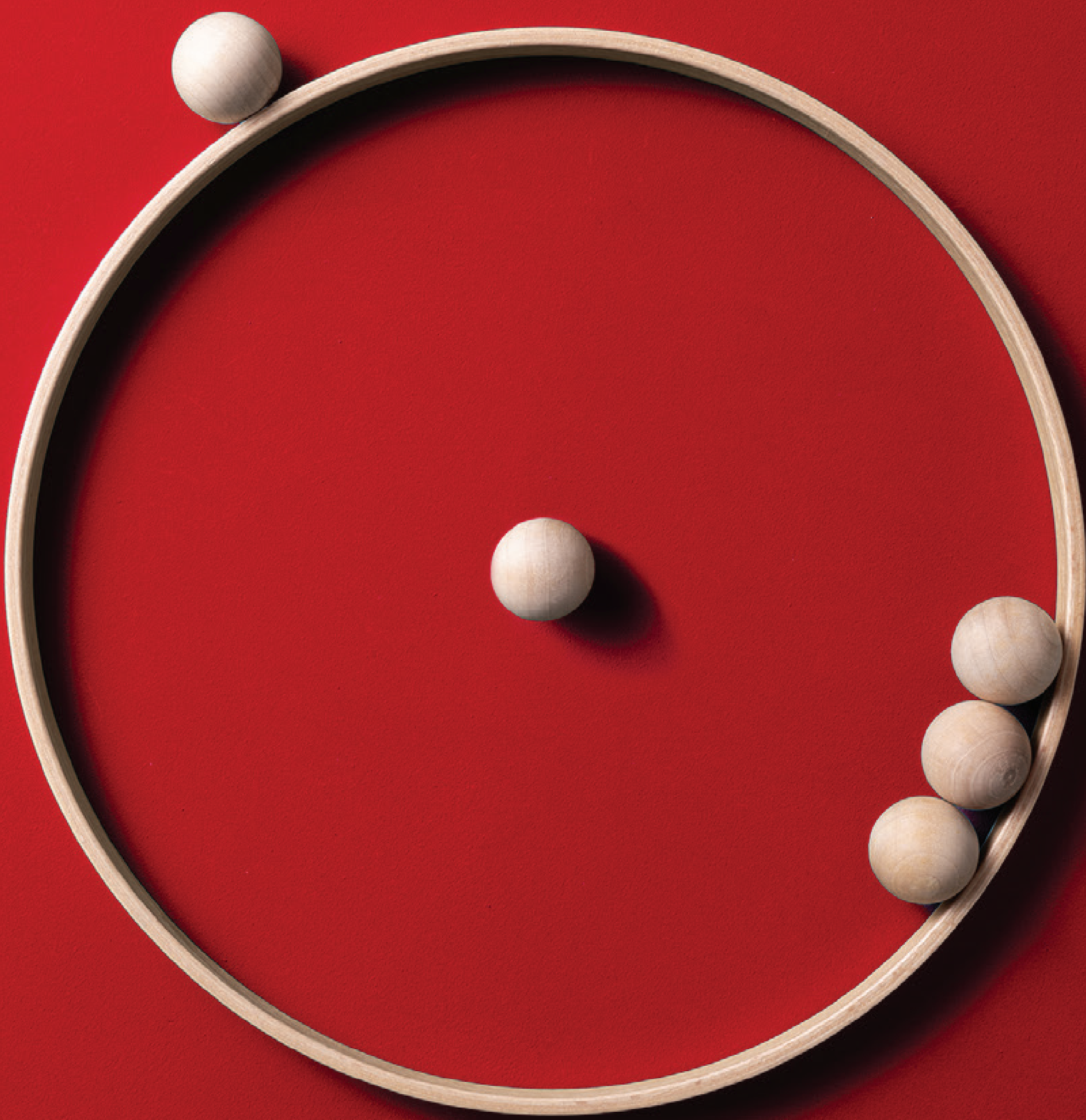
A guide to core-satellite portfolio construction

A core-satellite approach can build trust, create value and provide consistency for your clients and your business.



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Building on the fundamental importance of asset allocation

Core-satellite is a common-sense investment approach where investors or advisers maintain disciplined control of their portfolio by using low cost, broadly diversified funds and ETFs as the primary building blocks for their portfolio.

This is achieved through implementing a stable, indexed core. Once this core allocation is in place, satellites can be chosen that tilt a portfolio towards a particular sector or style, or to manage to a certain objective such as outperforming the broad market.

The core-satellite concept recognises the fundamental differences between index and active fund management and combines the best aspects of both approaches.

Market timing and security selection may provide some short-term gains at times. However, over the long term, research studies have shown that asset allocation is the primary driver of portfolio returns.

The best part of a core-satellite strategy is that it provides great investment flexibility, and there are no hard and fast rules about how you should manage your portfolio.

That said, there are some important principles to follow when building your core:

- No matter what your level of investment knowledge Vanguard's view is that your strategic asset allocation (SAA) should be developed and held for the long term.
- You can't control markets, but you can control your portfolio costs and costs can be one of the biggest detractors of long-term wealth generation.
- Markets can be volatile, to help insulate your portfolio it is important to ensure that your portfolio is well diversified, both within the individual funds invested in as well as across different asset classes, e.g. domestic and global equities and bonds.

"A portfolio's strategic asset allocation, defined as the mixture of broad equity and fixed income assets, tends to be a primary driver of its return variability over time. Stated differently, the ups and downs in portfolio returns through time, are mainly driven by the asset allocation.

What does the research tell us about SAA?

A seminal 1986 study by Brinson, Hood, and Beebower (henceforth, 'BHB'), as well as Ibbotson and Kaplan (2000), found that a portfolio's asset allocation is an important contributor to a portfolio's return variability through time. These findings were confirmed by Vanguard's own study for investors across the markets in which we operate.

Jahnke (1997) argued that the focus on explaining return variability ignored the wide dispersion of returns among balanced funds over a specific time horizon. In other words, he maintained that a portfolio could have similar variability through time, but very different terminal wealth outcomes, depending on which active and passive funds were selected. Jahnke's assertion was confirmed in research from Ibbotson and Kaplan.

So, which one of the two measures is correct?

Both BHB and Jahnke found that the SAA will explain the bulk of the day-to-day volatility.

While Jahnke et al suggested that the SAA is very important, equally important are even smaller differences in costs and other investment choices (active management or time-varying asset allocation/dynamic asset allocation), Even if small, they compound over time which can lead to significantly different wealth accumulation outcomes. In other words portfolio design (SAA, investment decisions and keeping costs low) make material differences to investment outcomes over time.

Figure 1: Role of asset allocation policy in return variation of balanced funds

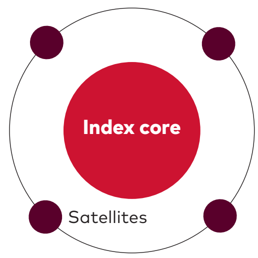
	United States	**Canada**	**United Kingdom**	**Euro Area**	**Australia**	**Japan**	**BHB** (1996)	**Ibbotson & Kaplan** (2000)
Number of balanced funds in each sample	951	967	1,007	3,529	682	661	91 U.S. pension funds	94 U.S. balanced funds
Time-series variability in returns explained by SAA policy returns	**92.1%**	**91.9%**	**82.8%**	**80.2%**	**90.0%**	**84.8%**	**93.6%**	**90.7%**
Cross-sectional variability in returns across funds explained by SAA policy returns								**40.0%**

Notes: For each fund in our sample, a calculated adjusted R2 represented the percentage of actual-return variation explained by policy-return variation. Percentages shown in the figure—92.1% for the United States, 91.9% for Canada, 82.8% for the United Kingdom, 80.2% for European Monetory Union, 90.0% for Australia, and 84.8% for Japan —represent the median observation from the distribution of percentage of return variation explained by asset allocation for balanced funds. For the period January 1990–September 2020, the sample included: for the United States, 951 balanced funds; for Canada, 967; for the United Kingdom, 1007; for Australia, 682; for Japan, 661. For European Monetary Union, the sample included 3529 balanced funds for the period January 1999-September 2020. Calculations were based on monthly net returns, and policy allocations were derived from a fund's actual performance compared with a benchmark using returns-based style analysis (as developed by William F. Sharpe) on a 36-month rolling basis. Funds were selected from Morningstar's Multi-Sector Balanced category. Only funds with at least 48 months of return history were considered in the analysis. The policy portfolio was assumed to have a U.S. expense ratio of 1.5 basis points per month (18 bps annually, or 0.18%) and a non-U.S. expense ratio of 2.0 bps per month (24 bps annually, or 0.24%).
Sources: Vanguard calculations, using data from Morningstar, Inc.

Combining the power of passive and the advantage of active

The old active-passive debate implied that portfolio construction is a binary choice. Today the main portfolio construction question is no longer about active or passive, but instead how they can best be combined to achieve investment outcomes. Core-satellite portfolio construction provides an excellent framework for combining these two investment approaches.

Figure 2: Core-satellite combines the power of passive and the advantage of active



Notes: Use active as satellites for potential to outperform or to provide tilts. Typically active funds are used as satellites for sector or style specific tilts; however index funds may also be suitable.

The passive approach

- Seeks market returns
- Lower cost
- Lower manager risk
- Long-term focus
- Higher potential tax efficiency

The active approach

- Seeks outperformance
- Higher cost
- Higher manager risk
- Shorter-term focus
- Lower potential tax efficiency

The primary aim for a passively managed (index) fund is to track market performance (beta) at a low cost to an investor. Index funds achieve this by holding a broad spread of securities within an index with an aim to track the overall performance of the index. An index fund does not require the same level of research and security analysis that active management requires and will tend to buy and hold these securities with very low levels of portfolio turnover. Lower portfolio turnover typically results in lower costs to the investor and generally more favourable tax outcomes.

Active offers the potential to outperform, typically at a higher cost given the research required to select a subset of stocks or bonds. However, the price of the potential outperformance is the risk of underperforming a benchmark. The active-passive decision is just another version of risk-return trade-offs in investing. Vanguard's Active-Passive Decision Framework® (page 9) consists of explicitly quantifying expectations for both estimated outperformance (i.e. expected alpha) and active risk (i.e. tracking-error and odds of underperforming the passive benchmark) and then weighing them against each other to tailor an individualised active-passive mix, based on the investor risk tolerance.

Core-satellite combines the benefits of passive funds—lower cost, broader diversification, tax efficiency* and lower volatility—with active investments offering the potential for outperformance.

Core-satellite recognises that long-term investment success depends on securing the right balance of assets rather than timing markets or picking winners.

Passive core

Passive (index) funds have historically delivered competitive long-term performance at a low cost. Due to their inherent properties as highly diversified, low-cost investments tracking market performance, index funds are the conventional choice for the core of a portfolio.

Active for potential outperformance

By adding active investments as a complement to a passive core you can tilt a portfolio towards a particular sector or high conviction style or manage a certain objective such as outperforming the broad market. Passive (index) funds can also be used as satellites.

Best of both worlds

Combining two investment approaches offers the opportunity for a tailored, risk-adjusted portfolio. Where confidence exists to add alpha, active investments can be added to a passive core based on a client's risk tolerance.

* Through lower portfolio turnover.

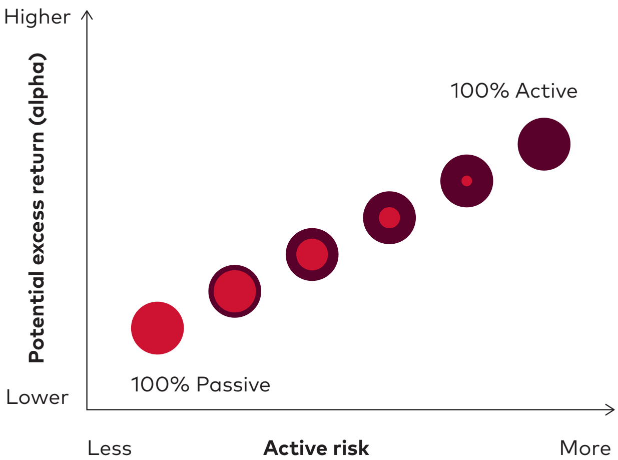
Implementing a core-satellite portfolio

The principles of core-satellite can be easily integrated into a traditional investment portfolio implementation process.

Active and passive. Getting the mix right.
The main portfolio construction question is not simply a choice between active and passive, but how to blend a range of investments which is aligned to a client's risk appetite, spending needs and increasingly their belief system.

From an investment return perspective, there is typically a trade-off to be made between the estimated outperformance (alpha potential), consistency of alpha and cost.

Figure 3: It's a risk-return trade-off



Notes: For illustrative purposes only and is based on the factors stated. It should not be taken to contain or provide an estimate of investment performance.

Any decisions around the mix of active and passive investment approaches will depend on your client's risk tolerance and desire for alpha. An investors' goals, personal situation, preferences and risk tolerance all need to be considered to build an investor's risk profile – than matched to an appropriate asset allocation across shares, property, fixed interest, cash and other assets.

Creating a risk-adjusted core-satellite portfolio

Manager selection
Vanguard's manager selection & oversight committee has its own well-developed criteria for selecting managers that emphasises a range of key qualitative criteria. This includes:

- **Firm** – Is the firm stable? What is its ownership structure? What are its account and asset trends? How does it incentivise its employees?
- **People** – What is the firm's staff tenure and experience? Does it have depth and stability of talent?
- **Philosophy** – Does it have an enduring, easily articulated philosophy shared by its investment professionals?
- **Process** – Is it stable/proven? Does it generate a portfolio consistent with the stated philosophy?
- **Portfolio** – Does its investment portfolio clearly reflect its philosophy and process? Does it have consistent characteristics over time?
- **Performance** – Does the firm have a history of competitive results versus benchmarks and peers over the long term? Has it demonstrated success in different market environments?

Investment selection

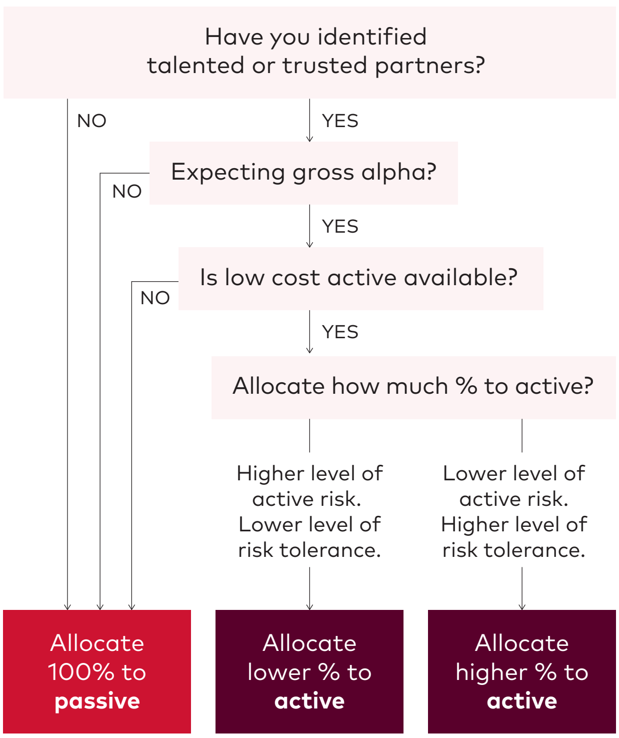
The default for the core is passive in order to keep costs low.

Decisions need to be made around the proportion of passive and active management to be applied to the satellite holdings.

This can be dependent on the level of risk compared to the market an investor is prepared to take on, and the level of turnover (which can impact on tax efficiency).

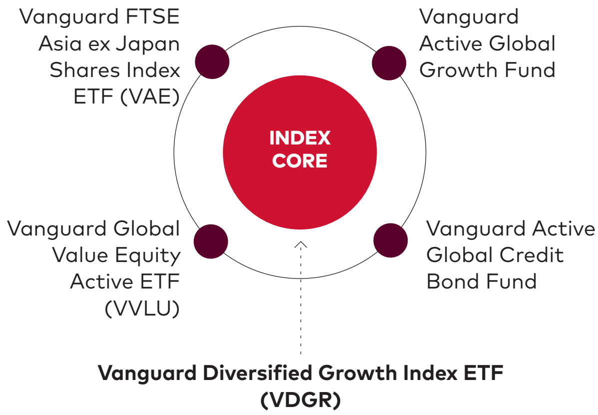
Vanguard has developed the following framework to help you and your client identify the optimal active/passive mix to help meet your client's investment objectives and risk appetite.

Figure 4: The Active-Passive Framework



Notes: Having a framework documented that is structured, defendable and repeatable can assist when working through an optimal blend of active/passive in a portfolio.

Figure 5: Example core-satellite portfolio



Vanguard Diversified Growth Index ETF is the indexed core, and satellites include both active and index funds.

When Vanguard's index and diversified funds are combined with low-cost active investments, investors gain exposure to a range of different companies, industries, and countries to ensure their investment portfolio is resilient.

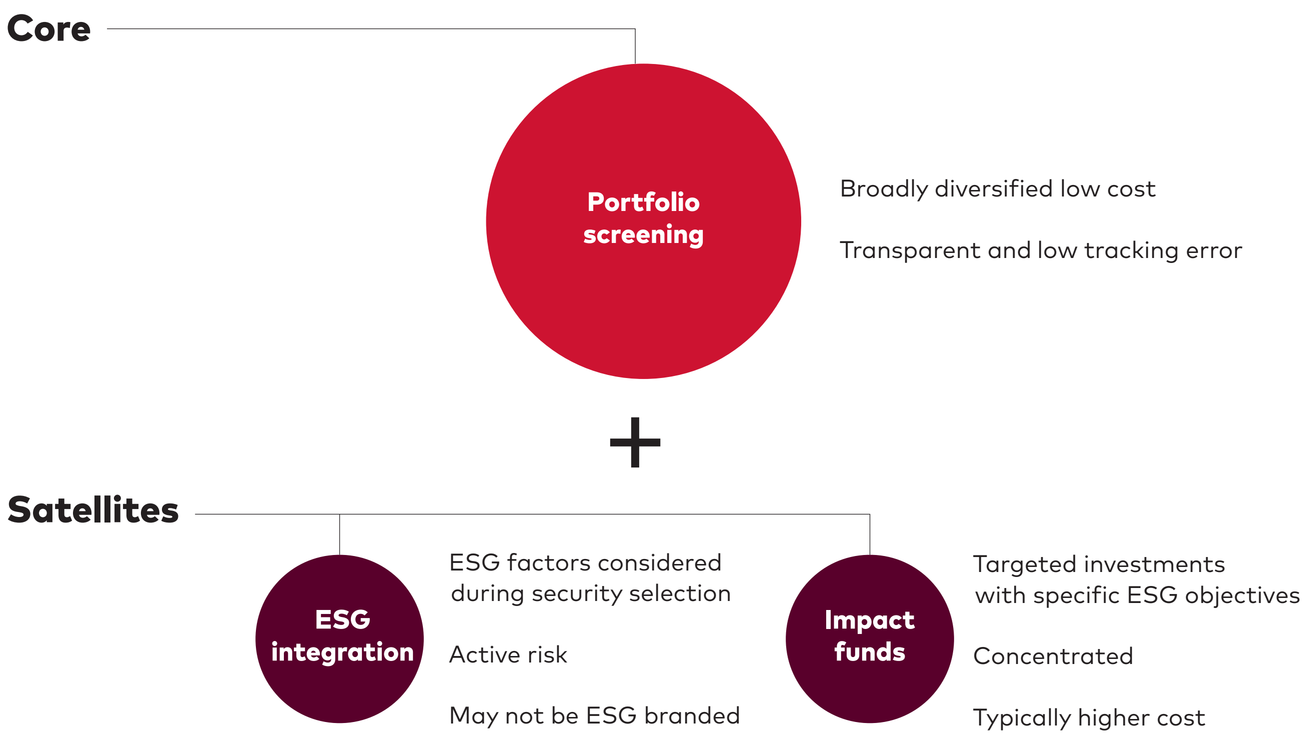
Using ESG to transform a core-satellite portfolio

The core-satellite approach can be applied to an ESG portfolio. In an ESG context, the core of the portfolio could consist of low-cost, broadly diversified, ESG-screened investments.

The satellites may utilise ESG integration or impact funds to target specific exposures or objectives.

1. Determine risk profile and SAA
2. Determine the investments and size of core vs satellite
3. Substitute core and satellite investments with ESG strategies
4. Implement manager and fund selection

Figure 6: Applying core-satellite to ESG investing



Why core-satellite?

Bringing Vanguard's investment philosophy to life
The purpose of core-satellite portfolio construction is to help investors achieve their investment goals.

Vanguard investment philosophy is articulated in four principles of investing success: define clear goals, portfolio balance, minimise costs, and maintain investment discipline.

The core-satellite portfolio construction framework presented in this paper effectively operationalises those four investing pillars into a portfolio solution covering the most common investment objectives.

Vanguard's Investment Philosophy

Goals
Choose a specific investment goal.

Without a detailed investment roadmap, it's easy to lose your way. So the first key principle for investment success is to define your client's investment goals clearly and be realistic about the ways to achieve them, including how their objectives align with their personal values.

Investment goals should be measurable and attainable, and it's important for your plan to recognise constraints, especially those that involve risk-taking.

Balance
Avoid uncompensated risks via diversification.

Both asset allocation and diversification are ingrained in the idea of balance. Because all investments involve risk, it's important to manage the balance between risk and potential reward through the choice of portfolio holdings.

A diversified portfolio's proportions of equities, bonds, and other investment types determine most of its return as well as its volatility. Attempting to escape volatility and near-term losses by minimising equity investments can expose you to other types of risk, including the risks of failing to outpace inflation or falling short of an objective.

Cost
Minimise costs.

While investment markets are unpredictable, investment costs can be controlled. Costs create an inevitable gap between what the markets return and what your clients actually earn—but keeping expenses down can help to narrow that gap.

So it's really important to seek out low-cost, high-quality products that match your client's investment goals and the asset allocation strategy.

Discipline
Ensure commitment to investment plan.

Spontaneous departures from your asset allocation strategy, either to outguess the market or to chase winners, rarely pay and can be very costly.

Discipline and perspective are the qualities that can help clients remain committed to their long-term investment programs through periods of market uncertainty.

Building trust.
Delivering value.

An all-active portfolio may be suitable for certain advised clients but ultimately requires a significant commitment of time to perform due diligence and ongoing surveillance reducing efficiency for advice practices. The focus also becomes increasingly on investment performance from the perspective of the client/adviser relationship.

Appreciating the unpredictability of investment performance and implementing a strategy that takes advantage of controllable aspects of investment returns (turnover, transaction costs and fees) will better align your objectives with those of your clients.

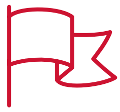
Implementing a core-satellite approach can help create a trusted, values-based relationship with clients, rather than a cyclical relationship centred predominantly on performance outcomes.

Changes to all active portfolios may include SOAs (or ROAs) when a fund or product is either downgraded, suffers performance issues or personnel departures.

Using a core-satellite approach can halve the number of managers being used in a portfolio meaning more time in front of clients and less time meeting with fund managers for updates and reviews.

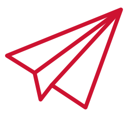
Building trust

Build trust by focusing on what you can control and influence. Implementing a core-satellite strategy that takes full advantage of the controllable aspects of investment returns helps to align your objectives with those of your client.



Client value proposition

Delivering on your promises to clients is the simplest way to earn their long-term trust. A core-satellite approach employs principles that are easily communicable to clients, while being defendable and repeatable, helping deliver on your client value proposition irrespective of market conditions.



It's more efficient

By using core-satellite as key a structured framework for portfolio construction you're creating more time in your day. It simplifies your investment philosophy, streamlines client conversations, simplifies administration processes and reduces the number of investment manager conversations.

Get more from your core with Vanguard

Our proven core ETF and managed fund products are much more than low cost. They deliver competitive performance and tight tracking, backed by best-in-class portfolio management and the benefits of scale.

All of this adds value that compounds over time. So you can look beyond fees and start seeing client outcomes.

To find out more about Vanguard's core ETFs and managed funds, speak to your Vanguard sales executive.

Harness the power of passive and the advantage of active with Vanguard

Vanguard has a range of investment solutions that can be combined during core-satellite portfolio construction to harness the power of passive and the advantage of active.

Indexing

Vanguard is established as the global leader in index management. Today, millions of investors around the world rely on us for our high-quality index investments in all major markets and asset classes.

The Vanguard difference in the field of indexing offers investors the advantage of low costs, diversification, minimal tracking error and market capitalisation.

Active

Our global scale allows us to offer your clients access to some of the world's most talented active managers, not normally available to individual investors, via our Manager Select Series. This range of fundamental active products are built to help clients achieve long-term outperformance.

Our active range includes factor funds and active ETFs, which use rules-based, systematic strategies to help clients achieve specific goals.

Diversified investments

Choose from four multi-asset, low-cost investments based your client's objective, time horizon and level of risk.

The SAA is designed and monitored by the Vanguard Investment Strategy Group using one of the most powerful financial simulators on the market. This is combined with ongoing professional and efficient rebalancing which ensures the portfolio stays aligned with the SAA and therefore the investors' selected risk and return goals.

ESG

Our suite of ESG index funds, offered under our Ethically Conscious banner, apply exclusions to a broad market index, allowing your clients to avoid exposure to activities that don't align with their values. Vanguard's Ethically Conscious line up applies screens across four broad categories:

- Non-renewable energy
- Weapons
- Vice products
- Controversies: Principles of the UN Global Compact

To find out more about our active and passive solutions contact your Vanguard Sales Executive.

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