

GUGGENHEIM

Innovative Solutions.
Enduring Values.®

The Guggenheim Investment Process

Built for Better Decision Making

The Guggenheim Investment Process

Guggenheim Investments' fixed-income investment process disaggregates the primary functions of investment management into four independent teams that work together to mitigate behavioral biases, make better decisions, and enable our best research and ideas to be expressed in actively managed portfolios.

- Built on the principles of behavioral finance
- Seeks to enhance productivity through division of labor and specialization
- Designed to be predictable, scalable, and repeatable

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When faced with a difficult question, we often answer an easier one instead, usually without noticing the substitution.

Daniel Kahneman,
Thinking, Fast and Slow

A Process Built on the Principles of Behavioral Finance

Decision making is an inherently flawed process. Oftentimes we think we are making a rational decision based on experience or intuition, but, as Nobel Prize winner Daniel Kahneman and his colleague Amos Tversky demonstrated, it is usually based on fundamentally incorrect logic caused by cognitive biases.

Based on a series of groundbreaking experiments, Kahneman and Tversky used a metaphor of two systems of behavior that drive the way humans make decisions. Type 1 behavior is automatic, rapid thinking, intuitive, and emotional. Type 2 behavior is slower, deliberative, effortful, and logical.

The human mind is capable of generating complex patterns and ideas while making Type 1 decisions, but these decisions are typically helped by shortcuts of intuitive thinking, or heuristics, that render us vulnerable to cognitive biases. These heuristics include anchoring (when a known value is considered before estimating

an unknown quantity), representativeness (when judgements are rendered based on similarities between items without considering other factors) or availability (when assessing the probability of an event is judged by the ease with which similar occurrences can be brought to mind).

The biases inherent in Type 1 behavior exist for organizations as well as individuals.

Decisions at many investment firms are left in the hands of a star investor or a small group of portfolio managers who might be more vulnerable to bias risk. A far better approach is to slow down decision-making into an orderly series of steps and, in so doing, minimize cognitive biases and remove the emotional component from the process.

We believe Type 2 thinking leads to superior long-term investment decisions. At Guggenheim, we have embraced Kahneman and Tversky's pioneering work in behavioral finance, and founded our entire investment process upon it. By disaggregating the investment process into four specialist groups, we have made it purposefully difficult to fall afoul of Type 1 decision making. Investments are made only after taking input from all four groups.

Two systems that shape human judgment and decisions:

Type 1 Behavior

- Quick
- Reflexive
- Emotional
- Easy

Type 2 Behavior

- Slow
 - Deliberate
 - Logical
 - Effortful
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The division of labor occasions, in every art, a proportionable increase of the productive powers of labor.

Adam Smith,
The Wealth of Nations

Enhancing Productivity Through Division of Labor and Specialization

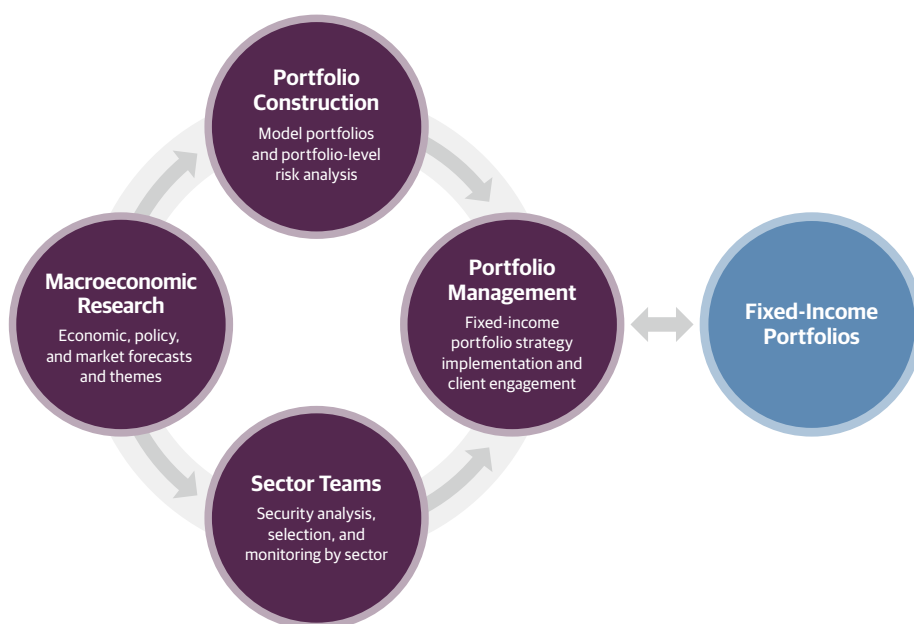
In his seminal work *The Wealth of Nations*, Adam Smith observed that the division of labor in any enterprise increases productivity and leads to greater prosperity. There are several key benefits to the division of labor. First, each group becomes a specialist with specialized knowledge. Second, specialization enables each group to be more efficient with their time as they focus on their primary task. Last, specialization results in more innovation as each group pursues its task. Smith used the example of different levels of productivity for a farm worked by generalists versus a farm that employs specialists in each task.

A major goal in the disaggregation of our process is to foster expertise in separate areas of investment decision making. After careful evaluation, we concluded that the investment process can be broken down into four key components—macroeconomic and investment research, security selection, risk management, and portfolio management—and we established separate groups to pursue each of these tasks. Not only is each team better at its specific role than if these roles were not disaggregated, but at the same time, the division of responsibility means that no one person or group can make an investment decision. At Guggenheim, investment decisions are only made in accordance with the expert input from each group. This process requires collaboration, communication, deliberation, and effort, all hallmarks of Type 2 decision making.

Designed to be Predictable, Scalable, and Repeatable

The four groups within our investment process are intended to work together to deliver a process that is predictable, scalable, and repeatable. We also like to say that it is explainable because of the fundamental principles upon which it is built.

In our disaggregated process, the way the specialized roles work together slows down decision making. For example, sector constraints set by the Portfolio Construction Group ensure discipline in portfolio investment and rebalancing. For security analysis, sector teams rely on market forecasts based on macroeconomic research. Each of the four groups has more time to focus on—and is the only group responsible for—its area of expertise.



Our Process in Action

Guggenheim's fixed-income portfolios are managed by a systematic, disciplined investment process designed to mitigate behavioral biases and lead to better decision making.

The elements of the investment management process are divided among four independent investment management teams. By making our investment process team-based, we slow down the decision-making process, and by slowing down the decision making, we make sure that every decision is thoughtful and minimizes biases.

Macroeconomic Research

Economic, Policy, and Market Themes and Forecasts

The Macroeconomic and Investment Research Group provides the rest of the investment team with the outlook on the U.S. and global business cycle, market forecasts, and policy views. The Group establishes the house view on economic, the labor market, inflation, and other drivers of economic growth and investment performance, and evaluates debt and equity markets, as well as interest rates and commodities. Policy views encompass regulatory initiatives, fiscal policy, and monetary policy at the Federal Reserve and other global central banks.

Sector Teams

Security Analysis, Selection, and Monitoring

The Sector teams are responsible for not only sourcing the most compelling risk-adjusted investments but analyzing them and providing ongoing risk monitoring. They take input from the macroeconomic team and provide security recommendations to portfolio managers, who decide on asset allocation.

The Sector teams focus on the following sectors: investment-grade and high-yield corporate bonds, bank loans, asset-backed securities, collateralized loan obligations, non-Agency residential mortgage-backed securities (MBS), commercial MBS, commercial real estate debt, municipal bonds, Agency MBS, and Treasury/Agency securities.

Portfolio Construction

Model Portfolios and Risk Analysis

The Portfolio Construction Group provides strategy, research, and risk management analysis, and focuses on optimizing portfolio positioning for each client and fund by formulating model portfolios. The Portfolio Construction Group also conducts portfolio level risk analysis to evaluate whether the risk positioning is appropriate for each client. The Portfolio Construction Group is not involved in the day-to-day management of a portfolio or security selection; that is the role of the Portfolio Managers and the Sector teams.

Portfolio Management

Executes Investment Strategy According to Team Inputs and Portfolio Guidelines

The Portfolio Management team interacts with the Portfolio Construction Group, the Macroeconomic and Investment Research Group, and the Sector teams to make appropriate allocations for any given strategy. It synthesizes the collective work of the different groups to manage according to portfolio investment guidelines and the risk directives and needs of each client and fund. The Portfolio Management team is also the primary point of contact for clients for any updates and reporting that may be required to fulfill our client service obligations.

Case Studies

Surviving Oil's Slide and Benefitting from Its Recovery

How the Four Groups Interact in Investment Decisions

A powerful example of our process at work occurred during the volatile oil markets of the last few years. In 2014, when the price of oil declined from around \$100 per barrel to \$80, market consensus put the low at \$75. Analysis of the oil market by our Macroeconomic and Investment Research Group indicated that the price of oil was in a far more precarious position than the market was anticipating. The Group communicated its view that oil could trade as low as \$25.

Using this forecast as an input into their credit models, the Sector teams identified the securities of those energy companies and other industries that would be vulnerable to a severe decline in the price of oil. The Portfolio Construction Group used this outlook in its risk models to determine how this oil forecast could affect clients at the portfolio level. Informed by the work of the Sector teams and the Portfolio Construction Group, the Portfolio Management team was able to reduce the exposure to these companies and sectors, thereby minimizing losses during the selloff that followed. By the time oil prices bottomed near \$26 in early 2016, our teams were prepared to take advantage of investment opportunities that would benefit our clients as oil rebounded.

Finding Yield Without Undue Credit and Duration Risk

A Process Designed to Find Value Beyond the Benchmark

The specialization built in to our investment process positions us to evaluate assets and implement strategies that require deeper analysis, focused resources, and specialized expertise. Our core competencies in credit, structured products, and due diligence lead us to parts of the fixed-income market that are not included in the popular benchmark, the Bloomberg Barclays Aggregate index (Agg).

Achieving yield targets while maintaining an investment-grade portfolio is possible, but it requires a willingness and ability to look beyond the benchmark. At \$26.6 trillion, the Agg represents less than half of the total U.S. fixed-income universe, leaving out over \$28 trillion in securities that do not meet its requirements for inclusion, including bank loans, high-yield bonds, and non-Agency MBS, as well as the majority of the ABS and municipal sectors, many of which carry investment-grade credit ratings. We believe our ability to uncover value in securities outside of the traditional benchmark-driven framework puts our clients in the best position to benefit from our pursuit of compelling risk-adjusted return opportunities. At the heart of this investment proposition is the structure of our investment process, which allows our best ideas to be expressed in actively managed portfolios.

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About Guggenheim Investments

Guggenheim Investments is the global asset management and investment advisory division of Guggenheim Partners, with more than \$217 billion¹ in total assets across fixed income, equity, and alternative strategies. We focus on the return and risk needs of insurance companies, corporate and public pension funds, sovereign wealth funds, endowments and foundations, consultants, wealth managers, and high-net-worth investors. Our 250+ investment professionals perform rigorous research to understand market trends and identify undervalued opportunities in areas that are often complex and underfollowed. This approach to investment management has enabled us to deliver innovative strategies providing diversification opportunities and attractive long-term results.

About Guggenheim Partners

Guggenheim Partners is a diversified financial services firm that delivers value to its clients through two primary businesses: Guggenheim Investments, a premier global asset manager and investment advisor, and Guggenheim Securities, a leading investment banking and capital markets business. Guggenheim's professionals are based in offices around the world, and our commitment is to deliver long-term results with excellence and integrity while advancing the strategic interests of our clients. Learn more at GuggenheimPartners.com, and follow us on LinkedIn and Twitter @GuggenheimPtnrs.

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