White Paper
Asset Allocation

October 2023

Global Market Portfolio 2023
Expect Higher Returns

Frederic Dodard, CFA®, FRM®[1]
EMEA Head — Investment Solutions Group

Amy Le, CFA®
Macro-Investment Strategist
Global Macro Research

STATE STREET GLOBAL ADVISORS

Summary

Led by convalescent equity markets, the Global Market Portfolio (GMP) is recovering slowly, but steadily, after an abysmal 2022.

Frederic Dodard
CFA®, FRM®
EMEA Head —
Investment Solutions Group

Amy Le, CFA®
Macro-Investment Strategist
Global Macro Research

The global investment landscape has changed dramatically over the past few decades with financial globalization, digitalization of economies, the rise of China and India, and the development of alternative investments and asset classes.

The GMP encompasses the universe of all investable assets, and their market value at a given point in time; and so we continue to examine its evolution. It represents the positioning of investors in aggregate and reveals insights into their attitudes and preferences. The GMP, therefore, could be considered as a natural benchmark for investors' strategic asset allocations, much more diversified and theoretically sound than the iconic 60/40 equity–bond benchmark. Over the years, we have refined our framework and expanded the scope of the GMP to markets and asset classes that have become larger in size and more relevant to investors. With this in mind, it was natural to add private credit to the mix of our 2023 publication.

Given the extremely challenging market conditions in 2022, the GMP has seen a significant drop in value from USD 181.1 trillion in December 2021 to USD 153.5 trillion in December 2022. It started to recover at the beginning of this year to see a rise in H1 2023, reaching USD 164.5 trillion as of the end of June 2023.

As investors need to get the most out of their portfolios in order to meet their financial objectives, questions related to asset classes that they should consider for the long term — in terms of risks vs. returns, and how they should blend them efficiently — should continue to be main investor concerns. The recent historical trends may provide insights to help make educated decisions regarding these investment opportunities, with a truly global mindset.

Given our proprietary capital market assumptions, the expected return for the GMP over the long run is 5.3%, which is much higher than the forecasts we have published over the last three years and our first GMP estimates in 2014.[2] This largely reflects the higher-interest-rate environment since 2021 and higher expected return for fixed income markets after many years of lackluster outlook.

A Brief History

The idea of a global market portfolio — a portfolio of all risky assets proportionally weighted by their market capitalization — was originally proposed by James Tobin in 1958 and subsequently refined by William Sharpe in 1964.

Given its intrinsic diversification, the market portfolio is subject only to systematic multi-asset class risks — that is, risks that affect the market as a whole — and not to unsystematic risks inherent to a particular asset class. This idea has since shaped the asset management industry, playing a crucial role in the formation of concepts of asset allocation and the Capital Asset Pricing Model.

The market portfolio provides exposure to a broad set of global asset classes and market factors, such as equity risk premium, interest rate term premium, credit risk premium and, to a lesser extent, liquidity risk premium through the inclusion of less liquid assets.

In 2014, an important research article presented the methodology for a Global Multi-Asset Market Portfolio, an aggregate portfolio of the market as a whole, containing all types of investable assets available globally.[3] What was at the beginning a cornerstone of the Modern Portfolio Theory over time became a tangible investment reality: Over 90% of the aggregate market portfolio's exposure and composition can now be accessed by all categories of investors using easily tradable financial instruments.

Contents

Constructing the GMP

We define the GMP as consisting of all investable capital assets corresponding to its market value divided by the sum of the market values of all assets.

As the sum of all holdings that result from the collective decisions of investors and issuers, as well as suppliers and demanders of capital, the GMP can be seen as a de facto proxy for the investable opportunity set available to all investors globally, where weights are a function of their respective market capitalization at any given point in time — and thus a reasonable benchmark for the average investor.

It is important to understand that there can be a huge variation of portfolios centered on the GMP. Different investors have different investment preferences and objectives, which lead to different portfolios.

For example, a corporate defined benefit (DB) plan will have a sizable weight in long-duration bonds to match its long-term liabilities, while a bank's investment portfolio will consist largely of short-term bonds and cash equivalents held against its short-term liabilities. Endowments and foundations with longer investment horizons can take advantage of the illiquidity premium in their long-term allocations to illiquid investments, such as private equity (PE) or private credit.

In our framework, we use broad indexes to obtain invested market capitalizations for different asset classes. However, we exclude cash and commodities, except gold, from this portfolio as our focus is on capital and store-of-value assets.

We are interested in the gold that central banks, sovereign wealth funds, institutions and individual investors treat as a store of value. The World Gold Council estimated that as of end-2022, approximately 208,874 tons of gold had been mined over the course of human history. Excluding most gold that is used to make jewelry, along with the smaller amounts found in devices from mobile phones to medical equipment, we find that around 39% of available gold can be considered for its total capital asset value — that is, the sum of public and private investment holdings of gold.

This framework allows us to monitor changes in the GMP over time. We present below our estimates of the GMP's capital market values and weighting as of June 2023, as well as its expected risk–return profile over different forward-looking horizons. Then we evaluate the risk contribution of each asset class to the GMP as a percentage of total variance. We use the US dollar (USD) to compute the values of the various assets. In years like 2022, when the USD appreciated against many currencies, this has exacerbated the decline in value.

Composition of the GMP

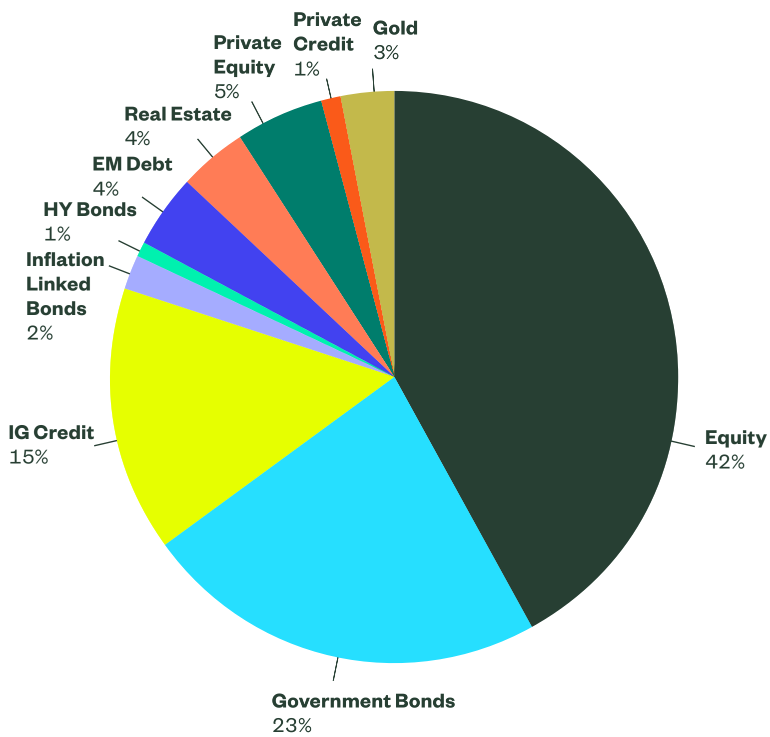
The GMP's total worth (Figure 1) can be estimated at USD 164.5 trillion (as of June 2023), an increase of USD 11 trillion since December 2022, but still a decline of USD 16.6 trillion since December 2021.

Equities represent the largest asset class, with a market value of USD 69.8 trillion, which equals 42.5% of the total market capitalization of all asset classes.

Core bonds of good quality represent USD 63 trillion, which equals 38.3% of the total. It embraces government bonds and investment grade (IG) credit, with a market value and weight of USD 38.7 trillion and 23.5%, and USD 24.3 trillion and 14.9%, respectively.

The other asset classes represent a much smaller weighting as their market capitalizations add up to 19.3% of the GMP. Alternative asset classes (real estate, private equity, private credit, gold) represent 12.7% of the GMP.

Figure 1
Global Market Portfolio Weights



Note: Valued at USD 164.5 trillion as of the end of June 2023. Weights are as of the date indicated, are subject to change, and should not be relied upon as current thereafter.
Source: Thomson Reuters, Bloomberg, PreQin, World Gold Council, State Street Global Advisors, as of June 2023.

Equity

Since December 2022 and following a very challenging year for global capital markets, global equities have seen an impressive rebound with a marked preference for technology companies.

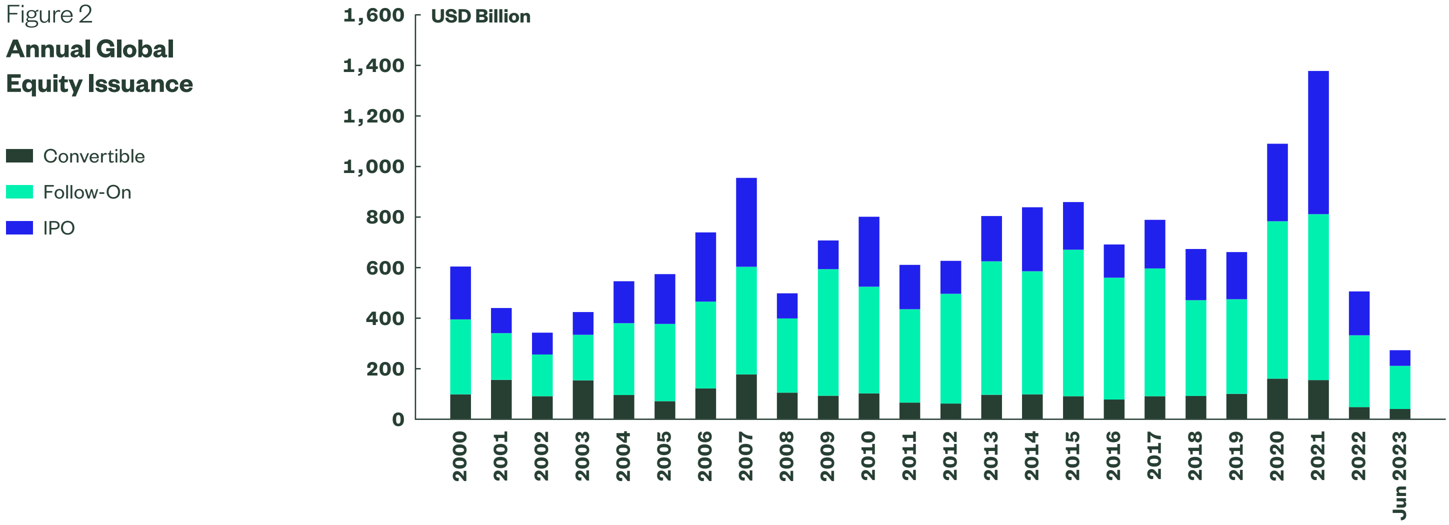
As of June-end 2023, equities took up USD 69.8 trillion, 12.3% higher than in December 2022, but were still 10.3% lower than their December 2021 level. Their market value was also almost four times their level during the Global Financial Crisis (GFC) in 2008. Despite this decline, equity weighting has also stabilized around the 43% level, given the sharp decline in value of other asset classes, particularly that of bonds, which had faced in 2022 their worst year in several decades.

Equity capital market activity and overall issuance have been particularly affected by the deterioration of market conditions. For instance, global initial public offering activity dropped by 69% in 2022 vs. 2021, to reach USD 174 billion in 2022, and has continued to stay at a depressed level, with USD 62 billion issued in the first half of 2023.

The second half of 2023 might be more positive, with several iconic initial public offerings (IPOs), such as Arm and Birkenstock, but the global issuance is expected to remain depressed for most of H2 2023. Global follow-on or secondary offering activity totaled USD 286 billion in 2022 and USD 171 billion in H1 2023, a significant decline vs. the prior years and another illustration of tough market conditions within equity capital markets.

Global convertible offerings totaled USD 46 billion in 2022, a 70% decline vs. 2021. H1 2023 saw USD 39 billion of offerings — a visible improvement vs. H1 2022.

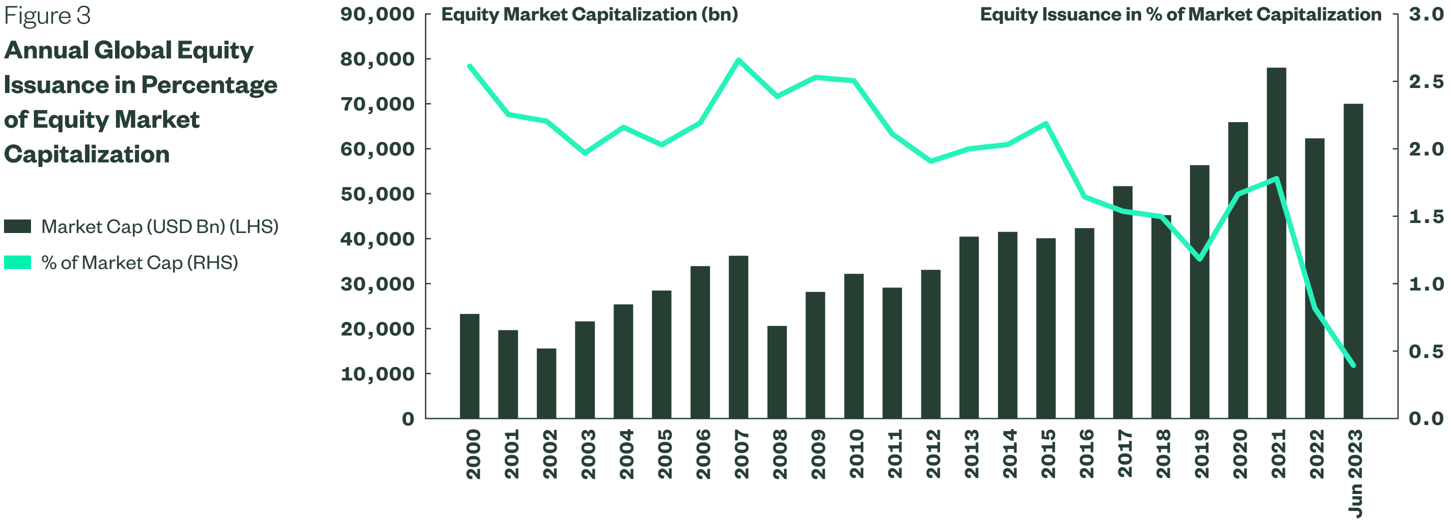
Figure 2
Annual Global Equity Issuance



Source: Thomson Reuters, Bloomberg, PreQin, World Gold Council, State Street Global Advisors, as of 30 June 2023. Data refers to live transactions.

As a percentage of the total market capitalization of the equity market, the new issuance in 2022 represented 0.8%, which is by far the lowest level seen since 2000 and the trend observed insofar for 2023 will probably make 2023 as bad.

Figure 3
Annual Global Equity Issuance in Percentage of Equity Market Capitalization



Source: Thomson Reuters, Bloomberg, PreQin, World Gold Council, State Street Global Advisors, as of 30 June 2023. Data refers to live transactions.

Bonds

Global bond markets had faced unprecedented headwinds in 2022. After an all-time high of USD 81.45 trillion in December 2021, the market value of public debt securities had declined to USD 70.8 trillion in December 2022, a 13.1% drop.

It is the first time in our sample that the global bond market value registered a double-digit decline in a calendar year. With more challenging market conditions, bond issuance in 2022 had totaled USD 8.03 trillion, which is 18.7% lower than the 2021 level and the most dramatic relative decline since the GFC. On average, the total new issuance in a given year represents 15.5% of the value. Last year, this was 11.4%.

During the first two quarters of 2023, bond markets started to stabilize. The total market value had reached USD 73.8 trillion at the end of June, a 4.3% increase compared to the end of 2022. However, bond prices remain under pressure, and volatility elevated, and certain parts of the markets continue to be distressed.

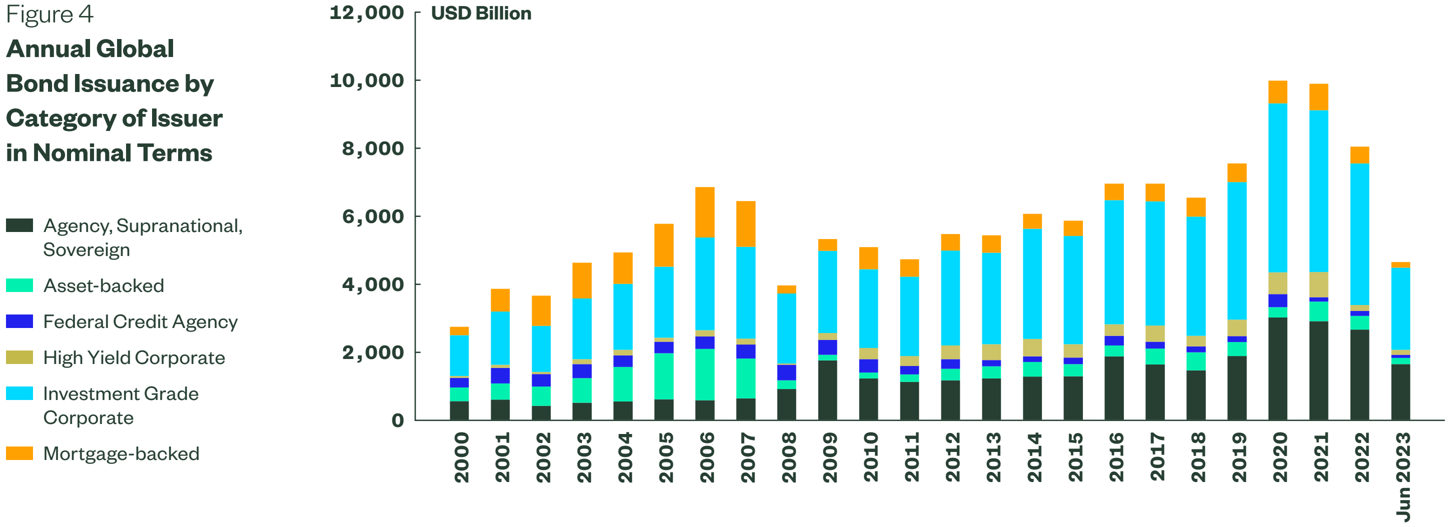
The total level of debt issuance in H1 2023 had reached USD 4.6 trillion, slightly less than the USD 4.7 trillion level of debt issued in H1 2022, but significantly below the USD 5.3 trillion issued in H1 2021, and the USD 5.5 trillion issued in H1 2020.

Issuance in investment grade credit and high yield has been visibly better this year, whereas mortgage-backed securities issuance has been depressed. Agency, supranational and sovereign issuances have been broadly in line with the levels seen in 2022 and 2021, but lower than in 2020, the pandemic year that had seen exceptional issuance.

Developed market (DM) bond issuance continued to lose momentum after reaching the high in 2021, with 2022 issuance contracting 25% from the previous year and 31% from the high in 2021. As of Q2 2023, DM bond issuance was 2% lower than the same period last year. Meanwhile, total debt issuance as of Q4 2022 in emerging market (EM) countries dropped by 5% compared to the previous year. As of Q2 2023, EM countries were responsible for more than 35% of the total global debt issuance, compared with 42% in December 2022 and just around 3.5%–4% in early 2000s. Within EM countries, China alone accounted for more than 80% of EM debt issuance as of Q2 2023, down from 85% in 2022, but up from 78% in 2020. As a comparison, China represented less than 1% of debt issuance in 2007.

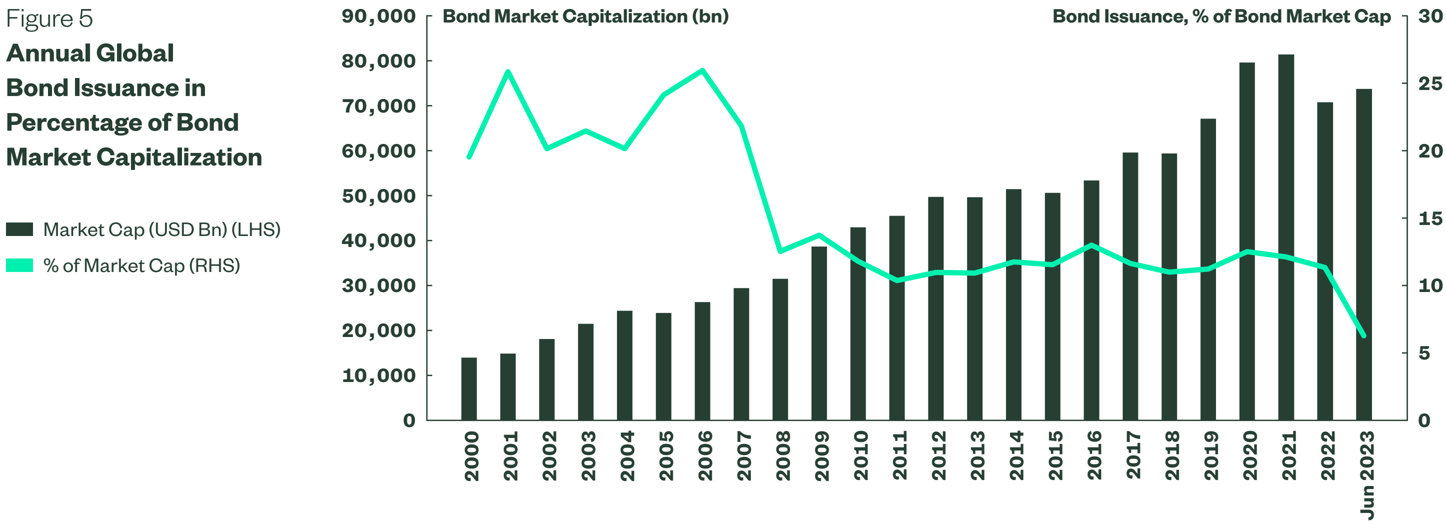
Looking ahead, market conditions continue to be uncertain and will remain challenging for the foreseeable future: inflation is still too high, albeit on the right downtrend trajectory in Q3 2023, and central banks are expected to remain hawkish, keeping short-term rates higher for longer.

Figure 4
Annual Global Bond Issuance by Category of Issuer in Nominal Terms



Source: Thomson Reuters, Bloomberg, PreQin, World Gold Council, State Street Global Advisors, as of June 2023. Data refers to live transactions. Data for 2023 only covers the first six months.

Figure 5
Annual Global Bond Issuance in Percentage of Bond Market Capitalization



Source: Thomson Reuters, Bloomberg, PreQin, World Gold Council, State Street Global Advisors, as of June 2023. Data refers to live transactions.

Alternatives

Following a sharp decline in deal-making in 2020, private equity valuations have rebounded strongly as economic activity recovered. The estimated AuM as of end-2022 are around USD 7.8 trillion, a 13% increase from 2021. The gain was mainly driven by higher AuM in buy-out (+12%) venture capital (+22%) and generalist (+18%).

As of end-2022, buyout accounted for 61.5% of total private equity (PE), followed by venture capital (18.5) and generalist (17.2%).[4] PE is currently estimated to represent 4.7% of the GMP, compared to levels closer to 4% over the prior years.

As of the end of June 2023, gold was estimated to account for 3.1% of the GMP, close to the 3.1% levels of 2022. Its total value reached USD 5.1 trillion, which is its all-time high value. Gold's current weighting now is interestingly lower than the 3.7% level seen in 2011–12, when central banks were effectively very active in quantitative easing and asset purchase programs in the aftermath of the GFC and the beginning of the eurozone crisis.

During 2022 and the beginning of 2023, real estate's market value dramatically declined by 26% from USD 8.8 trillion in December 2021 to USD 6.5 trillion in June 2023. Real estate's market value is now significantly lower than its pre-pandemic December 2019 level. Real estate was estimated to account for 4.0% of the GMP as of end-June 2023, which is the lowest proportion since 2009.

Rise of Private Credit as an Asset Class

The size of the private credit market has significantly increased over time and, after two decades of sustained growth, is close in size to that of the global high yield bond market.

By definition, this asset class is not as accessible as public debt but has started to play a rising role in institutional investors' portfolios, given the potentially attractive risk–return characteristics. As an alternative to traditional bank lending, private credit provides debt finance to mostly private-equity-owned middle-market companies that are not publicly traded or issued.

Private credit covers a range of strategies, including direct lending, venture debt or special situations, as well as different types of debt such as senior secured loans, junior unsecured credit and loans against specialized assets.

At the top of capital structure, senior debt provides more stable yield and has the lowest risk and return profile. This is followed by unsubordinated and mezzanine loans and equity.

Distressed and opportunistic strategies that aim at companies going through major challenges, while having the widest range of outcomes, and lacking a yield component, tend to have higher upside as firms are restructured. Given their flexibility, return enhancement and relatively light regulation, more firms are gravitating to private equity.

The expansion pace of private credit is one of the fastest, with AuM close to USD 1.5 trillion as of end 2022 (source: Preqin), of which nearly 30% is dry powder. The strength was primarily led by impressive growth in generalist (increasing by more than five times during Q4 2016–Q2 2023), senior (more than doubled its size during Q4 2019–Q2 2023), mezzanine and distressed debt (almost doubled their sizes during Q4 2016–Q2 2023).[5] Amongst these, distressed debt accounts for 33%, followed by mezzanine (23%) and generalist (22%).The current gloomy economic outlook, with higher for longer interest rates and persistently elevated inflation, presents challenges as well as opportunities for the asset class.

The following table maps the evolution of the market values from December 2021 to June 2023.

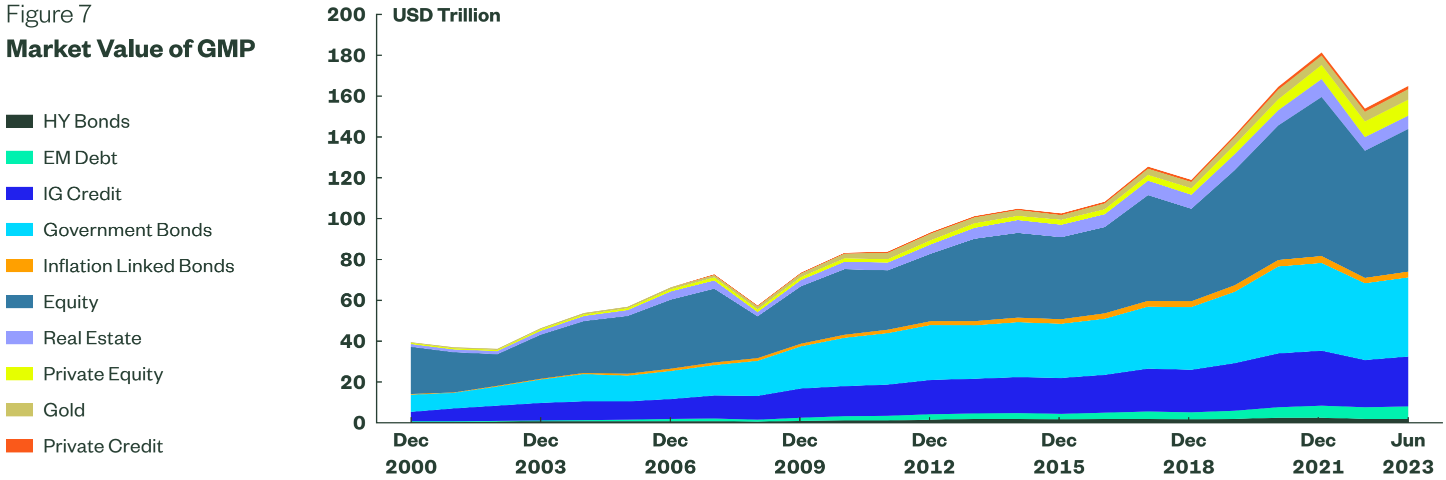
Figure 6
Comparison Between December 2021 and June 2023

	Dec 2021 (USD Bn)	Dec 2022 (USD Bn)	Jun 2023 (USD Bn)	Evolution, USD Bn (Dec 2022–Jun 2023)	Evolution, % (June 2023 vs. Dec 2022)
Equity	77,842.0	62,156.9	69,826.9	7,670.0	12.3
Government Bonds	42,880.0	37,437.0	38,707.9	1,270.8	3.4
IG Credit	26,716.0	23,187.1	24,273.8	1,086.7	4.7
Real Estate	8,804.0	6,605.4	6,525.9	-79.6	-1.2
Private Equity*	6,294.0	7,788.5	7,788.5	0.0	0.0
EM Debt	5,944.0	5,662.9	6,228.0	565.0	10.0
Gold	4,622.0	4,694.3	5,074.4	380.1	8.1
Inflation-Linked Bonds	3,433.0	2,676.8	2,788.3	111.5	4.2
HY Bonds	2,477.0	1,843.6	1,828.7	-14.8	-0.8
Private Credit*	1,313.3	1,501.3	1,501.3	0.0	0.0
Total Global Market Portfolio	**180,325.3**	**153,553.9**	**164,543.7**	**10,989.8**	**7.2**

Source: Thomson Reuters, Bloomberg, PreQin, World Gold Council, Goldman Sachs, State Street Global Advisors, as of June 2023. *For private equity and private credit, latest data is as of Q4 2022, given June data was not yet available when this report was finalized.

Figure 7 highlights the evolution of the total capital value of the GMP over time, which shows an increase of 317% from December 2000, when it was valued USD 39.5 trillion, to USD 164.5 trillion in June 2023. The impact of 2022 is very visible.

Figure 7
Market Value of GMP



Source: Thomson Reuters, Bloomberg, PreQin, World Gold Council, State Street Global Advisors, as of 30 June 2023.

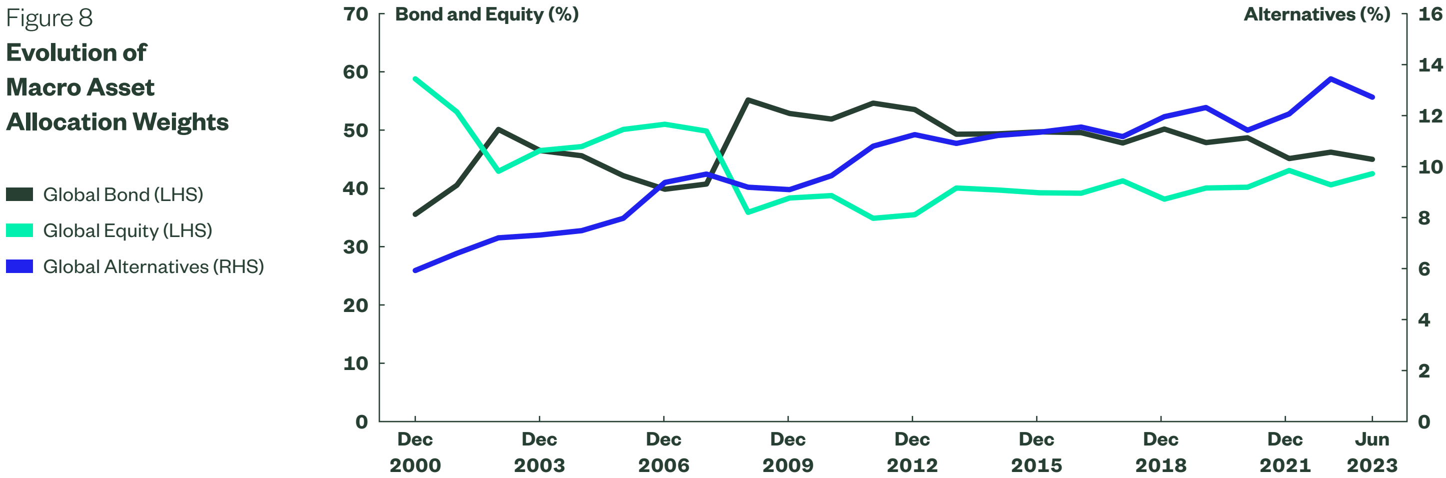
Of interest should also be the evolution of the weighting of macro asset allocation over time that we show in Figure 7. At the peak of the equity markets bubble in 2000, the weighting of equity reached an impressive 59%. It has steadily and visibly declined since then, reaching 50% in 2007 and oscillating between 35% and 45% since 2008.

During bear markets and major corrections (2008, 2011 and March 2020), equity weighting tends to reach the low end of this range as depressed equity prices negatively impact equity weighting compared with other macro asset classes.

Conversely and unsurprisingly, given their more defensive characteristics, bond weighting tends to increase in equity bear markets, reaching close to 55%. Examples of this include December 2008 (55.3%), the eurozone crisis of 2011 (54.8%), and March 2020 (53.9%). As of June 2023, global bonds represented 45% of the GMP.

The weighting of alternative asset classes has been steadily increasing, more than doubling in weight in two decades, reaching 13.4 % in 2022 from 6% in 2000, thanks to their developments over time, greater acceptance by investors and the rise in value experienced by key alternative asset classes such as private equity, private credit and gold.

Figure 8
Evolution of Macro Asset Allocation Weights



Source: Thompson Reuters, Bloomberg, PreQin, World Gold Council, State Street Global Advisors, as of 30 June 2023.

GMP — Performance Outlook

We expect the GMP to return 5.5% over a year (gross of fees and any transaction costs) in local currency terms, while not taking into account currency fluctuations or costs of hedging. The most important positive contributors of this return are likely to be equities and risky debt.

Although relatively low, the GMP's return remains positive and above the current level of realized and anticipated inflation in most advanced countries.

Figure 9
Risk–Return Forecasts for Global Market Portfolio

	USD Billion	Weights (%)	Annualized Return			Intermediate-Term Risk (Std. Dev.) (%)
			1 Year (%)	3–5 Years (%)	10+ Years (%)	
Equity	69,826.9	42.4	7.1	6.4	6.2	14.3
Government Bonds	38,707.9	23.5	3.2	3.6	3.4	4.1
IG Credit	24,273.8	14.8	4.6	4.7	4.9	7.4
Inflation Linked Bonds	2,788.3	1.7	4.6	4.8	4.4	5.7
HY Bonds	1,828.7	1.1	5.6	6.4	6.2	8.7
EM Debt	6,228.0	3.8	6.1	6.9	8.1	10.6
Real Estate	6,525.9	4.0	5.0	6.2	6.1	16.6
Private Equity	7,788.5	4.7	8.4	7.8	7.5	9.8
Private Credit	1,501.0	0.9	6.4	6.4	6.4	5.6
Gold	5,074.4	3.1	2.7	2.7	2.7	15.4
Global Invested Multi-Asset Market Portfolio	**164,543.4**	**100**	**5.5**	**5.4**	**5.3**	**8.5**

Note: The above forecasts are estimates based on certain assumptions made and analyses run by State Street Global Advisors. There is no guarantee that the estimates will be achieved. Risk and Returns Assumptions were based on Q3 2023. 10+year returns for Private Credit and Gold are used as proxy for 1-year and 3-5 year returns for these assets.
Source: Bloomberg, Thomson Reuters, PreQin, World Gold Council, FactSet, State Street Global Advisors, as of 30 June 2023.

In the longer term, we expect the GMP to deliver 5.3%. We also estimate the portfolio's intermediate-term risk using expected volatility (standard deviation) of each of the asset classes and the correlations between them. As of June 2023, this stands at 8.5%.

What Can Investors Learn From These Forecasts?

Given the high inflation and much higher cash yield conditions, the return from the GMP appears to compensate for the risks borne by investors, making a strong case for the GMP's continued importance for investors.

But it is equally possible that these forecasts fall short of the long-term objectives of certain investors. In such a scenario, investors will need to look at other ways to engineer a higher rate of performance — for instance, by way of a more aggressive asset allocation strategy, with a larger emphasis on growth assets, active security selection, tactical asset allocation or private assets. As this means assuming greater risk, requiring greater care, an alternative way forward is to get investor expectations and objectives revised and updated in line with the reality that the current GMP reflects.

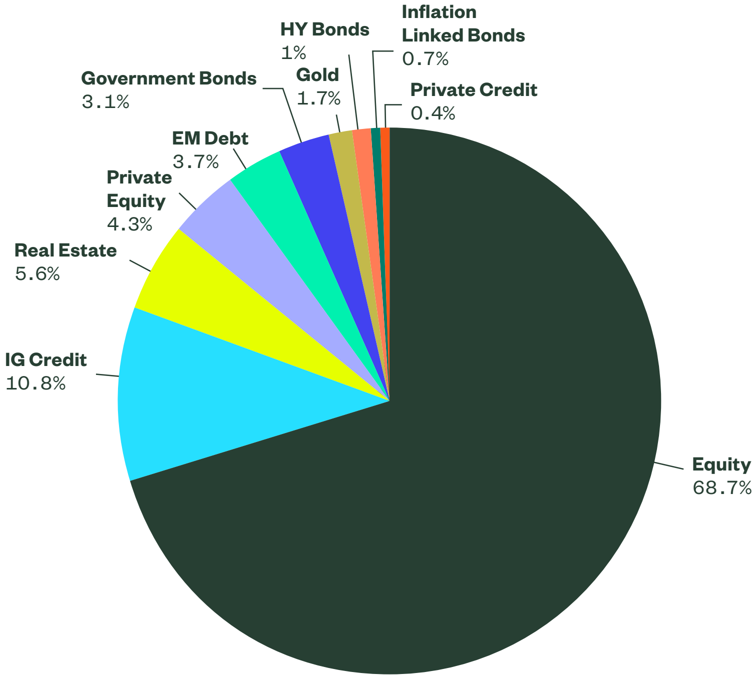
Balancing Risks and Returns

Another key consideration is the risk contribution of each asset class (Figure 9). The concept of risk contribution or risk attribution is widely used for asset allocation, active portfolio management, risk management and risk budgeting. Put simply, calculating the risk contribution allows us to evaluate how much risk comes from each asset class as a percentage of the total variance of the GMP.

Global equity risk continues to dominate. With a 42.5% capital allocation, equities account for 68.7% of the total risk of the GMP as an asset class. Although some investors may take issue with this, given the need for equity returns in the current low-yield rate environment, we would caution against reducing this allocation too drastically. Investors could, instead, consider a number of risk management approaches to reduce the risk — either at the equity level or at the total portfolio level. Such approaches could include, for instance, managed-volatility equities, target volatility triggers or option overlays that are either strategically or dynamically adjusted.

Dynamic asset allocation could also play a key part in both engineering higher returns and reducing risk, by adding a set of shorter-term exposures based on a tactical market outlook, as well as investor sentiment, regarding the GMP. The GMP, more than ever, is an important starting point and these options allow investors to improve the risk and return profile of their individual portfolios and assess them relative to the GMP in order to target better outcomes.

Figure 10
Risk Contribution by Asset Class



Note: Figures are as of the date indicated, are subject to change and should not be relied upon as current thereafter.
Source: Bloomberg, Thomson Reuters, PreQin, World Gold Council, FactSet, State Street Global Advisors, as of 30 June 2023.

Conclusion

After reaching the impressive all-time value record of USD 180.0 trillion in 2021, the global market portfolio has fallen to USD 164.0 trillion in Q2 2023.

It has benefitted from very positive tailwinds, such as strong equity performance and significant levels of security issuances in equity and fixed income markets. It had been modestly affected by several benign headwinds: the strength of the USD, corporate buybacks and the lackluster performance of certain asset classes like high-quality and investment grade bonds, EM debt and gold.

Equity weight as a percentage of the total GMP stands now at 42.5%. It has not reached the levels last seen during the previous peaks of the equity markets in 2000 and 2007.

After the post-pandemic surge in global inflation, central banks began to realize that unconventional monetary policies entail costs in addition to benefits. With the sharp increase in government debt and higher-for-longer inflation, we are seeing steeper yield curves. In addition, with surging yield and slow global growth, the current environment is not friendly to equities. Risk appetite is likely to drop, and equities are expected to correct lower. And in light of the changing banking landscape, private markets might offer attractive opportunities over time.

The GMP framework continues to provide investors with an effective tool to guide them in their asset allocation decision. For those investors who wish to achieve a higher rate of return, they should consider a more aggressive asset allocation with an even larger emphasis to growth assets, active strategies such as security selection or tactical asset allocation.

Endnotes

1 CFA® and Chartered Financial Analyst® are trademarks of the CFA Institute. FRM® is trademark of the Global Association of Risk Professionals, Inc.

2 Dodard, F., & Greenway, A. (2015), “Using the Global Market Portfolio as a Natural Benchmark,” State Street Global Advisors.

3 Doeswijk, R., Lam, T., & Swinkels, L. (2014), “The Global Multi-Asset Market Portfolio, 1959–2012,” *Financial Analysts Journal*, 70(2).

4 Burgiss Manager Universe Snapshot 2016–22, Q3 2023.

5 Ibid.

ssga.com

Marketing communication.
For professional clients only.

State Street Global Advisors Worldwide Entities

Abu Dhabi: State Street Global Advisors Limited, ADGM branch is regulated by the Financial Services Regulatory Authority (FSRA).
This document is intended for Professional Clients or Market Counterparties only as defined by the FSRA and no other person should act upon it. State Street Global Advisors Limited, ADGM Branch, Al Khatem Tower, Suite 42801, Level 28, ADGM Square, Al Maryah Island, P.O. Box 76404, Abu Dhabi, United Arab Emirates. Regulated by the ADGM Financial Services Regulatory Authority. T: +971 2 245 9000. **Australia:** State Street Global Advisors, Australia, Limited (ABN 42 003 914 225) is the holder of an Australian Financial Services License (AFSL Number 238276). Registered office: Level 14, 420 George Street, Sydney, NSW 2000, Australia. T: +612 9240-7600. F: +612 9240-7611. **Belgium:** State Street Global Advisors Belgium, Chaussée de La Hulpe 185, 1170 Brussels, Belgium. T: +32 2 663 2036. State Street Global Advisors Belgium is a branch office of State Street Global Advisors Europe Limited, registered in Ireland with company number 49934, authorised and regulated by the Central Bank of Ireland, and whose registered office is at 78 Sir John Rogerson's Quay, Dublin 2. **Canada:** State Street Global Advisors, Ltd., 1981 McGill College Avenue, Suite 500, Montreal, Qc, H3A 3A8, T: +514 282 2400 and 30 Adelaide Street East Suite 800, Toronto, Ontario M5C 3G6. T: +647 775 5900. **France:** State Street Global Advisors Europe Limited, France Branch ("State Street Global Advisors France") is a branch of State Street Global Advisors Europe Limited, registered in Ireland with company number 49934, authorised and regulated by the Central Bank of Ireland, and whose registered office is at 78 Sir John Rogerson's Quay, Dublin 2. State Street Global Advisors France is registered in France with company number RCS Nanterre 899 183 289, and its office is located at Coeur Défense — Tour A — La Défense 4, 33e étage, 100, Esplanade du Général de Gaulle, 92 931 Paris La Défense Cedex, France. T: +33 1 44 45 40 00. F: +33 1 44 45 41 92. **Germany:** State Street Global Advisors Europe Limited, Branch in Germany, Brienner Strasse 59, D-80333 Munich, Germany ("State Street Global Advisors Germany"). T: +49 (0)89 55878 400. State Street Global Advisors Germany is a branch of State Street Global Advisors Europe Limited, registered in Ireland with company number 49934, authorised and regulated by the Central Bank of Ireland, and whose registered office is at 78 Sir John Rogerson's Quay, Dublin 2. **Hong Kong:** State Street Global Advisors Asia Limited, 68/F, Two International Finance Centre, 8 Finance Street, Central, Hong Kong. T: +852 2103-0288. F: +852 2103-0200. **Ireland:** State Street Global Advisors Europe Limited is regulated by the Central Bank of Ireland. Registered office address 78 Sir John Rogerson's Quay, Dublin 2. Registered Number: 49934. T: +353 (0)1 776 3000. F: +353 (0)1 776 3300. **Italy:** State Street Global Advisors Europe Limited, Italy Branch ("State Street Global Advisors Italy") is a branch of State Street Global Advisors Europe Limited, registered in Ireland with company number 49934, authorised and regulated by the Central Bank of Ireland, and whose registered office is at 78 Sir John Rogerson's Quay, Dublin 2. State Street Global Advisors Italy is registered in Italy with company number 11871450968 — REA: 2628603 and VAT number 11871450968, and its office is located at Via Ferrante Aporti, 10 - 20125 Milan, Italy. T: +39 02 32066 100. F: +39 02 32066 155. **Japan:** State Street Global Advisors (Japan) Co., Ltd., Toranomon Hills Mori Tower 25F 1-23-1 Toranomon, Minato-ku, Tokyo 105-6325 Japan. T: +81-3-4530-7380. Financial Instruments Business Operator, Kanto Local Financial Bureau (Kinsho #345), Membership: Japan Investment Advisers Association, The Investment Trust Association, Japan, Japan Securities Dealers' Association. **Netherlands:** State Street Global Advisors Netherlands, Apollo Building 7th floor, Herikerbergweg 29, 1101 CN Amsterdam, Netherlands. T: +31 20 7181 000. State Street Global Advisors Netherlands is a branch office of State Street Global Advisors Europe Limited, registered in Ireland with company number 49934, authorised and regulated by the Central Bank of Ireland, and whose registered office is at 78 Sir John Rogerson's Quay, Dublin 2. **Singapore:** State Street Global Advisors Singapore Limited, 168, Robinson Road, #33-01 Capital Tower, Singapore 068912 (Company Reg. No: 200002719D, regulated by the Monetary Authority of Singapore). T: +65 6826-7555. F: +65 6826-7501. **South Africa:** State Street Global Advisors Limited is regulated by the Financial Sector Conduct Authority in South Africa under license number 42670. **Switzerland:** State Street Global Advisors AG, Beethovenstr. 19, CH-8027 Zurich. Registered with the Register of Commerce Zurich CHE-105.078.458. T: +41 (0)44 245 70 00. F: +41 (0)44 245 70 16. **United Kingdom:** State Street Global Advisors Limited. Authorised and regulated by the Financial Conduct Authority. Registered in England. Registered No. 2509928. VAT No. 5776591 81. Registered office: 20 Churchill Place, Canary Wharf, London, E14 5HJ. T: 020 3395 6000. F: 020 3395 6350. **United States:** State Street Global Advisors, 1 Iron Street, Boston, MA 02210-1641. T: +1 617 786 3000.

The views expressed in this material are the views of Frederic Dodard and Amy Le through the period ended 31 October 2023 and are subject to change based on market and other conditions. This document may contain certain statements deemed to be forward-looking statements. All statements, other than historical facts, contained within this document that address activities, events or developments that SSGA expects, believes or anticipates will or may occur in the future are forward-looking statements. These statements are based on certain assumptions and analyses made by SSGA in light of its experience and perception of historical trends, current conditions, expected future developments and other factors it believes are appropriate in the circumstances, many of which are detailed herein. Such statements are subject to a number of assumptions, risks, uncertainties, many of which are beyond SSGA's control. Please note that any such statements are not guarantees of any future performance and that actual results or developments may differ materially from those projected in the forward-looking statements.

Risk associated with equity investing include stock values which may fluctuate in response to the activities of individual companies and general market and economic conditions.

The information provided does not constitute investment advice and it should not be relied on as such. It should not be considered a solicitation to buy or an offer to sell a security. It does not take into account any investor's particular investment objectives, strategies, tax status or investment horizon. You should consult your tax and financial advisor. All information is from SSGA unless otherwise noted and has been obtained from sources believed to be reliable, but its accuracy is not guaranteed. There is no representation or warranty as to the current accuracy, reliability or completeness of, nor liability for, decisions based on such information and it should not be relied on as such.

Bonds generally present less short-term risk and volatility than stocks, but contain interest rate risk (as interest rates rise bond prices usually fall); issuer default risk; issuer credit risk; liquidity risk; and inflation risk. These effects are usually pronounced for longer-term securities. Any fixed income security sold or redeemed prior to maturity may be subject to a substantial gain or loss.

Government bonds and corporate bonds generally have more moderate short-term price fluctuations than stocks, but provide lower potential long-term returns.

Investing in commodities entail significant risk and is not appropriate for all investors. Commodities investing entail significant risk as commodity prices can be extremely volatile due to wide range of factors. A few such factors include overall market movements, real or perceived inflationary trends, commodity index volatility, international, economic and political changes, change in interest and currency exchange rates.

Investing in foreign domiciled securities may involve risk of capital loss from unfavorable fluctuation in currency values, withholding taxes, from differences in generally accepted accounting principles or from economic or political instability in other nations.

Investments in emerging or developing markets may be more volatile and less liquid than investing in developed markets and may involve exposure to economic structures that are generally less diverse and mature and to political systems which have less stability than those of more developed countries.

Investing in REITs involves certain distinct risks in addition to those risks associated with investing in the real estate industry in general. Equity REITs may be affected by changes in the value of the underlying property owned by the REITs, while mortgage REITs may be affected by the quality of credit extended. REITs are subject to heavy cash flow dependency, default by borrowers and self-liquidation. REITs, especially mortgage REITs, are also subject to interest rate risk (i.e., as interest rates rise, the value of the REIT may decline).

There are risks associated with investing in Real Assets and the Real Assets sector, including real estate, precious metals and natural resources. Investments can be significantly affected by events relating to these industries.

For EMEA Investors: The information contained in this communication is not a research recommendation or 'investment research' and is classified as a 'Marketing Communication' in accordance with the Markets in Financial Instruments Directive (2014/65/EU) or applicable Swiss regulation. This means that this marketing communication (a) has not been prepared in accordance with legal requirements designed to promote the independence of investment research (b) is not subject to any prohibition on dealing ahead of the dissemination of investment research.

If distributed only to Professional Clients:
This communication is directed at professional clients (this includes eligible counterparties as defined by the appropriate EU regulator or Swiss Regulator) who are deemed both knowledgeable and experienced in matters relating to investments. The products and services to which this communication relates are only available to such persons and persons of any other description (including retail clients) should not rely on this communication.

Investing involves risk including the risk of loss of principal.

Past performance is not a guarantee of future results.

The trademarks and service marks referenced herein are the property of their respective owners. Third party data providers make no warranties or representations of any kind relating to the accuracy, completeness or timeliness of the data and have no liability for damages of any kind relating to the use of such data.

ID1831550-4241073.3.2.GBL.INST 1023
Exp. Date: 30/10/2024