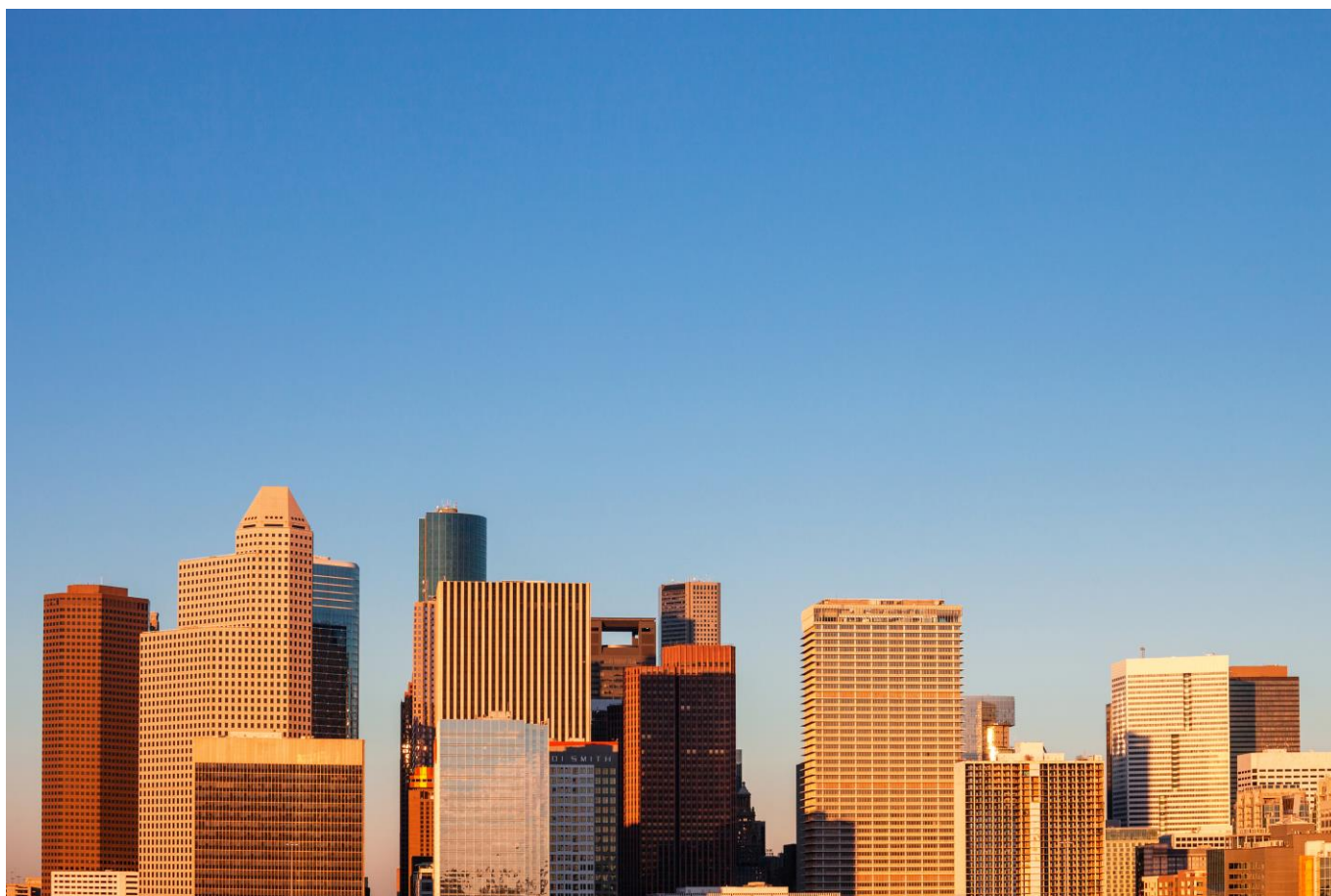


CLO Market Update – May 2024

CLO... ...Cloud spotting



Dear Investors,

Was it a lack of consensus within the ECB's governing council? A lack of conviction in Europe's inflation trajectory? The recent economic developments in the US? Although the ECB delivered a 25bps cut on the three key interest rates, President Lagarde's refused to provide forward guidance on the ECB trajectory and certainly did not lay out a plan for the implementation of a gradual easing process. Instead, she explained that

macroeconomic projections see higher domestic inflation (core), above target for 2024 and 2025 then back to 2.0% in 2026. The duality in the ECB's rhetoric was somehow surprising, especially since the current environment is relatively similar in Europe to the situation back in March, when the Government Council approach was (or was interpreted as) slightly different: headline and core inflation were already above forecasts. A similar duality in communication stemmed from the Fed with a hawkish tonality contrasting with

the stronger than expected CPI data release on June 12th. Sprinkle this with some (more) geo-political jitters from a heavy 2024 calendar year in terms of political elections, a good recipe for increased volatility...

We thought it would be interesting to take a step back this month and address some of the topical talking points we came across lately when discussing CLOs with clients. CLOs have gained a lot of momentum in the last couple of years due to their superior returns and their solid fundamentals, we will deep dive here in the “bone marrow” of CLOs, i.e Leveraged Loans, Relative Value, the impact of lower benchmark rates and more.

CLOs in the context of Leverage Loans and broader Credit markets

A liquid market

The global corporate Leverage Loan market is a large market with approximately EUR 425bn of outstanding European assets and USD 1.5tn of outstanding US assets. In terms of primary activity, the issuance pace has been really strong in both jurisdictions so far in 2024. After an exceptional issuance in Q1, EUR 41bn of Loans were printed YTD in Europe (as of end of April) vs. EUR 16bn for the same period in 2023. In the US, institutional loan volumes from Primary markets stood at USD 180bn as of end of April, which compared very favorably vs. USD 73bn issued for the same period in 2023. The sheer size of both markets ensures a strong liquidity in the

Secondary markets. Loan instruments trade on a daily basis and all major banks have dedicated Loan trading & market making desks.

Leverage Loans provide financing to large companies only

The companies that are found in CLO collateral pools are large companies with a minimum EBITDA of USD/EUR 100mm. Due to their size and often their place as market leader in their respective segments, companies are usually well known by the public. Patagonia, Verisure, Europcar, Picard, Grand frais or Ineos are mere example of the large array of companies that use the Leveraged Loan market as a source of funding. It is interesting to note here also the crossovers between the Leveraged Loan market and the High Yield markets. We see around 20% of the High Yield issuers using the Leverage Loan market as well.

No direct Loan exposure means low idiosyncratic risk

Comparing CLOs to Private Credit/Private Financing, the fundamental difference operates on the company’s classification and size, as CLOs have exposure to large issuers with EBITDA over EUR/USD 100mm while Private Financing transactions focus on mid-market issuers with EBITDA usually between EUR/USD 10 to 100mm. The second fundamental difference is the diversification CLOs provide with exposure to c. 300 obligors vs. only 100 obligors in Private Credit. There are also much lower exposures to low-rated issuers, making CLOs diversified both in terms of exposure and risk.

| Collateral Comparison | Broadly Syndicated | Private Credit |
|------------------------------|--------------------|-----------------------|
| EBITDA | >100MM | Traditionally <100MM* |
| Average CLO Portfolio Spread | 364 | 570 |
| # of Obligators/CLO | 250-350 | 75-125 |
| Average CLO Diversity Score | 78.7 | 38.8 |
| Average CLO WARF | 2880 | 3854 |
| BB % | 21.0% | 0.3% |
| B % | 69.7% | 81.9% |
| CCC and below % | 7.8% | 17.7% |
| Top 3 Industries % | 33.6% | 39.6% |
| Average Portfolio WAL | 4.2 Years | 3.4 Years |
| # of Lenders per Loan | >100 | 1-10 |

Source: MS Research, PitchBook LCD, Intex.

CLO vs. Corporate and High Yield Markets

Higher Spreads, Higher Ratings

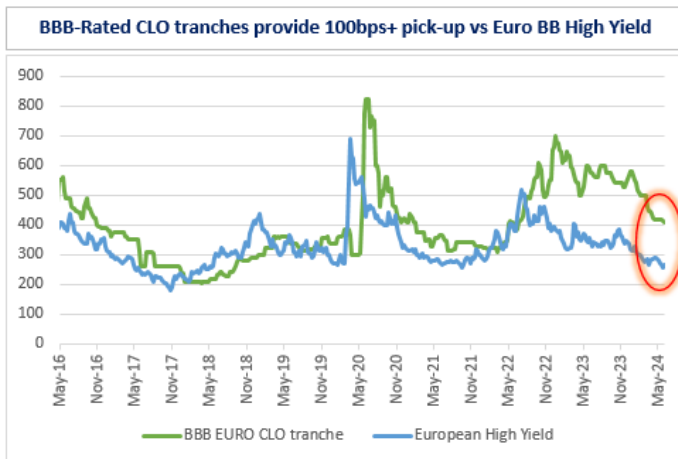
In terms of absolute spreads, CLOs offer a high spread pick-up compared to traditional Credit assets. Looking at BBBs in the graph below – BBBs are interesting as they sit at the middle of the CLO capital structure and are rated Investment Grade – the basis between CLOs and HY is historically elevated:



Source: AXA IM, JPM research, Bloomberg

CLOs overperform Loans and High Yield in terms of total returns

The graph below is astonishing: over the last 2 years, AAA CLO returns are neck and neck with High Yield and Loan returns, which are rated Non-Investment Grade. This is primarily due to the floating rate nature of CLO tranches, as well as the low default environment that has been experienced both in the US and in Europe. **The trend for 2024 is no different, US High Yield returned +1.63% year-to-date (as of May-end) while US High Grade was negative -0.60%. AAA US CLOs however, returned +3.22% YTD (JCLOOAAAP in Bloomberg), BBBs +5.7% and BBs over +10%.**

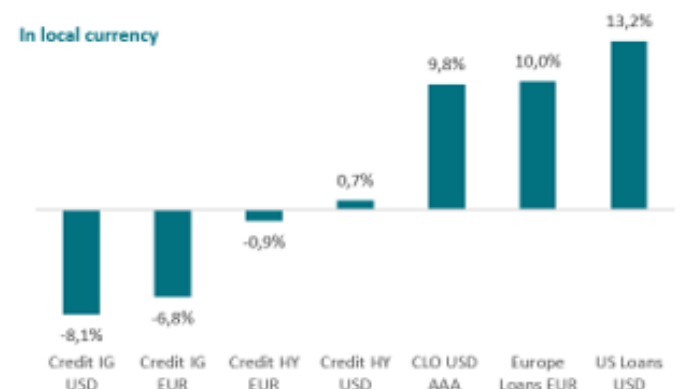


Source: AXA IM, JPM research, Bloomberg

Favourable Relative Value

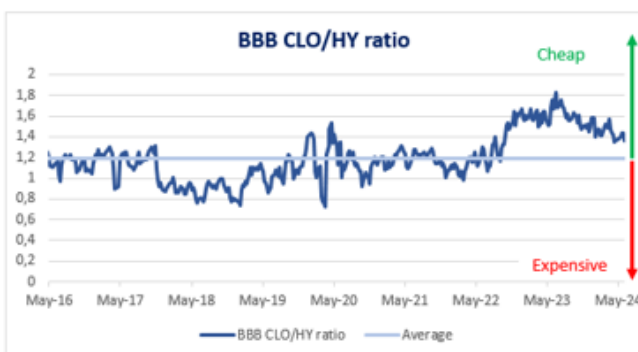
CLOs have lagged in terms of spreads movement and are currently trading cheap to High Yield. We believe that this underperformance is due first to the leveraged nature of CLOs which make them more volatile when global markets deteriorate, and second to the floating-rate nature of CLO collaterals (Lev Loans) which put instant financial pressure on issuers as soon as interest rates creep up, consequently increasing their default probability.

Performance of selected asset classes Dec. 2021 to Dec. 2023



Lower rates are a tailwind for CLOs

SOFR is stabilizing slightly above 5% as the Fed pause seems to be in effect for the near term, and short-term rates are at their highest level since prior to the 2008-2009 financial crisis. SOFR floors have no value now as rates have climbed past floor values. Treasury volatility remains high with market focused on Central Bank



paths for interest rates, long term deficit financing and demand for treasuries. Rate cuts have a mixed effect on the loan asset class, reducing yields but also reducing pressure on corporate cash flows.

In Europe, rates are pricing in two additional 25bp cuts in 2024. This should help see increased inflows into higher-beta pockets of the fixed income world as investors will be pushed to hunt for yield. We believe this to be supportive for CLOs since they offer superior rating-adjusted returns.

In addition, given that 90% of CLO collaterals are floating-rate issuers, those have felt the burden of higher interest rates in the form of higher interest expenses and compressed interest coverage ratios, while fixed-rate issuers were relatively insulated from this until they had to refinance their debt. A reduction of base rates will invert the trend and release some of the pressure on companies using the Leveraged Loan markets. ***As a result, we see both Loans and CLOs outperform fixed rate bonds in a lower funding cost environment where systemic default risks reduce.***

Loan default rates: lower defaults than initially expected

Default rates have remained low in both US and Europe, currently standing at 1.48% in Europe and 1.08% in the US as of May 2024. The consensus is to see default rates moderately increase towards 3-4% by end of 2024 as corporates see some topline pressure due to the mild recession and increased interest payments as base rates have increased over the last couple of years. However, we do not expect an uncontrolled spike in defaults since:

- i. Corporates have access to multiple channels of financings, as opposed to the 2008-2009 era. Higher quality issuers of the leveraged loan market have been able to tap into Private Credit financing to address their financing needs. Private Credit lenders were active underwriting overhang deals that sat on banks' balance sheets over the course of 2022, they also increased dramatically their market share in a sub-segment of broadly syndicated loans, namely 'B-' and 'CCC' rated issuers

- ii. Loan documentation is covenant lite and provide more options to corporates and sponsors before defaulting. The leverage loan universe is now fully covenant-lite outside of bank Revolving Credit Facility lines, as a result monetary defaults materialize when companies experience liquidity issues and run out of cash. Until then, they benefit from a more flexible legal environment in terms of documentation to avoid default.
- iii. The maturity wall has been pushed back to 2028. A large part of the double-digit default rate during the GFC was due to companies hitting into their maturity wall. We see positively that Loans maturities have been pushed back either through loan-for-bonds takeout or through amend-and-extend activity. As a reminder, amend-and-extend processes are market activities through which the existing lender base agrees for extension of the maturity of a corporate loan in exchange of additional spread concession and without any change to the existing documentation. Less than 8% of the US Loan market and less than 4% of the European Loan market are to mature before 2026, levels that cause no concerns to the market.

Considering the above, we believe that default rates will remain in the 3-4% context - ***which is in line with long term loans default average.***

CLO Market - default pattern

CLO tranches have shown consistent superior Credit performance compared to Corporate & High Yield bonds. CLO defaults rates read historically much lower and showed also less volatility.

Even the pre-GFC ("1.0") CLO market managed to weather the great financial crisis relatively unscathed as only 4 Investment Grade tranches defaulted, all rated BBB. Over that period, note that ***only 22 tranches out of a universe of nearly 1,500 tranches defaulted.*** This represents a 1.49% default rate as a percentage of all 1.0 CLOs (see graph below, source from S&P in 2023, Euro market)!

European CLO 1.0 And 2.0 Default Summary By Original Rating

| | CLO 1.0 | | | CLO 2.0 | | |
|--------------|--------------------|-----------|--------------------|--------------------|-------------|--------------------|
| | Original rating(i) | Defaults | Currently rated(i) | Original rating(i) | Defaults(i) | Currently rated(i) |
| AAA (sf) | 481 | 0 | 0 | 769 | 0 | 455 |
| AA (sf) | 227 | 0 | 0 | 828 | 0 | 578 |
| A (sf) | 249 | 0 | 0 | 536 | 0 | 362 |
| BBB (sf) | 296 | 4 | 0 | 507 | 0 | 344 |
| BB (sf) | 211 | 17 | 0 | 470 | 0 | 334 |
| B (sf) | 11 | 1 | 0 | 416 | 0 | 317 |
| Total | 1,475 | 22 | 0 | 3,526 | 0 | 2,390 |

The post GFC CLO market (“2.0”) is displaying even stronger statistics with 0 tranches defaulting in (out of c. 2,400 tranches). The market did not experience a major and sustained shock such as the GFC although episodes of volatility tested CLO structures (European debt crisis, oil & gas, Covid-19, Ukraine war...) which reacted much more favourably compared to its neighbour markets (see graph below). We attribute this performance to the stronger origination and structuring standards of securitized assets in general and CLOs in particular providing investors across the capital structure with enhanced levels of cushion, as well as stronger regulation on the CLO Managers side (“alignment of interests”) and more competition placing performance as a necessity when developing a sustainable CLO issuance platform.

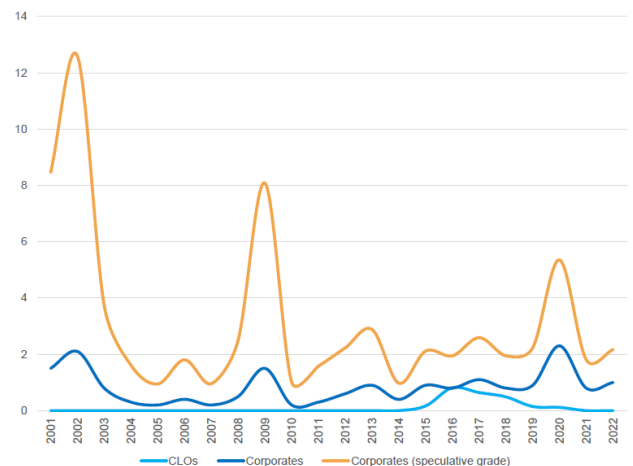
Our view on CLO structures

CLO structures have been heavily impacted by regulation and public opinion in the wake of the GFC. The product had to evolve to attract demand and meet rating agencies higher standards. Structures typically are less leveraged, have shorter reinvestment periods and invest in more conservative portfolios.

Typically, pre-GFC CLOs had lower tranche support (AAAs subordination was around 23% then, it is c. 38M now) and Reinvestment Periods up to 7 years (vs. 5 years nowadays). More striking, pre-GFC CLOs could carry a lot more risk as well with up to 20% of

non-first lien collateral, 20% CCC buckets and 20% bonds. Those have been halved in post-GFC structures to reduce the risk carried by debt investors.

Annual European Default Rates (%): CLOs versus corporates (S&P rated only)



Source: S&P, 2023

Default probability and tranche robustness

CLO tranches benefit from extensive credit support from the tranche mechanism at play in CLO structures. For instance, the typical BBB tranche will benefit from 14% credit enhancement at deal inception. This gives those bonds a strong head start as they embed a lot of cushion and can absorb substantial spikes in defaults.

The second level of protection comes from the structuring of CLOs as they feature an early amortisation mechanism that is triggered if the performance of a CLO is below a certain threshold, and essentially diverts interest payments from the Equity tranche towards the debt tranches.

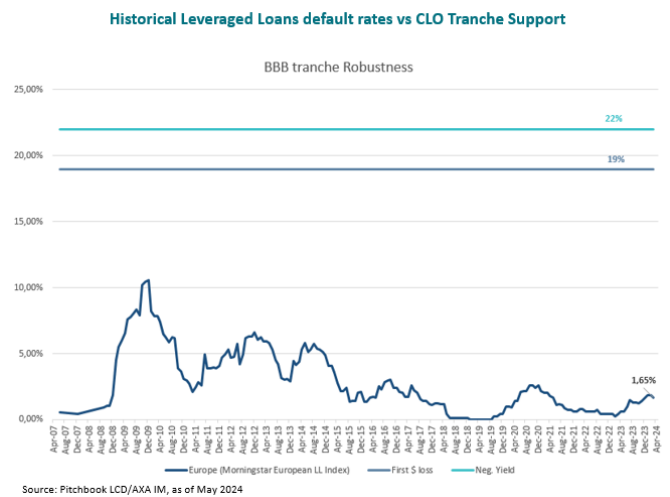
In the event collateral portfolios were to suffer more than anticipated, CLO debt tranches benefit from the protection of certain triggers, such as Over Collateralisation triggers (OC triggers). If an OC trigger is breached, the cashflows that should have been paid to the equity tranche will be diverted back to the debt tranches to repay sequentially investors from top to bottom until the OC test is cured. Principal from loans prepayments – in the event the transaction has passed its reinvestment period – will also be used to sequentially amortise the tranches. Credit Enhancement of all tranches will improve as higher rated tranches pay down. Bonds will also gain in terms of liquidity as the MVOC and the call probability increase.

We have stressed CLOs by running higher default rates every year until the maturity of each instrument with a recovery rate of 60%. The results show that on average:

- A-rated tranches must sustain an annual default rate of 32% **each year until maturity** for noteholders loose EUR 1.00

- BBB-rated tranches must sustain an annual default rate of 19% **each year until maturity** for noteholders loose EUR 1.00
- BB-rated tranches must sustain an annual default rate of 11% **each year until maturity** for noteholders loose EUR 1.00

Such high levels of defaults for a prolonged period of time have never been experienced in the last 25 years, that scenario would mean that global economies entered a severe recession and credit crunch. We see no evidence that would indicate that this is the direction markets are headed to right now.



Best regards,

Risk factors

The list of risk factors as shown below is not exhaustive. Each prospective investor should carefully read the portfolio’s final prospectus or portfolio management agreement (as applicable) in its entirety, including any of its amendments or supplements.

| | |
|---|--|
| Liquidity Risk | ▶ Low liquidity offered to investors during the life of the strategy. |
| CLO structure risk (leverage, maturity, subordination/rating migration) | <ul style="list-style-type: none"> ▶ CLO are designed as leveraged exposure to a portfolio of loans. Depending on the rating of the CLO debt tranche, level of leverage varies and thinness of the tranche varies. Reaching a certain level of default and loss post recovery in the underlying portfolio could trigger a downward rating migration and even losses at tranche level. ▶ The subordination of any class of CLO securities will affect their right to payment in relation to the more senior securities. Interruptions in payments to subordinated classes may occur. Following acceleration of CLO securities, payments of interest proceeds and principal proceeds from the CLO issuer’s assets will generally be applied on a strict seniority basis. ▶ The investment in CLO have an expected maturity that may be shorter or longer depending on market conditions and portfolio management. Market conditions may affect CLO tranche maturity and spread when for example there is a refinancing. |
| Underlying loan exposure risks | ▶ CLO are exposed to performance of leveraged loans with inherent risks such as among other things default, recovery, prepayment, liquidity and interest rate risk. |
| Market Risk | ▶ The investments contemplated herein may at any time be subject to significant price movements, which will impact negatively the valuation of the Portfolio and may lead to the loss in case of redemption. |
| Performance Risk | ▶ The investment strategy’s performance described herein may be lower than anticipated due notably but not limited to market drawdown, loss in underlying portfolio and forex impact. |

Source: AXA IM

Disclaimer:

Not for Retail distribution: This document is intended exclusively for Professional, Institutional, Qualified or Wholesale Clients / Investors only, as defined by applicable local laws and regulation. Circulation must be restricted accordingly.

This document is for informational purposes only and does not constitute investment research or financial analysis relating to transactions in financial instruments as per MIF Directive (2014/65/EU), nor does it constitute on the part of AXA Investment Managers or its affiliated companies an offer to buy or sell any investments, products or services, and should not be considered as solicitation or investment, legal or tax advice, a recommendation for an investment strategy or a personalized recommendation to buy or sell securities.

Due to its simplification, this document is partial and opinions, estimates and forecasts herein are subjective and subject to change without notice. There are no guarantees forecasts made will come to pass. Data, figures, declarations, analysis, predictions, and other information in this document is provided based on our state of knowledge at the time of creation of this document. Whilst every care is taken, no representation or warranty (including liability towards third parties), express or implied, is made as to the accuracy, reliability or completeness of the information contained herein. Reliance upon information in this material is at the sole discretion of the recipient. This material does not contain enough information to support an investment decision.

Before making an investment, investors should read the relevant Prospectus and the Key Investor Information Document / scheme documents, which provide full product details including investment charges and risks. The information contained herein is not a substitute for those documents or for professional external advice.

The products or strategies discussed in this document may not be registered nor available in your jurisdiction. In particular units may not be offered, sold or delivered to U.S. Persons within the meaning of Regulation S of the U.S. Securities Act of 1933. The tax treatment relating to the holding, acquisition or disposal of shares or units in the fund depends on each investor's tax status or treatment and may be subject to change. Any potential investor is strongly encouraged to seek advice from its own tax advisors.

Past performance is not a guide to current or future performance, and any performance or return data displayed does not take into account commissions and costs incurred when issuing or redeeming units. References to league tables and awards are not an indicator of future performance or places in league tables or awards and should not be construed as an endorsement of any AXA IM company or their products or services. Please refer to the websites of the sponsors/issuers for information regarding the criteria on which the awards/ratings are based. The value of investments, and the income from them, can fall as well as rise and investors may not get back the amount originally invested. Exchange-rate fluctuations may also affect the value of their investment. Due to this and the initial charge that is usually made, an investment is not usually suitable as a short-term holding.

Information concerning portfolio holdings and sector allocation is subject to change and, unless otherwise noted herein, is representative of the target portfolio for the investment strategy described herein and does not reflect an actual account. The performance information shown herein reflects the performance of a composite of accounts that does not necessarily reflect the performance that any particular account investing in the same or similar securities may have had during the period. Actual portfolios may differ because of client-imposed investment restrictions, the timing of client investments and market, economic and individual company considerations. The holdings shown herein should not be considered a recommendation or solicitation to buy or sell any particular security, do not represent all of the securities purchased, sold or recommended for any particular advisory client, and in the aggregate may represent only a small percentage of an account's portfolio holdings.

Representative Accounts have been selected based on objective, non-performance-based criteria, including, but not limited to the size and the overall duration of the management of the account, the type of investment strategies and the asset selection procedures in place. Therefore, the results portrayed relate only to such accounts and are not indicative of the future performance of such accounts or other accounts, products and/or services described herein. In addition, these results may be similar to the applicable GIPS composite results, but they are not identical and are not being presented as such. Account performance will vary based upon the inception date of the account, restrictions on the account, along with other factors, and may not equal the performance of the representative accounts presented herein. The performance results for representative accounts are gross of all fees and do reflect the reinvestment of dividends or other earnings.

Issued by AXA INVESTMENT MANAGERS PARIS, a company incorporated under the laws of France, having its registered office located at Tour Majunga, 6 place de la Pyramide, 92800 Puteaux, registered with the Nanterre Trade and Companies Register under number 353 534 506, and a Portfolio Management Company, holder of AMF approval no. GP 92-08, issued on 7 April 1992. In other jurisdictions, this document is issued by AXA Investment Managers SA's affiliates in those countries.