanwhile, another P&I survey result — a hefty 12.6% jump in global head count to 645,309 — suggests money managers continued to take

a long view of their businesses amid last year's capital markets fireworks.

George Walker, chairman and CEO of New York-based Neuberger Berman, which climbed to 43rd place from 47th place on the back of a relatively modest 7.2% drop in AUM to \$427.3 billion, said his firm is looking to play offense by adding investment talent at a time when many firms will likely be squeezed by rising costs and falling revenues.

Neuberger added 248 people in 2022, a 10% increase over 2021, following a 7% increase the year before, said Mr. Walker, adding that current plans call for a further 6% increase for the current year.

The bigger issue, said Mr. Walker, is "there are a lot of firms out there that had negative flows," which had been offset for years by rising markets.

Now, with markets down, those competitors face a "real problem," likely to force many competitors to cut costs, exit non-core businesses, reduce research investment as well as their footprint "and I'm gonna instead do the opposite," he said.

Baillie Gifford's Mr. Nisbet likewise pointed to periods of stress such as 2022 and 2008 as some of the best opportunities to invest in new talent. The global financial crisis was "a great time to be recruiting ... people were getting chucked out of investment management firms left, right and center in this panic to reduce costs." Baillie Gifford "did quite a lot of hiring" in 2022, he said. ■

'If you look to just 2022 and say "Oh my God, we need to change everything," that is rarely the right thing to do in investing and probably means you end up doing exactly the wrong thing at exactly the wrong time.'

BAILLIE GIFFORD'S SCOTT NISBET



active capabilities, the more opportunities JPMAM's global army of 300 equity and credit analysts will have to exploit market inefficiencies on behalf of clients, he said.

JPMAM's private markets AUM topped \$200 billion last year but the firm's publicly traded equity business remained vibrant as well, with \$25 billion in active equity inflows for the year and a further \$19 billion for the quarter ended March 31, as well as strong demand for newer offerings such as active exchange-traded funds, Mr. Gatch said.

Baillie Gifford, meanwhile, began dipping its toes into private market waters just over a decade ago when it made an investment in Hangzhou-based Alibaba Group roughly two years before that now giant company went public.

"We've been running a little bit of money in private equities in the last few years ... very much an ex-

going to have traditional and you're going to have what used to be called 'alternative' and they're going to be the same thing ... they're going to be integrated," he said.

T. Rowe Price Group Inc., the Baltimore-based active equity heavyweight that ranked 15th in P&I's latest tally with \$1.27 trillion, down 22% from the year before when it ranked 13th, could be one example of what that integration could look like.

Robert Higginbotham, T. Rowe's head of global distribution who also oversees the firm's global product group and brand marketing, noted that in addition to T. Rowe's acquisition just over a year ago of Oak Hill Advisors — a New York-based private credit shop with more than \$50 billion in assets — the firm has less visible but still quite significant private equity exposure.

"We're actually one of the larger managers in private equity," Mr.



CAUTIONS: BlackRock has been paying for security guards and upgraded home security systems for Larry Fink in light of safety concerns related to his role as CEO.

executive protection services can often be non-taxable.

BlackRock did not comment on

whether the company was planning to roll out similar benefits for any of the company's other executives. ■

Putnam

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management industry for roughly \$3.9 billion in early 2007. At the time, Putnam had roughly \$192 billion in assets under management, including more than \$22 billion for PanAgora Asset Management, its quantitative money management affiliate.

This year, Franklin Templeton will be acquiring a Putnam with \$136 billion in AUM. PanAgora, with \$33 billion in assets, will remain with Great-West Lifeco.

Great-West Lifeco's latest financial statements show the firm's U.S. asset management business posting losses for the past five quarters through March 31.

Great-West Lifeco executives, in a news release, suggested a leading asset management firm such as Franklin Templeton will be better placed to grow Putnam's business. "Franklin Templeton is a diversified global asset management firm,

well-positioned to take Putnam's strengths to the next level," said Paul A. Mahon, president and CEO of Great-West Lifeco.

PanAgora, by contrast, is a keeper, Great-West's executives said on an call with analysts May 31 to explain the deal. "We like PanAgora as a hold because it's a good business and we think (it) has real upside to it," one executive explained. Putnam has offices in Boston, London, Munich, Singapore, Sydney and Tokyo.

"This is a compelling transaction for Franklin Templeton, and we are excited about the numerous opportunities that will be unlocked by this long-term strategic partnership with the Power Group of Companies including Great-West," said Jenny Johnson, president and CEO of Franklin Templeton, in a news release. "Power and Great-West are global leaders across financial services, particularly in the wealth, insurance and retirement channels. With outstanding investment performance, Putnam will add complementary capabilities to our existing

specialist investment managers to meet the varied needs of our clients and will increase Franklin Templeton's defined contribution AUM. We are pleased to welcome Great-West as a strategic investor, along with the impressive team at Putnam."

A spokeswoman for Franklin, meanwhile, said her firm expects to continue to use the strong Putnam brand name after closing the deal, and execute the acquisition in a way that minimizes disruptions to Putnam's investment teams and client relationships.

Morgan Stanley & Co. and Rockefeller Capital Management served as financial advisers to Great-West Lifeco and Putnam, while Sullivan & Cromwell served as legal counsel to Lifeco and Putnam. Ardea Partners served as lead financial adviser and Broadhead Capital Partners provided financial advice to Franklin Templeton. Willkie Farr & Gallagher served as legal counsel.

Power Corp. of Canada is the parent company of Great-West and Power Group of Companies. ■

AT DEADLINE

BlackRock to buy Kreos

BlackRock agreed to acquire growth and venture debt financing firm Kreos Capital, in a deal that plugs a gap for the money manager giant in the EMEA region.

The agreement adds to the \$9.09 trillion manager's position in global credit money management, adding capabilities in a high-growth part of the private debt market, according to a spokeswoman.

Kreos provides growth and venture debt financing to companies in the technology and health-care industries. The 45-person team will join BlackRock, with the investment team integrating into BlackRock's European private debt platform. Kreos leadership will continue to be responsible for the firm's investment strategies. The business was privately owned by its founders.

Funds will take on the BlackRock brand.

Kreos has committed more than €5.2 billion (\$5.6 billion) across more than 750 transactions in 19 countries.

Scenario modeling to rise

The vast majority of U.S. public pension funds plan to increase spending on scenario modeling and stress testing in the next two years, according to a report from Rotterdam, Netherlands-based risk management consultant Ortec Finance.

According to interviews conducted in February with 50 fund executives overseeing a total of \$1.32 trillion in assets, 90% plan to increase spending on those items to help manage market volatility.

"Many pension plans saw the value of their assets fall last year in what was a tough time for markets and are clearly preparing for future market shocks," said Marnix Engels, managing director, pension strategy, at Ortec Finance, in a news release June 7.

Ninety percent of public pension fund executives said they are confident that inflation is on the decline, with 52% saying they believe inflation could be 3.3% or lower by the end of 2023.

HPS closes fund at \$7.3B

HPS Investment Partners closed its latest direct lending fund, HPS Core Senior Lending Fund II, with \$7.3 billion, including parallel investment funds and accounts, a spokesman said in an email.

HPS Core Senior Lending Fund II will invest in privately originated, floating rate, senior secured loans for middle-market and upper-middle-market companies with more than half of the aggregate capital in North American and the remainder in Western Europe and Australia, according to a report by one of the fund's investors, £35 billion (\$43.6 billion) Brunel

Pension Partnership in England.

Rule aims at swaps

The SEC adopted a rule package June 7 aimed at preventing fraud, deception and manipulation in security-based swaps, and preventing influence over chief compliance officers in the space.

"Any misconduct in the security-based swaps market not only harms direct counterparties but also can affect reference entities and investors in those reference entities," SEC Chairman Gary Gensler said in a news release June 7.

The first rule in the package identifies a host of illegal activities in connection with security-based swap transactions. This includes "employing or attempting to employ any device, scheme, or artifice to defraud or manipulate"; "obtaining money or property by means of any untrue statement of a material fact or any omission of a material fact"; "engaging in any act, practice, or course of business that operates or would operate as a fraud or deceit upon any person"; and more, according to an SEC fact sheet.

The second rule prohibits "any officer, director, supervised person, or employee of a security-based swap entity, or any person acting under such person's direction, to take any action to coerce, manipulate, mislead, or fraudulently influence" the chief compliance officer of the security-based swap entity, the fact sheet states.

SWF deals drop

Sovereign wealth fund investment deals fell more than one-third in 2022 in the face of increasing uncertainty, according to the IFSWF's annual review for 2022 released Wednesday.

Investing in Uncertain Times is based on an International Forum of Sovereign Wealth Funds proprietary database of sovereign wealth funds' direct equity investments since 2015.

While the total annual value of publicly disclosed direct investments declined by only 3.8% to \$71.3 billion in 2022, the number of deals fell by more than a third to 306 from 468 in 2021, which saw record highs.

"Although most economies re-opened in 2022 after the COVID-19 pandemic, Russia's invasion of Ukraine shaped the investment environment and turned it upside down," the review said.

Between moves in Europe to reduce reliance on Russian gas, inflation in emerging markets, supply chain disruptions and continued pandemic restrictions in China, "the investment environment of 2022 was more uncertain than early 2020's extreme volatility and the most turbulent since the global financial crisis of 2008," the review said.

Vanguard

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could one day restrict what percentage of a public company that fund complexes can own, although "right now there really isn't anything like that. Even (Vanguard's late book said) John Bogle in his last book said the 1940 Act should be updated to keep a few companies from getting too big," Mr. Balchunas said.

There are two reasons Mr. Balchunas believes Vanguard is outpacing BlackRock: the continued march of passive equity and bond index investing, and last year's bear market.

"Bull markets are good for Vanguard, but bear markets are great," he said. Vanguard investors practice "Navy SEAL discipline, and generally don't sell in downturns," said Mr. Balchunas, author of the book "The Bogle Effect."

Vanguard's passive market index and ETF assets "grow market share at double the rate of their competitors during downturns. They may have taken in less money last year, but everyone else got creamed. So Vanguard's market share grows because there's no more asset appreciation lifting markets."

Passive investing continues to represent a significant piece of each manager's business. Earlier this month, BlackRock won a mandate from the \$92.9 billion Oregon Public Employees Retirement Fund, Salem, for up to \$1 billion in its BlackRock Russell 3000 index fund.

BlackRock had \$5.53 trillion in index assets as of June 30, 2022, compared with \$5.26 trillion for Vanguard, according to *Pensions & Investments* data.

But Vanguard grew faster over the past five years in several areas:

Vanguard's passive U.S. equity assets managed for U.S. institutional tax-exempt investors grew 57% since 2017 to \$133 trillion, while BlackRock assets grew 50% to \$976 billion.

Meanwhile, in passive U.S. fixed income for U.S. institutions, Vanguard lost 8.5% in 2022, but grew 57% since 2017 to \$333 billion, compared with losses of 22.7% and 19.2% over one and five years, respectively, for BlackRock, to \$165.6 billion.

In a statement, a BlackRock spokesman said: "BlackRock's strength in serving institutions globally resulted in more than \$192 billion in annual institutional long-term net inflows and more than \$4.8 trillion in institutional AUM as of year-end 2022, not including

flows into our industry-leading ETFs. We are proud of our history as the largest provider of ETFs, with more than \$3 trillion assets under management globally, of which approximately 17% is held by our institutional clients in U.S. ETFs alone. Combining our publicly reported institutional AUM, with the ETFs held by our institutional clients, positions BlackRock as the clear leader serving institutions around the world."

Defined contribution plans

Vanguard has been the largest U.S. institutional tax-exempt manager since 2020, when it surpassed BlackRock, propelled by strong growth in its defined contribution business.

Vanguard U.S. defined contribution plan assets grew by 56% over five years to \$1.78 trillion in 2022. Although BlackRock also increased

its DC assets to \$1.16 trillion in 2022, Vanguard simply grew faster, and cemented its lead: Over the five-year period, Vanguard gained a net \$331 billion in U.S. DC assets over BlackRock.

"We've made a number of bold investments in our business," said John James, managing director of Vanguard's institutional investor group, in a statement. "A keystone part of our retirement offer is Vanguard's Target Retirement series. The glidepath is informed by four decades of insights from millions of participants," Mr. James said.

Vanguard's growth in U.S. target-date fund assets over many years illustrates the compounding effect: Those grew to \$741 billion in 2022 from \$438 billion in 2017; meanwhile, BlackRock's grew over the same five year period to \$339.6 billion from \$37 billion. Although BlackRock target-date assets grew 20% per year, Vanguard grew 25% a year, and that cemented its lead.

"Vanguard is the safe choice," said Jeffrey DeMaso, New York-based director of research for Adviser Investments LLC, in an interview. "If you're a small- or mid-sized business, picking Vanguard for 401(k) relocations gives you a chance of a lawsuit. You can't get fired," Mr. DeMaso said. Adviser Investments manages about \$6 billion in portfolios for investors.

Vanguard's overall business is roughly 95% U.S. client assets, at \$6.9 trillion, while BlackRock's is 64% domestic, at \$5.4 trillion, said Mr. DeMaso, calling it a "huge distinction."

As the low-cost provider, "it's always easy to up your allocation to Vanguard," said Amanda Tepper, founder of Naples, Fla.-based



PROTECTION: Jeffrey DeMaso called Vanguard a 'safe choice' for small and mid-sized plan sponsors.

and Growth VI, run by Sequoia Capital China, while the University of Texas Investment Management had \$64.5 million committed to the same two funds.

Alaska Permanent in 2020 committed \$42 million to Sequoia China Venture VIII and Growth VI, according to *P&I* data.

The VC funds have invested in Chinese companies that develop or use AI technologies. For instance, Sequoia Capital China Growth Fund VI has invested in artificial intelligence gaming firm Chaocanshu Technology, having led a \$100 million series B funding round in early 2022, while Sequoia Capital China Venture Fund VIII earlier this year invested in SiEngine technology, an automotive chipmaker that developed a smart cockpit system-on-chip with embedded AI for driver assistance systems, according to Bloomberg data.

UC Regents declined to comment, while the University of Texas Investment Management and Alaska Permanent did not respond to a request for comment.

In addition, the Texas County & District Retirement System, Austin, and the San Francisco City & County Employees' Retirement System had committed \$85 million and \$100 million, respectively, to Hong Kong-based private equity firm Hillhouse Capital Group's Hillhouse Fund IV, which closed in 2018 at \$10.6 billion. The University of Texas Investment Management also committed \$35 million to Hillhouse Fund IV, according to

Chinese AI

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Industry players generally agree that in China, the companies with the most potential in the AI space are mostly larger firms because of the resources needed to run functional AI technologies — that means they tend to be growth or late-stage private firms, or large, listed technology companies like Baidu Inc. and Alibaba Group Holding Ltd.

"Generally at this moment, investors are still cautious given the slow exit activity in the IPO market," Ms. Chu said. "Early stage startups or first-time fundraisers will need to rely more on government funding."

Still, prompted by the ChatGPT craze, new AI companies have sprung up in China. GuangNianZhiWai, a new Beijing-based AI firm set up to rival OpenAI, the research company behind ChatGPT, raised \$230 million in seed funding during the first quarter, according to the KPMG report, making it among the top 10 financings in Asia-Pacific.

GuangNianZhiWai was set up by Wang Huiwen, a tech veteran who co-founded e-commerce platform Meituan, which now has a market cap of more than HK\$800 billion (\$102 billion) on the Hong Kong exchange.

Investor silence

Chinese venture capital firms

have been uncharacteristically quiet about fundraising and capital deployment in recent months, and their U.S. investors even more so.

"Very few Western endowments or those types will admit that they invested in maybe like a SenseTime or something like that," said a San Francisco-based venture capital expert, who asked not to be identified.

"First, I doubt that they invested in those companies directly. And then, two, I really think they would not admit it anyway, just because the sensitivities around surveillance and sort of all that stuff happening, et cetera. It's much more sort of quieter," he said.

SenseTime is an AI company founded by Chinese nationals Tang Xiao'ou and Xu Li in Hong Kong. At one point, SenseTime was the world's most valuable AI company; its 2021 debut on the Hong Kong stock exchange valued the company at \$16.4 billion. OpenAI has surpassed that significantly, with a valuation of \$27 billion to \$29 billion in its latest \$300 million funding round in April.

U.S. investors have made commitments to Chinese private equity and venture capital investments through firms such as Sequoia Capital China. They include the University of California Board of Regents, Oakland, the University of Texas Investment Management Co., Austin, and the Alaska Permanent Fund Corp., Juneau, according to Bloomberg data.

UC Regents committed \$131 million to Sequoia China Venture VIII