Private Bank



Family Office Investment Report

Q2 2023 CAPITAL FLOWS & INSIGHTS

This analysis is based on investment assets held by single family office clients at Citi Private Bank. Citi Private Bank's Global Family Office Group considers a single family office to have US \$250mm+ net worth and one or more dedicated professionals covering i. portfolio of assets/investments & liabilities; ii. legal matters; iii. finance and accounting; iv. trusts & tax planning; and/or v. philanthropy & foundations.

Data is taken from more than 1,200 single family office clients globally and filtered for size and allocation characteristics. This publication presents a general snapshot of how Citi Private Bank's single family office clients are positioned and provides insight into regional flows. The data provided is not representative of and should not be deemed to be attributable to any particular family office client. Please refer to page 23 for methodology information.

Investment assets that single family office clients hold at Citi Private Bank were captured on March 31 and June 30, 2023. The asset classes included align with Citi Private Bank's Global Investment Committee definitions and nomenclature. Please refer to pages 24–25 for index definitions.

All information presented in this publication is for informational purposes only, is based on past activity, is not intended to represent investment advice nor any projection of forward-looking performance, and is not the product of Citi's Research Department.

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Foreword

This second quarterly edition of Family Office Investment Report explores an important question against the backdrop of recent geopolitical and economic developments: amid today's often conflicting market signals, what are some of the world's most sophisticated investors doing with their portfolios?

Using data from our family office clients worldwide, this report summarizes recent portfolio positioning and shifts at global and regional levels. It also examines this activity in light of Citi Global Wealth's short- and long-term asset allocations.

To date, 2023 has surprised to the upside. The most widely forecasted recession in history has so far failed to appear. Stubbornly high inflation in many places has begun to retreat in the face of ongoing rate hikes from global central banks. Global Equities have pressed higher, adding a further 6.3% in the second quarter of 2023. Again, the technology sector powered ahead.

In this environment, family offices put more of their Cash to work on average. In every region, allocations to Fixed Income rose, with high-quality Fixed Income such as Investment Grade and US Treasuries now offering income that they have not for many years. And while there was a slight retreat from Equities overall, we saw increased allocations to Private Equity, Real Estate and Hedge Funds in most regions. To provide you with yet more insights into family office investment thinking, we will publish our annual survey report in September. The survey presents the total holdings of many of our family office clients across all providers, accompanied by their perspectives into a wide range of key issues. Based on self-reported data, it is most useful when read in conjunction with this publication.

Our thanks to all of you who have sent us feedback and queries following our inaugural edition last quarter. Your comments are invaluable as we build and adapt this report, and we look forward to hearing more from you.

Thank you for the trust that you place in Citi Private Bank.

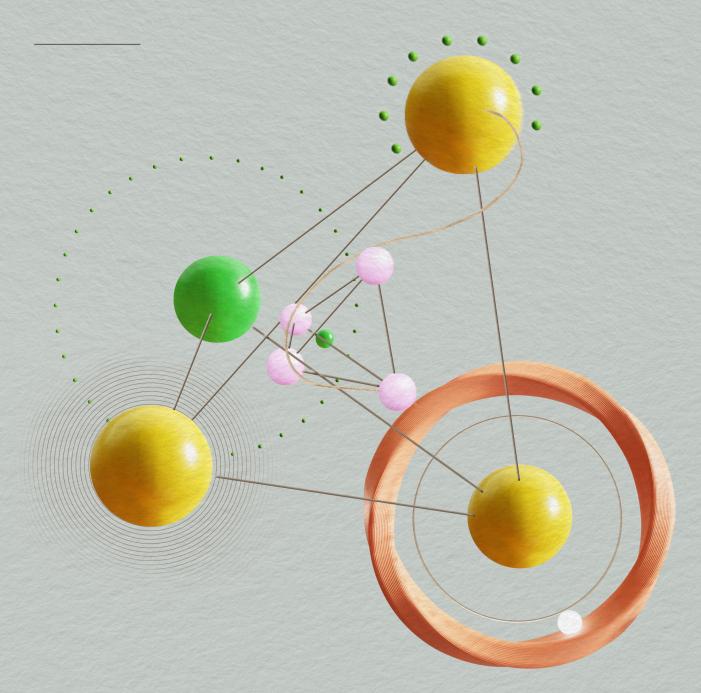


Hannes Hofmann Global Head Global Family Office Group



Shu Zhang Global Head Global Investment Lab

Asset allocation



ASSET ALLOCATION

The second quarter saw family offices display both appetite for risk and a desire for high-quality yields. Inflows occurred into Fixed Income and alternative asset classes. Family offices also slightly reduced their high allocations to Cash during the period.

	GLOBAL	APAC	EMEA	LATAM	NAM
CASH	30.1%	24.7%	33.9%	28.2%	31.0%
FIXED INCOME	21.9%	23.6%	19.4%	25.2%	21.2%
EQUITY	34.1%	39.5%	29.1%	33.7%	35.2%
HEDGE FUNDS	2.9%	4.1%	3.4%	3.4%	1.7%
PRIVATE EQUITY	6.4%	4.7%	6.6%	5.2%	7.6%
REAL ESTATE	3.7%	2.9%	5.8%	3.8%	2.6%
COMMODITIES	0.9%	0.6%	1.8%	0.5%	0.5%

FIGURE 1: ASSET ALLOCATIONS (EQUAL-WEIGHTED)*

An equal-weighted average of family office client allocations as of June 30, 2023.

In the 'equal-weighted' methodology, each account included in the analysis is given the same weight (1/Number of Accounts).

FIGURE 2: ASSET ALLOCATIONS (CAPITAL-WEIGHTED)*

	GLOBAL		APAC		EME	A			LATA	М	١	AM		
CASH	22.4%	1	17.7%				25.89	%		20.0%			22.5%)
FIXED INCOME	15.5%		23.2%	1		14.3	3%			16.6%		1.	3.1%	
EQUITY		56.3%		54.6%				47.9%			59.8%			61.4%
HEDGE FUNDS	1.7%		1.6%		3.	.4%			1.19	Ď		0.9	%	
PRIVATE EQUITY	2.3%		1.7%		4.	0%			1.60	%		1.59	6	
REAL ESTATE	1.3%		0.8%		2.9	9%			0.6	%		0.59	%	
COMMODITIES	0.6%		0.4%		1.7	'%			0.2	%		0.1%	, D	

A capital-weighted average of family office client allocations as of June 30, 2023.

In the 'capital-weighted' methodology, each account's weight is proportional to its market value (Weight of Account A = Market Value of Account A / Market Value of Family Office Client Universe Holdings).

Source: Citi Private Bank, June 2023.

* This analysis takes holdings data from over 1,200 relationships globally and requires a minimum of 50 relationships in each region (APAC, EMEA, LATAM or NAM) to conduct this analysis.

Fixed Income

For the second quarter running, Fixed Income allocations increased. On an equal-weighted basis, the average allocation rose from 21% to 21.9%, and 14.7% to 15.5% on a capital-weighted basis. Family offices continued to favor high-quality debt, with developed investment grade bonds seeing net dollar inflows. High -quality Fixed Income not only provides potential diversification to an investment portfolio but can also be an important source of income.

Most of the activity within investment grade bonds centered on government issuances and financials. This is in line with Citi Global Wealth's tactical view on bonds. Investors have been locking in attractive Fixed Income portfolio yields for 5-6 years, at levels much higher than estimated Cash yields over the same horizon.

Activity was mixed in High Yield and Emerging Markets Fixed Income, except for Asia, where high yield saw slight positive net dollar flows. The other regions had muted activity in this sub-asset class.

Equities

On average, family offices decreased their exposure to Equities, with the global equal-weighted allocation slipping from 34.9% to 34.1%. That said, some family offices with larger asset holdings at Citi Private Bank increased their allocations from 55.9% to 56.3%. Most of the outflows related to Developed Large-Cap Equities. However, Developed Small- and Mid-Cap Equities received significant inflows with activity centered on financials and communications.

Alternatives and Commodities

Global allocations to each of Hedge Funds, Private Equity and Real Estate increased over the previous quarter. On an equal-weighted view, the combined allocation to these three asset classes rose from 12.2% to 13%.

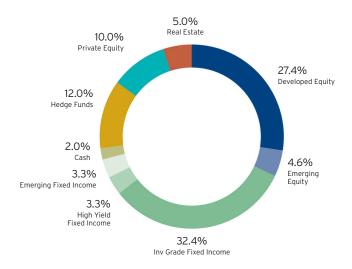
The picture in Commodities was mixed: All regions saw reduced allocations bar Europe, the Middle East and Africa, where average holdings went from 1.7% to 1.8%, driven largely by increased interest in gold.

Cash

Family office clients worldwide trimmed their overall Cash holdings during the second quarter as compared to the previous quarter. On a global equal-weighted basis, the average holding was 30.1% - **figure 1** - and on a capital-weighted basis, the figure was 22.4% - **figure 2**. The equivalent figures at the end of the first quarter were 30.9% and 23.5%. The reduction was principally driven by family offices with larger asset holdings at Citi Private Bank continuing to deploy some of their Cash into Fixed Income and Equities.

Despite the reduction in Cash holdings on a quarteron-quarter basis, these allocations are well above those in our benchmark strategic asset allocations. For example, our Global Allocation in US Dollars with Hedge Funds and 15% Illiquids (Private Equity & Real Estate) at Risk Level 3* ("Reference Allocation") has a 2% weighting in Cash - figure 3.

FIGURE 3: GLOBAL ALLOCATION IN US DOLLARS WITH HEDGE FUNDS AND 15% ILLIQUIDS (PRIVATE EQUITY & REAL ESTATE) AT RISK LEVEL 3



Source: Citi Global Wealth Investments Quant Research & Global Asset Allocation teams, data as of October 31, 2022

*Please refer to Citi Global Wealth Investments' Global Investment Committee's Portfolio Allocations for information on portfolios at each risk level.

At the regional level, we continue to see wide variation in Cash holdings. On an equal-weighted basis, family offices in Asia Pacific held the lowest proportion of Cash (24.7%), whereas family offices in Europe, the Middle East & Africa held the highest proportion of Cash (33.9%). This pattern was also true on a capital-weighted view.

Many family offices may be sitting on excess cash to fund tactical purchases of risk assets rather than as a core holding. However, such behavior is contrary to Citi Global Wealth's investment philosophy. Our approach stresses upon building fully invested core portfolios for the long term. Particularly over longer periods, large Cash holdings have exerted a drag on portfolio performance, albeit dampening volatility. Our strategic asset allocation methodology forecasts an annualized return of 3.4% for this asset class over the next decade, lower than that for any other asset class except Commodities – figure 4.

FIGURE 4: AVS' LONG-TERM OUTLOOK FOR ASSET CLASSES

CTRATECIC

ASSET CLASS	STRATEGIC RETURN ESTIMATE
CASH	3.4%
GLOBAL DEVELOPED INVESTMENT GRADE	4.6%
GLOBAL HIGH YIELD FIXED INCOME	7.4%
GLOBAL EMERGING FIXED INCOME	7.8%
GLOBAL DEVELOPED MARKET EQUITY	7.0%
GLOBAL EMERGING MARKET EQUITY	12.9%
HEDGE FUNDS	9.1%
PRIVATE EQUITY	17.6%
REAL ESTATE	10.6%
COMMODITIES	2.4%

Source: Citi Global Wealth Investments Quant Research & Global Asset Allocation team. SREs for 2023; Based on data as of October 31, 2022; Returns estimated in US Dollars. All estimates are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events. Strategic Return Estimates are no guarantee of future performance. Past performance is no guarantee of future returns. Please refer to pages 24–25 for the index composites for each asset class.

Strategic Return Estimates based on indices are Citi Global Wealth Investments' forecast of returns for specific asset classes (to which the index belongs) over a 10-year time horizon. Indexes are used to proxy for each asset class. The forecast for each specific asset class is made using a proprietary methodology that is appropriate for that asset class. Equity asset classes utilize a proprietary forecasting methodology based on the assumption that Equity valuations revert to their long-term trend over time. The methodology is built around specific valuation measures that require several stages of calculation. Assumptions on the projected growth of earnings and dividends are additionally applied to calculate the SRE of the Equity asset class. Fixed Income asset class forecasts use a proprietary forecasting methodology that is based on current yield levels. Other asset classes utilize other specific forecasting methodologies.

SREs do not reflect the deduction of client fees and expenses. Past performance is not indicative of future results. Future rates of return cannot be predicted with certainty. Investments that pay higher rates of return are often subject to higher risk and greater potential loss in an extreme scenario. The actual rate of return on investments can vary widely. This includes the potential loss of principal on your investment. It is not possible to invest directly in an index.

All SRE information shown above is hypothetical, not the actual performance of any client account. Hypothetical information reflects the application of a model methodology and selection of securities in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. Adaptive Valuation Strategies (AVS) provides SREs and asset allocations profiles for multiple currencies. Please refer to page 26 for the definition of Strategic Return Estimates.

CITI GLOBAL WEALTH'S TACTICAL POSITIONING AND SHIFTS

During the second quarter of 2023, our Global Investment Committee adjusted our tactical asset positioning – **figure 5.** As of the end of June, we were neutral on Global Equities, having been 1% underweight at the end of March. On Global Fixed Income, we are now 1% overweight, previously 2% overweight. Our Cash weighting remains 1% underweight.

Within Global Equities, we have gone from neutral to overweight US Small- and Mid-Cap, while trimming US Large-Cap and global pharmaceuticals. Given their lower valuations and the potential for US dollar downside, we also shifted holdings toward Equities in Asia, Europe and Latin America.

Within Global Fixed Income, we have increased our allocation to Emerging Market US Dollar Debt by 2%, where yields stand well above those of comparable US Treasuries. While still overweight the latter, we have reduced our holdings.

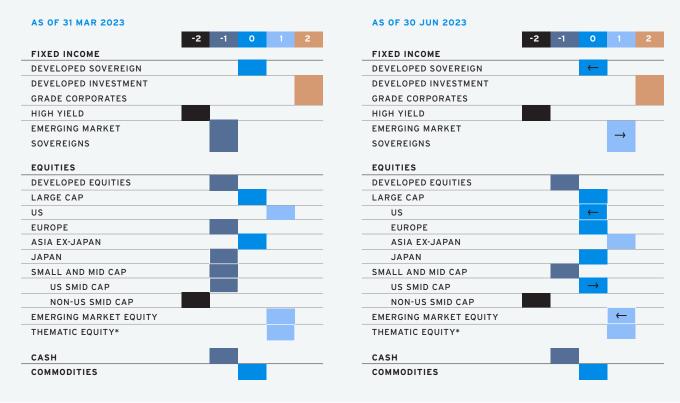


FIGURE 5: GLOBAL INVESTMENT COMMITTEE'S TACTICAL POSITIONING

Source: Citi Global Wealth Investments Global Strategy Quadrant, March 31, 2023 and June 31, 2023.

* Thematic Equities include Cyber Security. Please refer to the Portfolio Allocations for a comprehensive breakdown of the portfolios at each risk level.

-2 = very underweight | -1 = underweight | 0 = neutral | 1 = overweight | 2 = very overweight.

Arrows indicate changes from previous Global Investment Committee meeting.

Family office flows by region

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What changed in family office client portfolios in the second quarter of 2023?

In this section, we examine portfolio flows by region. Among the broad trends we observed were:

- High-quality Fixed Income buying
- A shift into Alternative asset classes
- Some Equity outflows
- A slight reduction in Cash holdings

ASIA PACIFIC

Family offices in Asia Pacific put more of their Cash to work in the second quarter. Allocations to Cash fell on an equal-weighted basis (down 1.1% to 24.4%) and on a capital-weighted view (down 0.57% to 17.2%). Again, Asia Pacific had the lowest allocations here of any region. In line with the pattern elsewhere, Fixed Income weightings increased, with a focus on quality.

CASH	24.4% (-1.10%))	DEV. SOVEREIGN	1.3% (0.46%)	
FIXED INCOME	23.5% (1.76%)	·	DEV. IG	7.3% (1	.21%)
	23.5% (1.76%)		DIVERSIFIED DEBT	5.1% (-0.1	2%)
EQUITY	40.0)% (-0.78%)	DEV. HY	2.3% (0.06%	6)
HEDGE FUNDS	3.9% (0.01%)		EM DEBT	5.6% <mark>(-0</mark> .	11%)
			OTHER DEBT	1.9% (0.27%)	
PRIVATE EQUITY	4.5% (0.10%)		DEV. LARGE CAP	11.	6% (0.35%)
REAL ESTATE	3.1% (0.17%)		DEV. SMALL/MID CAP	4.2% (-0.2	0%)
COMMODITIES	0.6% (-0.15%)		DIVERSIFIED EQUITY	3.9% (-0.3	4%)
			EM EQUITY		18.2% (-0.38%)
			OTHER EQUITY	2.1% (0.20%)	

An equal-weighted average of family office client allocations; June 30, 2023 vs. March 31, 2023.

FIGURE 7: ASSET ALLOCATIONS (CAPITAL-WEIGHTED)*

CASH	17.2% (-0.57%)	DEV. SOVEREIGN	1.2% (0.43%)
FIXED INCOME	22.6% (1.79%)	DEV. IG	7.3% (0.71%)
	22.0% (1.79%)	DIVERSIFIED DEBT	2.8% (0.04%)
EQUITY	55.8% (-1.13%)	DEV. HY	2.4% (0.02%)
HEDGE FUNDS	1.4% (-0.06%)	EM DEBT	6.2% (0.17%)
		OTHER DEBT	2.8% (0.43%)
PRIVATE EQUITY	1.7% (-0.01%)	DEV. LARGE CAP	10.5% (-0.07%)
REAL ESTATE	0.9% (-0.03%)	DEV. SMALL/MID CAP	3.6% (0.15%)
COMMODITIES	0.4% (-0.12%)	DIVERSIFIED EQUITY	2.5% (-0.26%)
		EM EQUITY	37.0% (-0.61%)
		OTHER EQUITY	2.2% (-0.34%)

An equal-weighted average of family office client allocations; June 30, 2023 vs. March 31, 2023.

DECREASED ALLOCATION AS COMPARED TO PRIOR PERIOD NO CHANGE TO ALLOCATION AS COMPARED TO PREVIOUS PERIOD INCREASED ALLOCATION AS COMPARED TO PREVIOUS PERIOD

Source: Citi Private Bank, June 2023. The changes in asset allocation are based on trading activity. Holdings are normalized to March 31, 2023 valuations for consistency and, as such, are not impacted by price action. Detailed methodology is available on page 23.

* Two weighting methodologies are used in this analysis: equal-weighted and capital-weighted. In the 'equal-weighted' methodology, each account included in the analysis is given the same weight (1/Number of Accounts). In the 'capital-weighted' methodology, each account's weight is proportional to its market value (Weight of Account A = Market Value of Account A / Market Value of Family Office Client Universe Holdings). This analysis takes holdings data from over 1,200 relationships globally and requires a minimum of 50 relationships in each region (APAC, EMEA, LATAM or NAM) to conduct this analysis.

Fixed Income

For the second quarter running, Fixed Income allocations rose on both an equal-weighted basis (up 1.76% to 23.5%) and a capital-weighted basis (up 1.79% to 22.6%). Net dollar inflow was across all sub-asset classes within Fixed Income.

Developed Investment Grade (up 1.21% to 7.29% on an equal-weighted view) and Developed Sovereign (up 0.46% to 1.26%) contributed most of the overall positive net dollar inflow within Fixed Income, with buy trades approximately 2.5 times more numerous than sells. The bulk of trading in both directions centered on financial credits. We also observed moderate client interest in longer-dated US Treasuries and perpetual bonds, where our Global Investment Committee remains tactically overweight – **figure 5**. There was buying interest in a short-duration bond strategy and a long-duration US investment grade strategy.

Diversified Fixed Income saw moderate net dollar inflows driven by investments into a global income strategy. Developed Corporate High Yield saw slight positive net dollar inflows, with activity also dominated by financial credits.

Within Emerging Market Debt, allocations shrank slightly on an equal-weighted basis (down 0.11% to 5.63%) but saw an increase on a capital-weighted view (up 0.17%). Buying was broadly diversified across sectors while selling interest was primarily around cyclical sectors such as Real Estate, Energy and Financials.

Equities

Equities experienced a net dollar outflow during the second quarter, with the equal-weighted average allocation falling 0.78% to 40%. This was also true on a capital-weighted basis, with a 1.13% decline to 55.8%. Sell trades slightly outnumbered buys.

The largest contributor to the net dollar outflow was holdings of Emerging Market Equities, where sell trades were almost double those of buys. Total buying and selling activities were broadly distributed across sectors. Diversified Equities (down -0.35% to 3.9%) saw a second consecutive quarter of net dollar outflows.

By contrast, Developed Large-Cap Equities recorded positive net dollar flows. Buying interest was broadly focused on the information technology and consumer discretionary sectors.

Developed Small/Mid-Cap Equities also saw net inflows. The increase on a capital-weighted basis (up 0.15% to 3.6%) contrasted with an equal-weighted basis reduction (down 0.2% to 4.2%) primarily due to a couple of large buy transactions. Buying was focused on Financials and Real Estate, while selling interests were broadly spread.

Alternatives and Commodities

Allocations to Private Equity, Real Estate and Hedge Funds collectively rose 0.27% to 11.5%.* Private Equity remains the largest allocation among Alternatives asset classes at 4.5%.

Despite broadly based net dollar inflows to Hedge Funds, equal-weighted and capital-weighted allocations remained roughly flat at 3.9% and 1.4% respectively. We observed interest in select Asia-focused long-only, fixed income relative value and multi-strategy Hedge Funds.

Equal-weighted Commodities allocations declined 0.15% to 0.6%, with capital-weighted allocations also shrinking, as family office clients reduced their exposure to gold.

*Allocations to an asset class could change due to shifts in allocations to other asset classes. For example, an inflow of funds to one asset class while all others saw zero flows would register as negative flows for the latter you can then reduce the space between the two paragraphs. Private Equity & Real Estate do not record flows unless it is the first capital call of a new fund or retirement of an existing fund.

The changes in asset allocation are based on trading activity. Holdings are normalized to March 31, 2023 valuations for consistency and, as such, are not impacted by price action. Detailed methodology is available on page 23. This page summarizes changes observed in Citi Private Bank's single family office clients' portfolio asset allocations in Q2 2023. The summary on this page is for informational purposes only, based on past activity, not intended to represent investment advice, nor any projection of forward–looking performance.

EUROPE, THE MIDDLE EAST & AFRICA

Equal-weighted allocations to Fixed Income and alternative investments rose in the second quarter, with a reduction in Public Equities. Family office Cash holdings on average (equal-weighted view) remained broadly unchanged during the period at 35.2%, although family offices with larger asset holdings at Citi Private Bank reduced Cash (down 0.39% to 27.4%), deploying it into investable assets.

FIGURE 8: ASSET ALLOCATIONS (EQUAL-WEIGHTED)*

CASH	35.2% (0.08%)	DEV. SOVEREIGN	3.6% (0.10%)
FIXED INCOME	10 (0) (0 210()	DEV. IG	7.8% (0.23%)
FIXED INCOME	18.6% (0.31%)	DIVERSIFIED DEBT	1.8% (-0.08%)
EQUITY	27.9% (-1.42%)	DEV. HY	2.1% (0.38%)
HEDGE FUNDS	3.7% (0.39%)	EM DEBT	3.1% (-0.33%)
		OTHER DEBT	0.2% (0.01%)
PRIVATE EQUITY	6.7% (0.13%)	DEV. LARGE CAP	14.5% (-0.62%)
REAL ESTATE	6.0% (0.39%)	DEV. SMALL/MID CAP	5.4% (0.16%)
COMMODITIES	1.9% (0.12%)	DIVERSIFIED EQUITY	4.0% (-0.92%)
		EM EQUITY	3.3% (-0.06%)
		OTHER EQUITY	0.7% (0.01%)

An equal–weighted average of family office client allocations; June 30, 2023 vs. March 31, 2023.

FIGURE 9 : ASSET ALLOCATIONS (CAPITAL-WEIGHTED)*

CASH	27.4% (-0.39%)	DEV. SOVEREIGN	2.6% (0.16)	%)
FIXED INCOME	13.2% (1.26%)		DEV. IG	5.4% (0.1	7%)
	13.2 % (1.20%)		DIVERSIFIED DEBT	1.0% (-0.09	%)
EQUITY		46.5% (-0.85%)	DEV. HY	2.4% (1.24%	b)
HEDGE FUNDS	3.6% (0.16%)		EM DEBT	1.8% (-0.220	%)
			OTHER DEBT	0.1% (0.01%)	
PRIVATE EQUITY	4.3% (-0.23%)		DEV. LARGE CAP		24.9% (-2.43%)
REAL ESTATE	3.1% (-0.13%)		DEV. SMALL/MID CAP	12.8%	(0.69%)
COMMODITIES	1.9% (0.18%)		DIVERSIFIED EQUITY	2.6% (-0.4	3%)
			EM EQUITY	5.2% (1.38	3%)
			OTHER EQUITY	1.1% (-0.06%	6)

An equal-weighted average of family office client allocations; June 30, 2023 vs. March 31, 2023.

DECREASED ALLOCATION AS COMPARED TO PRIOR PERIOD NO CHANGE TO ALLOCATION AS COMPARED TO PREVIOUS PERIOD INCREASED ALLOCATION AS COMPARED TO PREVIOUS PERIOD

Source: Citi Private Bank, June 2023. The changes in asset allocation are based on trading activity. Holdings are normalized to March 31, 2023 valuations for consistency and, as such, are not impacted by price action. Detailed methodology is available on page 23.

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Fixed Income

On average, family offices raised their allocation by 0.31% to 18.6%. The increase was more pronounced in family offices with larger asset holdings at Citi Private Bank, with the capital-weighted allocation rising 1.26% to 13.2%.

There was an ongoing preference for high-quality debt, with Developed Investment Grade Bonds seeing net dollar inflows. Most trading activity centered on financials and consumer non-cyclicals. Clients also increased their exposure to High Yield Bonds during the period.

There was an active reduction in exposure to Emerging Market Fixed Income, with sell trades focused on select government issuances.

Equities

Equities saw a net dollar outflow during the second quarter. The equal-weighted allocation slipped 1.42% to 27.9%, while the capital-weighted allocation fell 0.85% to 46.5%.

Developed Large-Cap Equities accounted for most of this, with selling occurring broadly across sectors. Technology and communications experienced the most selling pressure.

By contrast, Developed Small- and Mid-Cap Equities received significant inflows, focused on financials and communications.

Allocations to Emerging Market Equities increased among family offices with large asset holdings at Citi Private Bank. But whereas capital-weighted allocations rose 1.38% to 5.2%, the equal-weighted figure remained broadly flat at 3.3%. Trading activity was focused on the communications sector.

Alternatives and Commodities

Rising allocations were in evidence across alternative asset classes. On an equal-weighted view, Private Equity was up 0.13% to 6.7%, Real Estate up 0.39% to 6% and Hedge Funds up 0.39% to 3.7%.*

Family office clients were net buyers of commodityrelated instruments, with a focus on gold and natural gas.

*Allocations to an asset class could change due to shifts in allocations to other asset classes. For example, an inflow of funds to one asset class while all others saw zero flows would register as negative flows for the latter.

Private Equity & Real Estate do not record flows unless it is the first capital call of a new fund or retirement of an existing fund.

The changes in asset allocation are based on trading activity. Holdings are normalized to March 31, 2023 valuations for consistency and, as such, are not impacted by price action. Detailed methodology is available on page 23. This page summarizes changes observed in Citi Private Bank's single family office clients' portfolio asset allocations in 02 2023. The summary on this page is for informational purposes only, based on past activity, not intended to represent investment advice, nor any projection of forward–looking performance.

LATIN AMERICA

Family offices in Latin America have sought to take advantage of higher interest rates by upping their exposure to Fixed Income. They have also reduced their Cash allocations on both an equal-weighted (down 1.02% to 26.9%) and a capital-weighted basis (down 3.35% to 21.2%.)

FIGURE 10: ASSET ALLOCATIONS (EQUAL-WEIGHTED)*

CASH	26.9% (-1.02%)	MUNICIPAL BONDS	0.00% (0.00%)
FIXED INCOME	26.40((2.200())	US IG BONDS	12.0% (1.94%)
FIXED INCOME	26.4% (2.39%)	DEVELOPED IG BONDS (ex-US)	1.8% (0.18%)
EQUITY	33.2% (-1.52 %	HIGH YIELD BONDS	2.0% (-0.12%)
HEDGE FUNDS	3.7% (0.42%)	EMERGING MARKET BONDS	6.2% (0.14%)
		OTHER FIXED INCOME	4.5% (0.25%)
PRIVATE EQUITY	5.1% (0.43%)	US LARGE CAP EQUITIES	9.3% (-0.43%)
REAL ESTATE	4.2% (-0.71%)	US SMID CAP EQUITIES	0.9% (0.02%)
COMMODITIES	0.5% (0.02%)	DEVELOPED EQUITIES (ex-US)	4.8% (-0.24%)
	0.570 (0.0270)	EMERGING MARKET EQUITIES	8.2% (-0.14%)
		OTHER EQUITIES	10.1% (-0.73%)

An equal-weighted average of family office client allocations; June 30, 2023 vs. March 31, 2023.

FIGURE 11: ASSET ALLOCATIONS (CAPITAL-WEIGHTED)*

CASH	21.2% (-3.35%)	MUNICIPAL BONDS	0.0% (0.0%)
FIXED INCOME	17.9% (1.56%)	US IG BONDS	10.0% (1.74%)
	11.5 /0 (1.56 /0)	DEVELOPED IG BONDS (ex-US)	1.0% (-0.47%)
EQUITY	57.1% (1.56%)	HIGH YIELD BONDS	1.2% (0.14%)
HEDGE FUNDS	1.2% (0.14%)	EMERGING MARKET BONDS	2.3% (0.16%)
		OTHER FIXED INCOME	3.4% (-0.01%)
PRIVATE EQUITY	1.7% (0.10%)	US LARGE CAP EQUITIES	7.0% (0.02%)
REAL ESTATE	0.7% (-0.04%)	US SMID CAP EQUITIES	0.8% (0.05%)
COMMODITIES	0.3% (0.03%)	DEVELOPED EQUITIES (ex-US)	5.8% (0.04%)
		EMERGING MARKET EQUITIES	20.1% (1.06%)
		OTHER EQUITIES	23.4% (0.38%)

An equal-weighted average of family office client allocations; June 30, 2023 vs. March 31, 2023.

DECREASED ALLOCATION AS COMPARED TO PRIOR PERIOD NO CHANGE TO ALLOCATION AS COMPARED TO PREVIOUS PERIOD INCREASED ALLOCATION AS COMPARED TO PREVIOUS PERIOD

Source: Citi Private Bank, June 2023. The changes in asset allocation are based on trading activity. Holdings are normalized to March 31, 2023 valuations for consistency and, as such, are not impacted by price action. Detailed methodology is available on page 23.

* Two weighting methodologies are used in this analysis: equal-weighted and capital-weighted. In the 'equal-weighted' methodology, each account included in the analysis is given the same weight (1/Number of Accounts). In the 'capital-weighted' methodology, each account's weight is proportional to its market value (Weight of Account A = Market Value of Account A / Market Value of Family Office Client Universe Holdings). This analysis takes holdings data from over 1,200 relationships globally and requires a minimum of 50 relationships in each region (APAC, EMEA, LATAM or NAM) to conduct this analysis.

Fixed Income

The rise in Fixed Income holdings represents the largest increase for any asset class in any region, on both an equal-weighted view (up 2.39% to 26.4%) and a capital-weighted view (up 1.56% to 17.9%). Activity was concentrated in US Investment Grade – including US Treasuries – where equal-weighted allocations rose 1.94% to 12%. This is likely a result of family offices seeking to lock in multi-decade high rates across the middle segment of the yield curve.

Equities

Overall, family offices in Latin America's average exposure to Equities decreased, with the equalweighted allocation dropping 1.52% to 33.2%. However, some family offices with larger asset holdings at Citi Private Bank increased their allocations.

The largest inflows into Equities were concentrated purchases of the largest US technology stocks and broad index ETFs, while the largest outflows involved mutual funds. For our largest family offices' portfolios, Equities remain a higher percentage of their overall asset allocation, leading to a capital-weighted average of 57.1% versus an equal-weighted average of 33.2%.

Alternatives and Commodities

Equal-weighted allocations to Private Equity rose 0.43% to 5.1%, while allocations to Real Estate fell 0.71% to 4.2%.*

Half of all family office clients hold Private Equity and/ or Real Estate with Citi Private Bank. Overall, family offices in Latin America continue to favor diversified Private Equity funds and Real Estate funds, with 70% of all Private Equity and 50% of all Real Estate investments coming via these two sub-categories.

Almost 10% of family office clients in Latin America made an allocation to Hedge Funds in the last quarter. The equal-weighted average hedge fund allocation increased 0.42% to 3.7%.

*Allocations to an asset class could change due to shifts in allocations to other asset classes. For example, an inflow of funds to one asset class while all others saw zero flows would register as negative flows for the latter.

Private Equity & Real Estate do not record flows unless it is the first capital call of a new fund or retirement of an existing fund.

The changes in asset allocation are based on trading activity. Holdings are normalized to March 31, 2023 valuations for consistency and, as such, are not impacted by price action. Detailed methodology is available on page 23. This page summarizes changes observed in Citi Private Bank's single family office clients' portfolio asset allocations in Q2 2023. The summary on this page is for informational purposes only, based on past activity, not intended to represent investment advice, nor any projection of forward–looking performance.

NORTH AMERICA

The second quarter of 2023 was marked by cautious optimism among family offices in North America. Amid the uncertainty, they continued to allocate to high-quality Fixed Income. That said, a few family offices shifted toward riskier asset classes, as outright recession fears somewhat abated and hopes grew of a "rolling recession" scenario – where different sectors of the economy struggle at different times rather than in synchronization – or a "soft-landing" scenario. Broadly speaking, family offices put Cash to work, with a decrease in allocations on an equal-weighted basis (down 0.44% to 30.5%) and capital-weighted basis (down 3.96% to 23.4%).

FIGURE 12: ASSET ALLOCATIONS (EQUAL-WEIGHTED)*

CASH		30.5% (-0.44%)	MUNICIPAL BONDS	13.7% (0.18%)
FIXED INCOME	22.20	6 (0.47%)	US IG BONDS	5.4% (0.22%)
	22.27	0 (0.47 70)	DEVELOPED IG BONDS (ex-US)	0.3% (0.06%)
EQUITY	35.2% (-0.01%)		HIGH YIELD BONDS	0.3% (-0.06%)
HEDGE FUNDS	1.7% (0.04%)		EMERGING MARKET BONDS	0.0% (-0.01%)
			OTHER FIXED INCOME	2.5% (0.08%)
PRIVATE EQUITY	7.5% (-0.11%)		US LARGE CAP EQUITIES	18.5% (-0.01%)
REAL ESTATE	2.4% (0.04%)		US SMID CAP EQUITIES	4.4% (0.12%)
COMMODITIES	0.5% (0.00%)		DEVELOPED EQUITIES (ex-US)	3.6% (-0.14%)
	0.070 (0.0070)		EMERGING MARKET EQUITIES	2.2% (-0.03%)
			OTHER EQUITIES	6.6% (0.06%)

An equal-weighted average of family office client allocations; June 30, 2023 vs. March 31, 2023.

FIGURE 13: ASSET ALLOCATIONS (CAPITAL-WEIGHTED)*

CASH	23.4% (-3.96%)		MUNICIPAL BONDS	7.5% (0.44%)	
FIXED INCOME	13.7% (1.15%)		US IG BONDS	4.1% (0.30%	6)
	13.770 (1.1370)		DEVELOPED IG BONDS (ex-US)	0.5% (0.31%)	
EQUITY		59.8% (2.64%)	HIGH YIELD BONDS	0.2% (0.01%)	
HEDGE FUNDS	0.9% (0.06%)		EMERGING MARKET BONDS	0.0% (0.00%)	
			OTHER FIXED INCOME	1.5% (0.08%)	
PRIVATE EQUITY	1.5% (0.09%)		US LARGE CAP EQUITIES		32.4% (1.01%)
REAL ESTATE	0.5% (0.03%)		US SMID CAP EQUITIES	2.7% (0.34%)	
COMMODITIES	0.1% (0.00%)		DEVELOPED EQUITIES (ex-US)	4.2% (0.30%)	
			EMERGING MARKET EQUITIES	2.6% (0.07%)	
			OTHER EQUITIES	17.9% (0.91%)	

A capital-weighted average of family office client allocations; June 30, 2023 vs. March 31, 2023.

DECREASED ALLOCATION AS COMPARED TO PRIOR PERIOD NO CHANGE TO ALLOCATION AS COMPARED TO PREVIOUS PERIOD INCREASED ALLOCATION AS COMPARED TO PREVIOUS PERIOD

Source: Citi Private Bank, June 2023. The changes in asset allocation are based on trading activity. Holdings are normalized to March 31, 2023 valuations for consistency and, as such, are not impacted by price action. Detailed methodology is available on page 23.

* Two weighting methodologies are used in this analysis: equal-weighted and capital-weighted. In the 'equal-weighted' methodology, each account included in the analysis is given the same weight (1/Number of Accounts). In the 'capital-weighted' methodology, each account's weight is proportional to its market value (Weight of Account A = Market Value of Account A / Market Value of Family Office Client Universe Holdings). This analysis takes holdings data from over 1,200 relationships globally and requires a minimum of 50 relationships in each region (APAC, EMEA, LATAM or NAM) to conduct this analysis.

Fixed Income

Additions to Fixed Income allocations were more pronounced among family offices with larger asset holdings at Citi Private Bank, with the capital-weighted average rising 1.15% to 13.7% versus the 0.47% increase to 22.2% on an equal-weighted basis.

High-quality Fixed Income - consisting of Municipal and Global Investment Grade Bonds - accounted for 92% of traded volume within the overall asset class. Both sub asset-classes saw large increases in allocations.

Interest in developed (ex-US) Investment Grade Bonds continued to mount as central banks across the developed world raised rates to fight inflation.

The increase in exposure to high-quality Fixed Income was consistent with Citi Global Wealth Investment's message of "Bonds are Back," which favors an overweight to developed investment grade bonds.

Within investment grade bonds, family offices in North America primarily added exposure to Treasuries, municipal bonds and preferred securities.

By contrast, activity was muted in High Yield and Emerging Markets Fixed Income, with allocations ending little changed.

Equities

Within Equities, there was a stark divide in capital deployment between family offices on average and those with larger asset holdings at Citi Private Bank, as represented by capital- and equal-weighted metrics measures respectively. The former increased 2.64% to 59.78% whereas the latter stayed roughly flat at 35.23%.

On a capital-weighted basis, allocations increased substantially across all sub-asset classes except Emerging Market Equities. US Equities accounted for above 70% of traded volume.

Within US Large Cap, family offices raised their exposure to healthcare, most likely for defensive reasons. Meanwhile, they actively reduced holdings in the financial sector following concerns about the health of certain banks in the first quarter.

In US Small- and Mid-Cap Equities – where we have raised our allocation – clients increased exposure to consumer discretionary and communication services, potentially indicating increasing belief in the scenario of an economic "soft-landing."

Structured notes on Equities were bought opportunistically higher interest rates and sector-specific volatility.

Alternatives and Commodities

Activity in Private Equity and Real Estate funds was muted.* This may reflect the recent reduction in distributions from Private Equity strategies, as IPO markets remain weak.

*Allocations to an asset class could change due to shifts in allocations to other asset classes. For example, an inflow of funds to one asset class while all others saw zero flows would register as negative flows for the latter.

Private Equity & Real Estate do not record flows unless it is the first capital call of a new fund or retirement of an existing fund.

The changes in asset allocation are based on trading activity. Holdings are normalized to March 31, 2023 valuations for consistency and, as such, are not impacted by price action. Detailed methodology is available on page 23. This page summarizes changes observed in Citi Private Bank's single family office clients' portfolio asset allocations in Q2 2023. The summary on this page is for informational purposes only, based on past activity, not intended to represent investment advice, nor any projection of forward–looking performance.

PERFORMANCE RECAP

Global Equities extended their uptrend from the first quarter – **figure 14** – with only Emerging Asian Equities failing to register gains. Fixed Income performance, by contrast, was rather more mixed after a strong first three months of 2023. The ongoing gains have again highlighted the pitfalls of market timing, with those who chose to sit on the sidelines on large piles of cash failing to capture this performance in full.

FIGURE 14: MARKET PERFORMANCE

FIXED INCOME	Q2 2023 RETURN (%)		YTD RETURN (%)		
US AGGREGATE	-0.8%			2.1%	
EUROPEAN AGGREGATE		0.2%		2.2%	
GLOBAL AGGREGATE	-1.5%	-1.5%		1.4%	
US HIGH YIELD CORPORATE		1.7%		5.4%	
EUROPEAN HIGH YIELD CORPORATE		1.8%		4.8%	
EM HARD CURRENCY AGGREGATE		1.3%		3.6%	
EM SOVEREIGN (LOCAL)	-1.4%			1.7%	
EQUITIES					
US EQUITIES	US EQUITIES 8.7%		16.9%		
EUROPEAN EQUITIES		4.7%		21.5%	
JAPANESE EQUITIES		9.0%		16.8%	
LATAM EQUITIES		14.3%		18.9%	
EM ASIA EQUITIES	-0.7%			4.1%	
EM EUROPEAN EQUITIES		11.7%		13.3%	
GLOBAL EQUITIES		6.3%		14.3%	
HEDGE FUNDS		_		_	
HEDGE FUNDS OF FUNDS		0.6%		0.6%	
COMMODITIES	6 404		11.00/		
CRUDE OIL (WTI) (\$/BARREL)	-6.4%	-11.0%			
BRENT OIL (\$/BARREL)	-4.7%		-9.3%		
GOLD (\$/OUNCE)	-2.5%			5.2%	
FIXED INCOME	EQUITIES	HEDGE FUNDS	Соммо	DDITIES	

As of June 30, 2023

Source: Bloomberg, as of June 30, 2023, OCIS June 2023. Q2 2023 Total Return Analysis Period: April 2023 - June 2023. Note: Return is in USD terms and is total returns. Past performance is not indicative of future returns. The indices are unmanaged and are not investable. Index data is provided for comparative purposes only. Please refer to page 24–25 for index definitions. Diversification does not ensure profit or protection against loss.

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ANNUAL FAMILY OFFICE SURVEY REPORT



Initiated during the seventh annual Family Office Leadership Program last June, the 2022 Family Office Survey collected responses from over 125 family office clients over a month-long period.

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Investment management best practices for family offices

About the Global Family Office Group

Citi Private Bank's Global Family Office Group serves single family offices, private investment companies and private holding companies, including family-owned enterprises and foundations, around the world.

We offer clients comprehensive private banking and family office advisory services, institutional access to global opportunities and connections to a community of like-minded peers.

For more information, please contact your Private Banker or the group head in your region.

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About the Global Investment Lab

The Global Investment Lab is a dedicated, institutional-calibre analytical team within Citi Global Wealth that is focused on customized portfolio construction, risk management and investment strategy.

We understand the complex needs of family offices and are committed to helping clients identify opportunities and make well-informed investment decisions. From liquidity events to direct investment to strategic portfolio realignment, we put our analytical minds and deep experience with portfolio construction to work identifying the appropriate investment portfolio opportunities for your family office.

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Methodology

We use equal-weighted and capital-weighted methodologies in this analysis.

In the equal-weighted methodology, each account included in the analysis is given the same weight in the calculation of averages.

Equal-weighted calculation = 1/number of family office accounts.

In the capital-weighted methodology, each account's weight is proportional to its asset value, such that larger family office accounts have a greater bearing on the average calculations.

Capital-weighted calculation = Account A's asset value / total value of family office client assets.

This analysis takes asset data from over 1,200 relationships globally, requiring a minimum of 50 relationships in each region (APAC, EMEA, LATAM or NAM) for that region to be included.

The analysis is only inclusive of assets for which Citi holds information (e.g., direct client investments are not captured).

Asset allocation (pg. 5)

Snapshot of asset allocation on a capital-weighted and equal-weighted basis, excluding:

a. Liabilities;

b. Client accounts valued at <USD 1MM; and

c. Clients who hold 90% (or more) of their assets in Cash & Cash Equivalents

Regional flows (pgs. 10-18)

Changes in the value of assets held, and the resultant impact on aggregate asset class weights, are entirely based on changing quantities and do not incorporate any price effects. Products with multiple asset classes and holdings traded within managed portfolios are excluded from this analysis, along with:

a. Negative positions and liabilities;

b. Unfunded derivatives positions;

c. Client accounts valued at <USD 1MM;

d. Client accounts opened or closed during the analysis period;

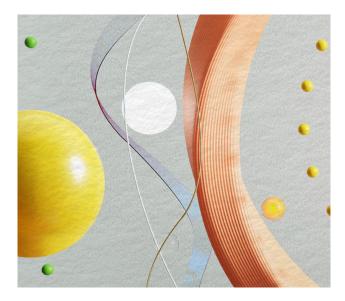
e. Clients who hold 90% (or more) of their assets in Cash & Cash Equivalents at both observation points; and

f. Client accounts whose total asset value has changed by >100%.

Allocations to an asset class could change due to shifts in allocations to other asset classes. For example, an inflow of funds to one asset class while all others saw zero flows would register as negative flows for the latter.

Private Equity & Real Estate do not record flows unless it is the first capital call of a new fund or retirement of an existing fund.

Past performance is not indicative of future results.



Index definitions

US Aggregate - Bloomberg Barclays U.S. Aggregate Bond Index

The Bloomberg Barclays U.S. Aggregate Bond Index is a broad-based benchmark that measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market. This includes Treasuries, government-related and corporate securities, mortgage-backed securities, asset-backed securities and collateralized mortgagebacked securities.

European Aggregate - Bloomberg Barclays Euro Agg Total Return Index

The Bloomberg Barclays Euro Aggregate Bond Index includes fixed-rate, investment grade euro denominated bonds. Inclusion is based on the currency of the issue, and not the domicile of the issuer. The principal sectors in the index are the Treasury, corporate, governmentrelated and securitized.

Global Aggregate - Bloomberg Barclays Global Aggregate Bond

The Index measures the performance of the global investment grade, fixed-rate bond markets. The benchmark includes government, government-related and corporate bonds, as well as asset-backed, mortgage-backed and commercial mortgage-backed securities from both developed and emerging markets issuers.

US High Yield Corporate - Bloomberg Barclays US Corporate High Yield Total Return Index

The Bloomberg Barclays US Corporate High Yield Bond Index measures the USD-denominated, high yield, fixed-rate corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+/BB+ or below. Bonds from issuers with an emerging markets country of risk, based on Barclays EM country definition, are excluded.

European High Yield Corporate - Bloomberg Barclays Pan-European High Yield Total Return Index

The Bloomberg Barclays Pan-European High Yield Index measures the market of non-investment grade, fixed-rate corporate bonds denominated in the following currencies: euro, pounds sterling, Danish krone, Norwegian krone, Swedish krona and Swiss franc. Inclusion is based on the currency of issue, and not the domicile of the issuer.

EM Hard Currency Aggregate - Bloomberg Barclays EM Local Currency Government TR Index

The Bloomberg Barclays Emerging Markets Local Currency Government Index is a flagship index that measures the performance of local currency Emerging Markets (EM) debt. Classification as an EM is rulesbased and reviewed annually using World Bank income group, International Monetary Fund (IMF) country classification and additional considerations such as market size and investability.

US Equities - S&P 500 Index

The S&P 500® is widely regarded as the best single gauge of Large-Cap U.S. Equities. There is over USD 9.9 trillion indexed or benchmarked to the index, with indexed assets comprising approximately USD 3.4 trillion of this total. The index includes 500 leading companies and covers approximately 80% of available market capitalization.

European Equities - EURO STOXX 50

The EURO STOXX 50 Index, Europe's leading blue-chip index for the Eurozone, provides a blue-chip representation of supersector leaders in the region. The index covers 50 stocks from 11 Eurozone countries. The index is licensed to financial institutions to serve as an underlying for a wide range of investment products such as exchange-traded funds (ETFs), futures, options and structured products.

Japanese Equities - Nikkei 225

The Nikkei 225 Stock Average is a price-weighted average of 225 top-rated Japanese companies listed in the First Section of the Tokyo Stock Exchange. The Nikkei Stock Average was first published on May 16, 1949, where the average price was ¥176.21 with a divisor of 225.

LatAm Equities - MSCI Emerging Markets Latin America Index

Latin America Index captures large- and mid-cap representation across 6 Emerging Markets (EM) countries* in Latin America. With 118 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

EM Asia Equities - MSCI Emerging Markets Asia Index

The MSCI Emerging Markets (EM) Asia Index captures large- and mid-cap representation across 9 Emerging Markets countries. With 903 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

EM European Equities - MSCI EMERGING MARKETS EUROPE INDEX

The MSCI Emerging Markets Europe Index captures large- and mid-cap representation across 6 Emerging Markets (EM) countries in Europe. With 72 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

Global Equities - MSCI All Country World Index (ACWI)

The MSCI ACWI is a market capitalization weighted index designed to provide a broad measure of equitymarket performance throughout the world. The MSCI ACWI is maintained by Morgan Stanley Capital International (MSCI) and is comprised of stocks from 23 developed countries and 24 emerging markets.

Hedge Fund Research - HFRX Global Hedge Fund Index

The HFRX Global Hedge Fund Index is designed to be representative of the overall composition of the hedge fund universe. It is comprised of all eligible hedge fund strategies falling within four principal strategies: Equity Hedge, event-driven, macro/CTA and relative value arbitrage.

Asset class and other definitions

Strategic Return Estimate (SRE): Citi Global Wealth Investments' forecast of returns for specific asset classes over a 10-year time horizon. The forecast for each specific asset class is made using a proprietary methodology that we believe is appropriate for that asset class. Equity asset classes are forecast using a proprietary methodology based on the calculation of valuation levels with the assumption these valuation levels revert to their long-term trends over time. The methodology is built around specific valuation measures that require several stages of calculation. Assumptions on the projected growth of earnings and dividends are additionally applied to calculate the SRE of the Equity asset class. Fixed Income asset classes are forecast using a proprietary methodology based on current yield levels. Other asset classes have other specific forecasting methodologies.

Asset class SREs are made up from each individual country's SREs in each asset class. AVS weights each country's SRE by that country's market capitalization to calculate an overall asset class SRE. But for homebias allocations, the home-bias country is given much larger weightings than its market capitalization would suggest, while other countries get a proportionately lower weighting.

Each SRE is gross of actual client fees and expenses. Components of the methodology used to create the SREs include the rate of return for various asset classes based on indices. Future rates of return cannot be predicted with certainty. Investments that pay higher rates of return are often subject to higher risk and greater potential loss in an extreme scenario. It is not possible to invest directly in an index.

Global Developed Market Equity

The asset class is composed of MSCI indices capturing large-, mid- and small-cap representation across 18 individual developed markets countries, as weighted by the market capitalization of these countries. The composite covers approximately 95% of the free float-adjusted market capitalization in each country.

Global Emerging Market Equity

The asset class is composed of MSCI indices capturing large- and mid-cap representation across 20 individual emerging-market countries. The composite covers approximately 85% of the free float-adjusted market capitalization in each country. For the purposes of supplemental long-term historical data, local-market country indices are used, wherever applicable.

Diversified Equities refer to holdings that have broad investment mandates spanning multiple geographies and/or categories, e.g. Developed Large-Cap, Developed Small- and Mid-Cap and Emerging Equities.

Other Equities include other areas within Equities which cannot be categorized using the standard sub-asset classes methodology, e.g. funded structured products.

Global Developed Investment Grade Fixed Income The asset class is composed of Bloomberg Barclays indices capturing investment grade debt from twenty different local currency markets. The composite includes fixed-rate treasury, government-related, investment grade rated corporate and securitized bonds, and mortgage-backed securities from the developed-market issuers. Local market indices for US, UK and Japan are used for supplemental historical data.

Global High Yield Fixed Income

The asset class is composed of Bloomberg Barclays indices measuring the non-investment grade, fixed rate corporate bonds denominated in USD, GBP and EUR. Securities are classified as high yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+/ BB+ or below, excluding emerging market debt. Ibbotson High Yield Index, a broad high yield index including bonds across the maturity spectrum, within the BB-B rated credit quality spectrum, included in the below-investment-grade universe, is used for supplemental historical data.

Global Emerging Fixed Income

The asset class is composed of Bloomberg Barclays indices measuring performance of fixed and floating rate US dollar denominated emerging markets sovereign debt for 3 different regions including Latin America, EMEA and Asia.

Diversified Fixed Income includes holdings that combine distinct global and credit spectrum categories, e.g. Developed Investment Grade, Developed High Yield and Emerging Markets Fixed Income.

Other Debt includes any other sub-segments within Fixed Income that cannot be categorized using the standard sub-asset classes methodology, e.g. rateslinked structured products.

Cash

The asset class is represented by US 3-Month Government Bond TR, measuring the USD denominated active 3-month fixed-rate nominal debt issues by the US Treasury.

Hedge Funds

The asset class is composed of investment managers employing different investment styles as characterized by different sub categories – HFRI Equity Long/Short: Positions both long and short in primarily Equity and Equity-derivative securities; HFRI Credit: Positions in corporate Fixed Income securities; HFRI Event Driven: Positions in companies currently or prospectively involved in wide variety of corporate transactions; HFRI Relative Value: Positions based on a valuation discrepancy between multiple securities; HFRI Multi Strategy: Positions based on realization of a spread between related yield instruments; HFRI Macro: Positions based on movements in underlying economic variables and their impact on different markets; Barclays Trader CTA Index: The composite performance of established programs (Commodity Trading Advisors) with more than four years of performance history.

Private Equity

The asset class characteristics are driven by those for Developed Market Small-Cap Equities, adjusted for illiquidity, sector concentration and greater leverage.

Real Estate

The asset class contains index contains all Equity REITs (US REITs and publicly-traded Real Estate companies) not designated as Timber REITs or Infrastructure REITs: NAREIT US REIT Index, NAREIT Canada REIT Index, NAREIT UK REIT Index, NAREIT Switzerland REIT Index, NAREIT Euro zone REIT Index, NAREIT Japan REIT Index, NAREIT Hong Kong REIT Index, NAREIT Singapore REIT Index, NAREIT Australia REIT Index.

Commodities

The asset class contains the index composites – GSCI Precious Metals Index, GSCI Energy Index, GSCI Industrial Metals Index, and GSCI Agricultural Index – measuring investment performance in different markets, namely precious metals (e.g. gold, silver), energy commodities (e.g. oil, coal), industrial metals (e.g. copper, iron ore) and agricultural commodity (e.g. soy, coffee) respectively. Reuters/Jeffries CRB Spot Price Index, the TR/CC CRB Excess Return Index, an arithmetic average of commodity futures prices with monthly rebalancing, is used for supplemental historical data.

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