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Fund Focus
Schroder GAIA Two Sigma Diversified

December 2017

Following the Schroders partnership with Two Sigma Advisers we spoke to Geoff Duncombe, Portfolio Manager and CIO, to find out more about the firm's innovative approach to investing.

Can you tell us a bit about Two Sigma and how the team is involved with this fund?

In essence, we are a technology company, founded in 2001, applying our talents to the domain of finance and we work passionately to shape the future of investment management through the intelligent application of technology. We aim to consistently generate alpha in liquid global markets across a range of conditions using a disciplined, systematic approach.

Two Sigma Advisors (TSA) was launched as an investment adviser in 2009 by John Overdeck and David Siegel. We are headquartered in New York and our affiliates have additional offices in Houston, London and Hong Kong. Together with our affiliates, TSA employs over 1,250 full-time employees and manages approximately $51 billion, including employee and proprietary capital[1].

TSA's investment team is experienced and diverse and is supported by more than 700 modellers and engineers, working collaboratively on an integrated platform to create alpha. Our voluntary retention rate at the firm is high (97%), highlighting a strong company culture and an emphasis on human capital. Schroder GAIA Two Sigma Diversified is managed by the TSA investment team and portfolio manager Geoff Duncombe, CIO of TSA.

What does Schroder GAIA Two Sigma Diversified offer investors?

The fund seeks to combine TSA's existing capabilities in systematic equity market neutral and global macro investing. The fund aims to deliver uncorrelated alpha, with controlled volatility, across a wide range of market conditions through the systematic application of fundamental, technical, event and alpha capture strategies to global markets.

The fund benefits from the research platform, robust technology infrastructure and process-driven approach utilised across TSA or its affiliates over the past 10+ years.

What is the fund strategy?

The fund is a combination of both a US equity market neutral strategy and global systematic macro trading strategies. The fund will allocate approximately 85% of its capital to equity market neutral and 15% to macro trading strategies.

Across the funds that we manage, we use a broad and diversified set of models across a variety of instruments to try to form a 360 degree view of the markets. The new fund seeks to incorporate a diverse and exhaustive library of structured and unstructured information, over a variety of investment horizons, which translate into approximately 200 investment strategies.

What is the fund's investment universe?

The US equity universe consists of approximately 5,000 – 6,000 listed stocks and the macro trading strategy trades over 200 global markets including equities, fixed income, currencies and credit. More specifically, our universe includes:

Equity:

- US equities (via derivatives)

Macro:

- Equity: Listed futures in the US, Europe and Asia
- Fixed income: Listed futures in US, Europe and Asia; US, Europe and Asia interest rate swaps; US sovereign bonds
- Currencies: Spot and listed futures in developed markets; NDFs and listed futures in emerging markets
- Credit: Credit index swaps in US and Europe

Meet the manager

Geoff Duncombe

Chief Investment Officer, Two Sigma Advisers, Managing Director

Geoff Duncombe joined Two Sigma Investments in 2008 and is currently Chief Investment Officer of Two Sigma Advisers. Mr Duncombe was previously Portfolio Manager and Research Director for the firm's Horizon strategy, where he led the build out of systematic macro and derivatives capabilities. In his research role within Two Sigma Investments, Mr Duncombe and his team developed models under several themes including technical, fundamental, relative value, and volatility forecasting. Prior to joining the firm, Mr Duncombe worked in the Quantitative Strategies group at Goldman Sachs Asset Management (GSAM), where he was responsible for portfolio management of GTAA, equity market neutral, and volatility strategies. While at GSAM, Mr Duncombe also served as a Quantitative Researcher responsible for various strategies within global macro and option-based strategies.
Prior to GSAM, Mr Duncombe worked with Dresdner Kleinwort Wasserstein in the Mergers and Acquisitions group.
Mr Duncombe earned a bachelor's degree with honors in mathematics from Penn State University and a master's degree in financial mathematics from New York University's Courant Institute. As the Chief Investment Officer of Two Sigma Advisers, Mr Duncombe is responsible for all investment-related functions of Two Sigma Adviser's business.

1 Note that TSA is affiliated with other entities not listed above. Staff numbers and AUM as at 1 December 2017.

What is your research process and how is it reflected in your investment approach?

The three main pillars of TSA and its affiliates that support the investment philosophy are:

1 Information: 10,000+ data sources (public and proprietary), 35+ petabytes (a petabyte is equal to one million gigabytes) of data and 1.7+ billion actual trades since 2001

2 Computing power: Two Sigma is ranked among the world's top 110 supercomputer sites

3 Human capital: As mentioned previously, we have a large pool of talented, modellers and engineers

Source: Two Sigma's SimFarm computing power compared with publicly-available data from http://www.top500.org, (November 2016 list) accessed February 2017.

Based on these three pillars, TSA focuses on the following principles to develop its investment process:

- Information drives alpha
- Small opportunities add up
- Measurement leads to improvement
- Diversification is key
- Smart execution maximises alpha
- Liquidity provides flexibility
- Risk must be managed ex-ante, real-time, and ex-post

How do you construct the portfolio?

Research and portfolio construction are continuously improving processes at Two Sigma. Our research combines intuitive thinking with rigorous data analysis in an effort to create accretive models of persistent effects. We aim to formulate ideas that make intuitive, economic and financial sense, then to source, clean, and analyse vast amounts of publicly available and proprietary data to test and refine those ideas. We evaluate the impact of new models on the existing "portfolio of models" to then determine the added value and weight those models within the portfolio accordingly.

In terms of portfolio construction, portfolio managers will select models and set weights for their portfolios. They will determine inclusion and assign conviction to the strategy as appropriate. Some factors taken into consideration are: robustness of idea, quality and quantity of historical data and value added (risk and return) to the portfolio. Then we will simulate the incremental value of each model based on a number of factors such as alpha contribution, risk, liquidity and capital requirements.

Portfolio construction is a systematic process that translates information into an "optimal" portfolio in a consistent, repeatable, and scalable way. We update and analyse data across hundreds of sources in real time and our systems then refresh data specific to models in real time. We then generate independent forecasts and form a "consensus view" for each instrument in the strategy's trading universe. A target allocation is then created based on the "consensus view" of each instrument, the trading costs, and risks to that investment in a systematic way. We then develop and utilise efficient trading strategies to align the current and "optimal" portfolio.

We believe execution is an alpha source: the dedicated execution team across our shared platform creates and implements proprietary technologies. Our processes are constantly tested, enhanced, and benchmarked to "the street's" algorithms and platforms. Human traders on the trading floor work with algorithmic execution tools to provide significant benefits; they can trade automatically or manually depending on trade and instrument, and are adaptive, especially in times of market stress.

How do you manage risk in the portfolio?

We systematically manage risk with human oversight, which includes a dedicated team and risk management at multiple levels throughout the investment process. On an ex-ante basis researchers will seek to test models over a broad range of market conditions. Real-time risk management monitors all risk constraints using a penalty-based approach, with select use of hard limits where appropriate. Our risk management team combines market experience with automated tools to identify unusual market conditions and adjust risk aversion levels as appropriate. Our core risk principles are to stay liquid and utilise scenario and stress tests and reduce risk when in doubt at all times.

Additionally, within the GAIA platform an additional layer of risk monitoring and management is applied, this risk function will calculate daily the risk exposures of the fund – including VaR, stress tests, gross leverage and sensitivity indicators – and will monitor these against the prescribed limits.

What does the strategy offer that other alternative strategies cannot?

At Two Sigma our systematic approach combines and improves upon the best of traditional quantitative and discretionary investment methods through systematic implementations.

As part of our scientific approach to developing models, we utilise experience in traditional fundamental and technical analysis and read the "mood" of the street and industry to refine positions and modulate risk. We monitor and test robustness of code to avoid software errors and by utilising super-computing scale tools we can back-test and shock-test with frequent simulations. With this strategy you are gaining access to what we believe is a more disciplined and diverse investment approach, where we combine human oversight with systematic investment and risk management.

Risk considerations

- A rise in interest rates generally causes bond prices to fall. A decline in the financial health of an issuer could cause the value of its bonds to fall or become worthless.
- A failure of a deposit institution or an issuer of a money market instrument could create losses.
- Equity prices fluctuate daily, based on many factors including general, economic, industry or company news.
- The fund can be exposed to different currencies. Changes in foreign exchange rates could create losses.
- The fund uses derivatives for leverage, which makes it more sensitive to certain market or interest rate movements and may cause above-average volatility and risk of loss. A derivative may not perform as expected, and may create losses greater than the cost of the derivative.
- The counterparty to a derivative or other contractual agreement or synthetic financial product could become unable to honour its commitments to the fund, potentially creating a partial or total loss for the fund.
- In difficult market conditions, the fund may not be able to sell a security for full value or at all. This could affect performance and could cause the fund to defer or suspend redemptions of its shares.
- Emerging markets, and especially frontier markets, generally carry greater political, legal, counterparty and operational risk. Failures at service providers could lead to disruptions of fund operations or losses.