



LOOMIS | SAYLES

DISCIPLINED ALPHA: BUILDING CONSISTENT ALPHA, BOND BY BOND



AUTHORS

LYNNE ROYER

VP, Co-Head of Disciplined Alpha
Fixed Income

SETH TIMEN

VP, Co-Head of Disciplined Alpha
Fixed Income

WILLIAM STEVENS

Former Co-Head of Disciplined
Alpha Fixed Income (Retired 2017)

The spreads between bonds change every day. Sometimes it's for obvious fundamental reasons, like global or company-specific news, earnings announcements, or changes in capital structure. Other times, spreads move due to supply and demand technicals, human behavior, or flawed analysis—factors that have nothing to do with the fundamental value of the underlying securities.



MANAGER
INSIGHT

FEBRUARY 2021



KEY TAKEAWAYS

- The Disciplined Alpha Fixed Income team believes they can produce alpha consistently by understanding where bonds should trade at any given time and making good judgments within a structured process every day.
- Buying bonds with attractive value in our universe starts with fundamental research. Then, the contribution of market forces is added in with a quantification and pricing of risks. Those risks are measured by PI, a dynamic risk framework created to support position sizing and sector positioning. PI is our language for talking about risk.
- Each trade is executed within a highly disciplined investment process. We believe this process can result in more favorable performance for clients.

No matter the cause, spread changes present perpetual opportunity for investors to buy bonds that offer a little more yield than they should, or to sell bonds at a lower yield than other market participants should demand. It is possible to imagine markets with better information, more sophisticated models and better decision-making, but it is hard to envision a world of perfect valuations.

For the Loomis Sayles Disciplined Alpha team, every spread change represents a potential opportunity to improve our portfolios. We believe we can produce alpha consistently by understanding where bonds should trade at any given time and making good judgments within a structured process every day.

Our investment philosophy has two central elements. The first is an intense focus on relative value investing. We combine proprietary fundamental and quantitative research with trading intelligence to generate real-time relative value insights across the investment grade fixed income universe. Integrated risk management is the second part of our philosophy. Thoroughly understanding and properly measuring risk is essential to relative value investing. We analyze and quantify risk at the individual bond level, a method intended to support superior security selection. Because this bond-by-bond risk assessment includes sector, duration and curve risk, it can provide the team with a more accurate picture of top-down risks so the bonds can be managed appropriately. Duration and curve positioning in particular are deliberately limited in order to focus the investment process on picking bonds for our portfolios.

This long-held investment philosophy is borne out in the process we use to manage the Loomis Sayles Disciplined Alpha strategies. We believe our rigorous, repeatable approach can drive alpha consistently. The following explains how and why we invest the way we do.



INVESTMENT PROCESS

The Disciplined Alpha decision-making structure and investment process have been engineered to help promote security selection, relative value decisions and risk management. As co-heads of the strategies, Lynne and Seth have ultimate authority and accountability for portfolio construction and performance. They lead a team of seasoned sector specialists and traders, each of whom specializes in specific investment grade sectors, including government, mortgage, corporate and asset-backed securities. In regular weekly discussions, the co-heads, sector specialists and traders discuss fundamentals, relative value and technical trading factors in their respective areas of expertise. At the conclusion of these meetings, the co-heads and the senior sector specialists set targets for duration, yield curve and sector risks. Each team member has the flexibility to buy and sell securities within their area of responsibility, and they allocate risks within pre-established guidelines around those targets. This process places security selection decisions in the hands of the specialists who best understand the nuances of their sectors and the analysis required to determine relative value.



**Security selection
is rooted in deep
fundamental research.
The breadth and
the depth of this
fundamental research
contribute each and
every day to our views
on fundamental
relative value.**

Security selection is rooted in deep fundamental research. The Disciplined Alpha team works closely with Loomis Sayles' extensive research resources to understand the fundamental risks and opportunities of each security that we are thinking of buying or selling, and we use this view to determine which securities have value relative to each other. Our investment process leverages the firm's proprietary research in credit, sovereign, quantitative, macroeconomics, equity, and mortgage and structured finance. Each day, the Disciplined Alpha analysts, traders and portfolio managers talk to their counterparts to find out, for instance, how the recent meeting with company management went, or what insights the property tour of downtown Los Angeles brought out. The conversations can be as local as why prepayment trends in Phoenix are diverging from those in Las Vegas, or as global as what the European Central Bank's next move might be. The breadth and the depth of this fundamental research contribute each and every day to our views on fundamental relative value.

The process doesn't end there, however. Trading intelligence completes the picture. Liquidity, regulatory differences, current buyers or sellers and behavioral biases all affect trading relationships. Trading relationships play an important role in determining profitable opportunities in the market. Our highly experienced traders bring very specific expertise and an ability to mine the type of information that drives trading relationships and contributes to returns. There is no simple formula for this. Simple formulas are quickly arbitraged away. Rather, it is talented, motivated investors working hard and making sound decisions within a structured process every day.



Because we view every spread change and news item as a potential chance to better the portfolio through either buys or sells, Loomis Sayles' Disciplined Alpha strategies typically have higher turnover than the average fixed income strategy.

RISK MANAGEMENT

The fundamental building blocks of our risk management process were designed to improve security selection. Quantifying the yield on the bond is reasonably straightforward; quantifying the risks is not. How can you determine whether a bond is a good value—that is, are you getting paid enough for the risks—if you haven't quantified the risks? To buy bonds with attractive value in our universe, we believe we must first quantify and price those risks. Because we analyze and quantify risk at the individual bond level, we are highly confident in the sum of those risks at the portfolio level and are disciplined about understanding and assuming those risks.



Sector overweight or underweight positions are determined by the team's assessment of fundamentals, relative value and market technicals in each market segment. The discipline of managing to sector risk targets keeps the team continuously focused on buying and selling opportunities.

By philosophy, we adopt the benchmark interest rate and yield curve risk as targets and will allow only slight deviations based on compelling relative value opportunities. The considerable talent and resources required to make those calls correctly are reallocated to the security selection process, where we are much more confident in our ability to generate alpha consistently.

Sector overweight or underweight positions are determined by the team's assessment of fundamentals, relative value and market technicals in each market segment. The discipline of managing to sector risk targets keeps the team continuously focused on buying and selling opportunities. Further, our discipline of maintaining the target portfolio duration ensures that virtually all buys and sells are offset by a corresponding sell or buy.

Because the majority of our resources and risk are focused on individual bonds, and because we design our portfolios to be well-diversified, tracking error—or performance deviations from the benchmark—has tended to be below average. It is very much a benchmark-driven process. In essence, we are short the benchmark and long our portfolio. Below-average tracking error is not a goal of the process, but rather has been a result of the process.



PI: OUR RISK LANGUAGE

In Life of Pi,ⁱ Yann Martel says, "Life is a story...You can choose your story."

We tell our story using PI, a dynamic risk framework we created to support position sizing and sector positioning. PI is our language for talking about risk.

PI stands for portfolio impact. A 3 PI overweight position in a bond with a beta of 1 implies that the portfolio would be expected to lose 3 basis points in total performance if the bond's spread widened by 100 basis points. The PI calculation incorporates the size of the position, its sensitivity to changes in interest rates, and its sensitivity to changes in sector spreads. For instance, a riskier credit would be expected to have a higher PI than a more conservative credit, given the same position size and interest rate risk.

Positions are sized by PI and conviction. Generally, higher-conviction positions will have higher PIs.ⁱⁱ



Each bond's performance contribution is calibrated to its contribution to portfolio risk. This feedback loop is extremely important in reinforcing the analytical process and the tenet that relative value decisions must always be risk-adjusted.

THE IMPORTANCE OF ATTRIBUTION

Different performance expectations for individual securities are also carried through to performance attribution. Each bond's performance contribution is calibrated to its contribution to portfolio risk. This feedback loop is extremely important in reinforcing the analytical process and the tenet that relative value decisions must always be risk-adjusted. Buy-side investors are often trained to look at absolute returns, or whether a bond's spread has tightened or widened relative to a benchmark like US Treasurys. Those simple metrics undermine a relative value process because they are not risk-adjusted.

Our team receives daily risk-adjusted attribution reported on a bond-by-bond basis. Each team member's contribution to portfolio performance is based on this measure. Every morning, team members look up their individual scores to see what has been successful and what has not. They also report their scores on a monthly and quarterly basis, as we feel it is essential to carefully measure and manage this process given our objective of consistently adding excess returns.



WHY MANAGE MONEY THIS WAY?

When we began managing money for clients more than two decades ago,ⁱⁱⁱ we started from three fundamental beliefs.

First, we had worked with dozens of skilled traders over the years and found that very few were capable of consistently predicting market movements. Many tried, but we found few that made money consistently. On the other hand, savvy traders could be taught to profit more consistently through market-making, and some proved even more successful by combining research with trading skill. This combination formed the basis for our investment philosophy.

The second belief was that research-based market-making was vulnerable to bad hedging. The hedges needed to neutralize significant risks in a cost-effective way often had little to do with the amount of capital involved. Instead, it had to do with the risk exposures and their volatility. The efficiency and the nature of the hedges then directly related to the value of the securities and where they should—and could—trade.

Finally, we believed it would be difficult to convince clients of this approach because it is not common practice. We needed to “take out the noise” in the return patterns to ensure the alpha we were earning showed through clearly. In an effort to prevent curve and duration drift from swamping incremental alpha gains, we made a steadfast commitment to manage within tight bands around benchmark interest rate and yield curve risk targets.

A number of years later, Ronald N. Kahn wrote a series for Barra entitled, “Seven Quantitative Insights into Active Management.”^{iv} Kahn’s piece lent quantitative support to our investment process. It also gave us a language and a framework for communicating the process to more quantitatively inclined investors.

Kahn’s seven insights were:

1. “Active management is forecasting.”

Our forecasting is primarily at the security level. Consistent with Kahn, we hold the securities that we expect to outperform, underweight those we expect to underperform, and market weight where we think the consensus is right. Though fundamentally true, the presence of transaction costs and the timing of entry and exit points means that at any given time, it is only approximately true for our portfolios.



2. "Information ratios determine value added."

According to Kahn, "...so all investors regardless of preferences, will agree that the highest information ratio can provide the most value." In the article, he provides the mathematical basis for this insight. If most investors agree with Kahn and prefer the highest-information-ratio managers, then our strategy should be attractive given its historic information ratio. For example, our Core Disciplined Alpha strategy has one of the highest information ratios of more than 200 track records in the eVestment Alliance database.^v

3. "Information ratios, as the key to active management, depend on both skill and breadth."

For skill, we have dedicated our resources to combining the insights from deep fundamental analysis with the market information content that we believe only very skilled traders can provide. For breadth, our turnover has been above-average and virtually always security-driven.

Kahn cited four implications of this insight:

"Given some skill, bet as often as possible." We find opportunities nearly every day and run a very diversified portfolio.

"Combine models, because breadth applies across models as well as assets." We do this in a literal sense by using models from many different sources, but also metaphorically by distributing decision-making on the team.

"Don't market time." Duration calls are unusual and small. They generally introduce no more tracking error than an individual security selection decision.

"Tactical asset allocation has a high skill hurdle." It has been rare for us to have a large risk-adjusted sector position. Smaller allocations are usually driven by the availability of bottom-up opportunities.

4. "To convert from raw signals to alphas requires controlling for expectations, skill and volatility."

Kahn meant this as a theoretical calculation methodology, but it is also very much true in our portfolio management. Our portfolio construction methodology is based on the combination of expectations, confidence and expected volatility.

5. "Data mining is easy."

While many of our strategies and risk processes have been back-tested, none has started from historical data alone.



6. "Implementation subtracts value."

Here we have a slightly different view. Many on our team have had experience on the sell side and understand the impact of transaction costs. We use this experience as we seek to minimize transaction costs. But there is informational benefit to trading actively in seeing trade flows, being the early call, and knowing trading levels rather than quoting levels. This intelligence is very important in understanding relative value opportunities.

7. "It's hard to distinguish skill from luck."

The mathematically inclined use information ratio to infer a probability that a track record is based on luck. Even at the low probability our Core Disciplined Alpha track record suggests, we encourage institutional investors to get to know us and to judge the durability of our investment process for themselves.

A STRATEGY FOR BENCHMARK-ORIENTED INVESTORS

This strategy isn't for all investors. The Disciplined Alpha strategies are not absolute-return oriented, nor do we attempt to predict the interest rate environment. Our clients tend to choose a benchmark for portfolio construction reasons and expect their manager to add value above that. Often they are risk averse—they see more risk with dramatic underperformance than benefit from dramatic outperformance. Or they allocate their risk to equity or alternatives strategies and demand consistency from their bond managers.

Clients also sometimes choose us because our strategy is highly differentiated. They tell us that combining distinct value-added strategies can reduce portfolio risk without hurting returns.

There are no guarantees, of course, either that the benchmark will produce positive returns or that we will outperform the benchmark. Investing involves risk, including risk of loss.

CONCLUSION

Loomis Sayles has built its reputation around the quality of its fundamental research. The Disciplined Alpha team uses that research for active relative value investing to deliver a security selection strategy that is totally benchmark-driven. We come in every day excited by the possibility of making a quarter or half a basis point, one small trade at a time. Each trade is executed in support of a highly disciplined investment philosophy. We believe this process can result in more favorable outperformance for clients.

LOOMIS SAYLES DISCIPLINED ALPHA PLATFORM

CORE DISCIPLINED ALPHA	LONG CORPORATE DISCIPLINED ALPHA
CORPORATE DISCIPLINED ALPHA	GLOBAL DISCIPLINED ALPHA



A version of this report was originally published in August 2014. We have updated the data and content as necessary and otherwise believe the information is current and relevant.

William Stevens retired from his role as Co-Head of the Loomis Sayles Disciplined Alpha Fixed Income team in June 2017. Seth Timen joined Lynne Royer as a Co-Head of the team in January 2021. They continue to manage the platform using the same investment platform that Lynne and William developed more than 20 years ago.

ABOUT RISK

Portfolios that invest in bonds can lose their value as interest rates rise and an investor can lose principal. Because the portfolio can invest a percentage of assets in debt securities that are rated below investment grade, the value of the portfolio can be adversely affected by changes in economic conditions or other circumstances. These events could reduce or eliminate the capacity of issuers of these securities to make principal and interest payments. Lower-rated debt securities have speculative characteristics because of the credit risk of their issuers and may be subject to greater price volatility than higher-rated investments. The secondary market for these securities may lack liquidity which may adversely affect the value of these securities and that of the portfolio. The portfolio may invest a percentage of assets in foreign securities, which could cause the value of the portfolio to be adversely affected by changes in currency exchange rates, political, and economic developments.

AUTHORS

LYNNE ROYER

VP, Co-Head of Disciplined Alpha Fixed Income

SETH TIMEN

VP, Co-Head of Disciplined Alpha Fixed Income

WILLIAM STEVENS

Former Co-Head of Disciplined Alpha Fixed Income (Retired 2017)

Endnotes

ⁱ Martel, Yann. *Life of Pi*. New York: Harcourt, Inc., 2001.

ⁱⁱ $PI = z/(\lambda\sigma_0)$

We believe this trade sizing rule is intuitively reasonable, but even better, it's also theoretically optimal. A security selection strategy avoids taking significant factor bets. So most of the tracking error risk is due to individual position decisions. In that setting, the Markowitz mean-variance efficient portfolio takes the form $PI \approx z$ where PI is proportional to the idiosyncratic risk of the position as described above and z is a risk-standardized measure of expected alpha in the trade, often referred to as a z-score.

ⁱⁱⁱ Lynne Royer joined Loomis Sayles 1/1/2010. William Stevens joined 12/12/2009 and retired from his role as Co-Head of the Loomis Sayles Disciplined Alpha Fixed Income team in June 2017. Seth Timen joined Loomis Sayles on 3/8/2010 and became Co-Head of the Loomis Sayles Disciplined Alpha Fixed Income team in January 2021.

^{iv} Kahn, Ronald N. "Seven Quantitative Insights into Active Management." Barra Newsletter. June 1996.

^v Data as of 12/31/2020. Source: eASE Analytics System; eVestment Alliance is the ranking agency. Universe: eA US Core Fixed Income; 227 observations. Although we believe it is reliable, we cannot guarantee the accuracy of data from a third party source.

Disclosure

Diversification does not ensure a profit or guarantee against a loss.

Past performance is no guarantee of future results.

There is no guarantee that a strategy will achieve its objective or generate positive or excess return.

This material is provided for informational purposes only and should not be construed as investment advice. Opinions or forecasts contained herein reflect the subjective judgments and assumptions of the authors only and do not necessarily reflect the views of Loomis, Sayles & Company, L.P. Investment recommendations may be inconsistent with these opinions. There is no assurance that developments will transpire as forecasted and actual results will be different. Data and analysis does not represent the actual or expected future performance of any investment product. Information, including that obtained from outside sources, is believed to be correct, but Loomis cannot guarantee its accuracy. This information is subject to change at any time without notice.

LS Loomis | Sayles is a trademark of Loomis, Sayles & Company, L.P. registered in the US Patent and Trademark Office

MALR026771

Additional Notes

This material has been provided for information purposes only to investment service providers or other Professional Clients, Qualified or Institutional Investors and, when required by local regulation, only at their written request. This material must not be used with Retail Investors.

In the E.U. (outside of the UK and France): Provided by Natixis Investment Managers S.A. or one of its branch offices listed below. Natixis Investment Managers S.A. is a Luxembourg management company that is authorized by the Commission de Surveillance du Secteur Financier and is incorporated under Luxembourg laws and registered under n. B 115843. Registered office of Natixis Investment Managers S.A.: 2, rue Jean Monnet, L-2180 Luxembourg, Grand Duchy of Luxembourg. **Italy:** Natixis Investment Managers S.A., Succursale Italiana (Bank of Italy Register of Italian Asset Management Companies no 23458.3). Registered office: Via San Clemente 1, 20122 Milan, Italy. **Germany:** Natixis Investment Managers S.A., Zweigniederlassung Deutschland (Registration number: HRB 88541). Registered office: Senckenberganlage 21, 60325 Frankfurt am Main. **Netherlands:** Natixis Investment Managers, Nederlands (Registration number 50774670). Registered office: Stadsplateau 7, 3521AZ Utrecht, the Netherlands. **Sweden:** Natixis Investment Managers, Nordics Filial (Registration number 516405-9601 - Swedish Companies Registration Office). Registered office: Kungsgatan 48 5tr, Stockholm 111 35, Sweden. **Spain:** Natixis Investment Managers, Sucursal en España. Serrano nº90, 6th Floor, 28006, Madrid, Spain. **Belgium:** Natixis Investment Managers S.A., Belgian Branch, Gare Maritime, Rue Picard 7, Bte 100, 1000 Bruxelles, Belgium.

In France: Provided by Natixis Investment Managers International – a portfolio management company authorized by the Autorité des Marchés Financiers (French Financial Markets Authority - AMF) under no. GP 90-009, and a public limited company (société anonyme) registered in the Paris Trade and Companies Register under no. 329 450 738. Registered office: 43 avenue Pierre Mendès France, 75013 Paris.

In Switzerland: Provided for information purposes only by Natixis Investment Managers, Switzerland Sàrl, Rue du Vieux Collège 10, 1204 Geneva, Switzerland or its representative office in Zurich, Schweizergasse 6, 8001 Zürich.

In the British Isles: Provided by Natixis Investment Managers UK Limited which is authorised and regulated by the UK Financial Conduct Authority (register no. 190258) - registered office: Natixis Investment Managers UK Limited, One Carter Lane, London, EC4V 5ER. When permitted, the distribution of this material is intended to be made to persons as described as follows: **in the United Kingdom:** this material is intended to be communicated to and/or directed at investment professionals and professional investors only; **in Ireland:** this material is intended to be communicated to and/or directed at professional investors only; **in Guernsey:** this material is intended to be communicated to and/or directed at only financial services providers which hold a license from the Guernsey Financial Services Commission; **in Jersey:** this material is intended to be communicated to and/or directed at professional investors only; **in the Isle of Man:** this material is intended to be communicated to and/or directed at only financial services providers which hold a license from the Isle of Man Financial Services Authority or insurers authorised under section 8 of the Insurance Act 2008.

In the DIFC: Provided in and from the DIFC financial district by Natixis Investment Managers Middle East (DIFC Branch) which is regulated by the DFSA. Related financial products or services are only available to persons who have sufficient financial experience and understanding to participate in financial markets within the DIFC, and qualify as Professional Clients or Market Counterparties as defined by the DFSA. No other Person should act upon this material. Registered office: Unit L10-02, Level 10 ,ICD Brookfield Place, DIFC, PO Box 506752, Dubai, United Arab Emirates

In Japan: Provided by Natixis Investment Managers Japan Co., Ltd. Registration No.: Director-General of the Kanto Local Financial Bureau (kinsho) No.425. Content of Business: The Company conducts investment management business, investment advisory and agency business and Type II Financial Instruments Business as a Financial Instruments Business Operator.

In Taiwan: Provided by Natixis Investment Managers Securities Investment Consulting (Taipei) Co., Ltd., a Securities Investment Consulting Enterprise regulated by the Financial Supervisory Commission of the R.O.C. Registered address: 34F., No. 68, Sec. 5, Zhongxiao East Road, Xinyi Dist., Taipei City 11065, Taiwan (R.O.C.), license number 2020 FSC SICE No. 025, Tel. +886 2 8789 2788.

In Singapore: Provided by Natixis Investment Managers Singapore Limited (company registration no. 199801044D) to distributors and institutional investors for informational purposes only.

In Hong Kong: Provided by Natixis Investment Managers Hong Kong Limited to institutional/corporate professional investors only.

In Australia: Provided by Natixis Investment Managers Australia Pty Limited (ABN 60 088 786 289) (AFSL No. 246830) and is intended for the general information of financial advisers and wholesale clients only .

In New Zealand: This document is intended for the general information of New Zealand wholesale investors only and does not constitute financial advice. This is not a regulated offer for the purposes of the Financial Markets Conduct Act 2013 (FMCA) and is only available to New Zealand investors who have certified that they meet the requirements in the FMCA for wholesale investors. Natixis Investment Managers Australia Pty Limited is not a registered financial service provider in New Zealand.

In Latin America: Provided by Natixis Investment Managers S.A.

In Uruguay: Provided by Natixis Investment Managers Uruguay S.A., a duly registered investment advisor, authorised and supervised by the Central Bank of Uruguay. Office: San Lucas 1491, Montevideo, Uruguay, CP 11500. The sale or offer of any units of a fund qualifies as a private placement pursuant to section 2 of Uruguayan law 18,627.

In Colombia: Provided by Natixis Investment Managers S.A. Oficina de Representación (Colombia) to professional clients for informational purposes only as permitted under Decree 2555 of 2010. Any products, services or investments referred to herein are rendered exclusively outside of Colombia. This material does not constitute a public offering in Colombia and is addressed to less than 100 specifically identified investors.

In Mexico Provided by Natixis IM Mexico, S. de R.L. de C.V., which is not a regulated financial entity, securities intermediary, or an investment manager in terms of the Mexican Securities Market Law (Ley del Mercado de Valores) and is not registered with the Comisión Nacional Bancaria y de Valores (CNBV) or any other Mexican authority. Any products, services or investments referred to herein that require authorization or license are rendered exclusively outside of Mexico. While shares of certain ETFs may be listed in the Sistema Internacional de Cotizaciones (SIC), such listing does not represent a public offering of securities in Mexico, and therefore the accuracy of this information has not been confirmed by the CNBV. Natixis Investment Managers is an entity organized under the laws of France and is not authorized by or registered with the CNBV or any other Mexican authority. Any reference contained herein to "Investment Managers" is made to Natixis Investment Managers and/or any of its investment management subsidiaries, which are also not authorized by or registered with the CNBV or any other Mexican authority.

The above referenced entities are business development units of Natixis Investment Managers, the holding company of a diverse line-up of specialised investment management and distribution entities worldwide. The investment management subsidiaries of Natixis Investment Managers conduct any regulated activities only in and from the jurisdictions in which they are licensed or authorized. Their services and the products they manage are not available to all investors in all jurisdictions. It is the responsibility of each investment service provider to ensure that the offering or sale of fund shares or third party investment services to its clients complies with the relevant national law.

The provision of this material and/or reference to specific securities, sectors, or markets within this material does not constitute investment advice, or a recommendation or an offer to buy or to sell any security, or an offer of any regulated financial activity. Investors should consider the investment objectives, risks and expenses of any investment carefully before investing. The analyses, opinions, and certain of the investment themes and processes referenced herein represent the views of the portfolio manager(s) as of the date indicated. These, as well as the portfolio holdings and characteristics shown, are subject to change. There can be no assurance that developments will transpire as may be forecasted in this material. The analyses and opinions expressed by external third parties are independent and does not necessarily reflect those of Natixis Investment Managers. Past performance information presented is not indicative of future performance.

Although Natixis Investment Managers believes the information provided in this material to be reliable, including that from third party sources, it does not guarantee the accuracy, adequacy, or completeness of such information. This material may not be distributed, published, or reproduced, in whole or in part.

All amounts shown are expressed in USD unless otherwise indicated.