MACKENZIE Investments

Mackenzie Global Quantitative Equity Team

Nimble, holistic, innovative

Mackenzie Investments' GQE Team exemplifies cutting-edge quantitative investing, leveraging advanced statistical models and proprietary techniques to drive performance. The team's structure, combining seasoned portfolio managers and skilled analysts, facilitates swift decision-making and dynamic strategy implementation.

The team employs a holistic quant approach, integrating fundamental perspectives and multi-style positioning to uncover alpha in a rapidly evolving landscape. Their investment process includes daily contextual and quantitative rankings of a vast universe of global equities, with human oversight to bolster our data-driven techniques.

This blend of innovative quantitative techniques and disciplined risk management defines the team's forward-looking investment philosophy, aiming for consistent outperformance across diverse market environments.

Investment team and research structure

The GQE Team was founded in Boston in 2017 under the leadership of Arup Datta, a pioneer in quantitative investing, now with over 32 years of experience. The 12-member team is comprised of four senior portfolio managers – all of whom have worked together for a decade or more – two directors, five analysts and one dedicated quantitative equity trader.

The nimble team facilitates quick decision-making, ensuring they can deploy new alpha signals and modify risk constraints efficiently. They hold daily morning meetings that promote cohesion, ensure uniform understanding of processes and enhance productivity. This balance of experience between tenured senior quant portfolio managers and analysts with academic knowledge of leading quant techniques is an intentional structure that contributes to the fruitfulness of their proprietary research and talent-retaining culture.

While their processes are largely driven by quantitative techniques, they recognize the importance of human oversight. Each trade is overseen by two senior team members and, if opportunities to enhance their processes arise, they are not afraid to make an occasional discretionary override. For this reason, their approach to quantitative investing is inherently fundamental, bottom-up and forward-looking.

Philosophy, style and related disciplines

The GQE Team's investment philosophy is underpinned by a continuous quest for new sources of alpha, in response to the rapid evolution of quantitative methods and novel datasets in recent years.

Dramatic advancements in computing power coupled with innovative new tools, such as machine learning and natural language processing, have revolutionized quantitative investing for attentive practitioners. These technologies allow the team to access large, non-traditional datasets, which offer valuable and previously untapped investment insights as well as a competitive edge.

In response to this evolving quantitative landscape, the team has developed an investment philosophy they call holistic quant. This is defined as a quant method that incorporates several of the following: active positioning, idiosyncratic stock risk, fundamental perspectives, forward- and rearward-looking investment signals, multi-style (including core) positioning and an awareness of the impact of portfolio implementation.

At Mackenzie Investments, we incorporate all of these holistic enhancements.

Firstly, we understand that stock markets are influenced by different investment styles – value, growth and quality – at different times. Thus, they adopt a core, all-weather philosophy that doesn't overemphasize a particular style but provides balanced overweight exposures to all value, growth and quality factors at the total portfolio level. This enhances their potential for long-term outperformance across various market environments.

Additionally, they believe portfolio implementation is as important as investment research. This holistic enhancement will be explored in further detail toward the end of this piece.

The security universe

One of the most prominent advantages of quantitative methods is the breadth of coverage they offer. The global public equity investment universe spanned over 50,000 companies by the end of 2023. Though data availability varies by region, quantitative methods can be applied to this whole universe, whereas qualitative methods can only apply to a small subset.

As a result, the GQE Team's investable universe is vast, spanning some 20,000 securities, including more than 3,000 US, 6,000 international developed and 10,000 emerging market stocks. The universe is defined by applying a $500,000 median daily trading volume or index membership criteria.

Investment process

One of the team's investment techniques is contextualization, or the ranking of stocks while emphasizing the specific alpha factors that are most relevant to their underlying characteristics.

The team understands that the relevance of different metrics – liquidity, volatility, size, or growth, for example – varies for each stock. For instance, traditional valuation measures may be less relevant for rapidly growing businesses, while price momentum could hold greater relevance for stocks with lower liquidity. By giving greater weight to more relevant metrics, the team enhances the predictive power of their forecasts, ensuring both opportunities and risks are accurately assessed.

In addition to contextualization, they also rank stocks daily by applying quantitative alpha model calculations. Each day, stocks are ranked within their respective regions and sectors, allowing for comparisons between their positions relative to their peer universe. The ranking is based on individual stock alpha forecasts which extend for the next year and is relative to the region and sector average forecast.

Portfolio construction and implementation

The GQE Team emphasizes portfolio construction and implementation as much as investment research, ensuring their best-in-class processes are executed throughout the entire investment process.

Continuous portfolio construction research is crucial to the team's success, guiding their decisions on stock position sizing, risk factor constraints, industry and country exposures, turnover monitoring and active risk targeting. They focus heavily on the liquidity requirements of each stock position, as well as transaction costs, market impact and borrowing expenses related to each trade.

Additionally, they place strict assets under management (AUM) capacity limits on each of their strategies – $4 billion (USD) for all small cap equity strategies combined, for instance. Their research shows a direct correlation between excessive asset growth and diminished performance, particularly in less liquid markets. As such, AUM capacity limits allow the team to stay nimble in its investments and execute trades efficiently to maximize alpha potential.

Similarly, airtight implementation helps ensure that their investment philosophy is well-executed in practice. The team has invested heavily in infrastructure to allow daily rebalancing of every portfolio (twice daily for global strategies), giving an advantage over competitors who rebalance weekly or even monthly. Their research indicates that meaningful excess returns accrue over the first 10 days following execution of their trades; less frequent rebalancing would neglect much of this alpha opportunity.

Finally, to capitalize on the insights provided by their investment process, the team implements decisions efficiently and avoid bureaucratic drag. Agile trading requires agile brokers and, as such, the team monitors its trading experiences to improve trade flow. If a broker's trade execution continues to slip, they retire the relationship for the benefit of their processes and, ultimately, clients.

Risk and risk management

Risk management within the GQE Team is a structured and multifaceted process, relying on proprietary risk models that are both fundamental and statistical.

The team utilizes these models to examine factors that can influence returns, employing a multi-factor approach to identify and model sources of portfolio risk. This process is critical in forecasting, measuring and monitoring portfolio tracking error, volatility and risk contribution at the stock, sector and country level.

Daily portfolio monitoring and adjustment are central to the team's risk management strategy. They use Axioma-based portfolio optimization techniques to enforce portfolio risk constraints, ensuring that all portfolios adhere to established guidelines. These guidelines, in turn, are monitored daily and impact the portfolio's daily rebalancing.

Liquidity management is another critical aspect of the team's risk management approach. They monitor liquidity at the individual stock level, taking care to avoid excessive exposure to any single name across multiple strategies. The policy is to limit trading to no more than 15% of the daily trading volume and to place limits on how many days' volume can be held in a single name across all accounts and strategies. This helps prevent illiquidity issues, particularly during times of market stress.

In times of extreme market dislocation, The team also implements a human overlay to adjust their strategies accordingly, ensuring that they can navigate effectively through volatile market conditions.

Mackenzie Global Quantitative Equity team

Arup Datta,
MBA, CFA

Senior Vice President, Portfolio Manager, Head of Team

Joined Mackenzie in 2017.
Investment experience since 1992.

Nicholas Tham,
MA, CFA

Vice President, Portfolio Manager

Joined Mackenzie in 2017.
Investment experience since 2009

Haijie Chen,
PhD, CFA

Vice President, Portfolio Manager

Joined Mackenzie in 2018.
Investment experience since 2011

Denis Suvorov,
MBA, MS, CFA

Vice President, Portfolio Manager

Joined Mackenzie in 2018.
Investment experience since 2001

Investment strategies

The GQE team manages a broad range of strategies across global, international, North American and emerging markets.

Emerging market strategies

- Emerging Markets Small Cap
- Emerging Markets Large Cap
- Emerging Markets All Cap
- Emerging Markets Low Volatility
- Emerging Markets Long/Short Opportunities
- China Large Cap
- Emerging Markets ex-China

International strategies

- International Small Cap (MSCI EAFE Small Cap)
- International Small Cap (MSCI World ex-US Small Cap)
- International Large Cap (MSCI EAFE)
- International Large Cap (MSCI World ex-US)

North America strategies

- US Small Cap
- US Large Cap
- US Large Cap Value
- US Large Cap Core/Value
- US Low Volatility
- US Quantitative Amplified Core
- US Quantitative Amplified Growth
- Canadian Low Volatility
- Private Equity Replication

World strategies

- World Low Volatility
- World Large Cap
- World Market Neutral
- World Shariah Equity
- Global Shariah Equity

MACKENZIE Investments

Q&A with Arup Datta

Senior Vice President and Head of Global Quantitative Equity Team

Q: Are alpha models the same in all regional equity markets?

No. Though many of the alpha factors are embedded within the alpha models across multiple regions, the models and related alpha rankings are region and sector specific. Specifically, there are four regional models within emerging markets (China, Asia ex-China, EMEA, Latin America) and four regional models within developed markets (US, Asia ex-Japan, Japan, Europe) and then 11 sector-specific models within each regional model. The decision to integrate an alpha factor and its respective model weight is driven by the team's own proprietary research and analysis to confirm its efficacy across the models and optimal weight.

Q: What is the rationale for some factors being effective in some regions and not others?

There are real differences between markets which result in differences in factor effectiveness. For example, in sophisticated and mature markets like the US, many of what we consider traditional factors no longer work. Instead, there is more weight on newer, more innovative factors based on machine learning and alternative data. In emerging markets, many traditional factors still work, and there is less data availability for alternative data, so the weights for newer factors are lower.

Q: How is contextualization applied and can you provide an example?

Contextualization is the process by which we ensure we are ranking stocks on metrics that are most relevant to the underlying characteristics of each. We find that firm characteristics do impact investment signal efficacy. For example, one can reasonably expect valuation measures to be less effective in fast growing businesses or expect price momentum to be more effective in stocks with relatively low liquidity. We systematically test and incorporate such ideas into our alpha model to further increase the predictive power of our forecasts of stock returns. Examples of contextual variables include liquidity, volatility, size and growth.

Q: How are you able to achieve "over exposure" to all three super factors buckets simultaneously in the overall portfolio?

A key point to clarify is to dispel the traditional idea that stocks are either high growth stocks or cheap value stocks. It is true that growth and value tend to be negatively correlated, and while there are definitely famous outliers which fall into either category, most stocks are somewhere in the middle. There is also significant variation across stocks. If the optimizer chooses some high growth names in the portfolio, it will also choose some cheap value names in the portfolio. Amongst the high growth names, it will tend to choose names which are cheaper, and amongst the cheap value names, it will tend to choose names which have higher growth. Given the large number of stocks in the universe, and the large variety of value and growth exposures for each name, the optimizer is able to select a portfolio that has positive exposure to both growth and value.

Part of the confusion might be thinking about growth and value as categorical variables, or sectors. It is not possible to overweight all sectors in the benchmark, since sector membership is a yes/no variable. Each stock can only belong to one sector. Sector exposure is a zero-sum game. If you overweight one sector, you must underweight something else to offset it. Growth and value are not like that. While it is unlikely, it is possible for a stock to be cheap and high growth at the same time. There is a negative correlation between the two, but they are not mutually exclusive like sector membership. It is thus not zero-sum. Increasing growth does not necessarily come at the expense of the other.

Q: What is the relevance of human overlay/intervention in the process and in what situations have you applied it?

We are strong believers in utilizing a human overlay on our quantitative processes. We place thorough vetting on our daily trading list, especially for first time buy and sell recommendations. The team has implemented a human override strategy in the past to strategically adjust factor or country exposure, deviating from the core mix or maintaining country neutrality during extreme times of market dislocation. A recent example is the US banking crisis during Q1 2023. We did not buy Silicon

Valley Bank for First Republic Bank despite the model finding it attractive. Another example we did successfully is we put some extra value tilt to the portfolios during the COVID –19 crisis, when the team found an extreme valuation disparity signalling a rare opportunity to overweight value factor.

Q: How do you determine the appropriate weighting of a new factor?

The base weighting is determined by historical analysis, and it is done based on panel regression over the last 25 years, with greater emphasis on the later period. We slightly adjust the weighting on a daily basis through our "contextual variables" which are designed to help ensure that we are assigning the appropriate weighting to factors based on metrics that are 1) most relevant to each stock's underlying characteristics and 2) have the highest predictive ability.

Q: How often do you run the analysis to determine whether current alpha factors still have efficacy?

The team will evaluate the efficacy of the existing factors when there is a model refresh — that could be due to adding a new factor, or model modification. For example, an existing factor could be less effective due to the change in correlation when adding new factors; then the old factor would be removed.

Q: What do you do to ensure you are not data mining or over fitting on new factors?

New factors need to make fundamental sense before we test them. The results need to be in the same direction as our fundamental prediction. They also need to be statistically significant with sufficient weight in the model. While we do active research, we avoid practices like testing excessively numerous versions of the same factor to cherry pick the best one. Overfitting is prevented by not seeking to find overly complex patterns in the data, which may be spurious and unlikely to persist.

Q: How do you source new research ideas and prioritize the work?

Discussion and the formulation of new ideas is a major component of the team's research meetings which occur on a daily basis. Current market environment and potential enhancements to the investment process are discussed during these meetings primarily focused on alpha factors, portfolio construction and transaction cost research. Investment ideas are often inspired by reviewing academic papers and sell-side research in addition to the team's own original research. While I have ultimate responsibility for investment decisions, rigorous testing and the consensus of the team is typically reached before any new research ideas are implemented into portfolios.

Q: How can you manage 18 strategies with a relatively small team of 10?

Although our investment staff will continue to grow commensurate with our asset growth, we not only prize a smaller team size, but also philosophically believe that larger teams can be counterproductive. Keeping our team nimble enables us to focus on the highest value-added projects and increases the efficiency of our decision-making and ability to deploy new alpha signals or modify risk constraints quickly. We believe team cohesion and culture is vital to producing exceptional results. At our daily morning meetings, our entire team discusses all aspects of our investment process and makes all decisions in this setting. This ensures uniform understanding of our process, which in turn improves productivity and job satisfaction.

Q: How common is it for factors to get arbitraged out of market?

Most of our factors are tested on long time periods, so they tend to persist. However, whenever we add new factors to the model, we retest all the existing factors to see if they are still predictive. Sometimes the new factor will replace an older one as it has better efficacy but is correlated to an existing factor. Sometimes existing factors will drop out as more recent data will be added to the model, and those factors might not have done well in recent years.