Quantitative Screens: What are they and how do we use them?

History of Quantitative Investing

Quantitative equity investing came to prominence once computers became small enough and fast enough to process the vast amounts of data needed when dissecting stocks by way of their many different characteristics.

However, some argue that it precedes computers. Steven Greiner, author of 'Ben Graham Was A Quant' argued that when the famous investor published 'The Intelligent Investor' article in 1949 listing seven criteria to determine the suitability of which stocks to own, he was in fact building a quantitatively derived portfolio. Others cite the 1952 paper written by Harry Markowitz, which gave birth to Modern Portfolio Theory ("MPT"), as the inception of quantitative investing using statistical data to determine security prices.

Fast forward to more recent times and quant (the more commonly used shorter form of the word) has definitely progressed. Today, AI (artificial intelligence) investing is becoming ever more prominent with computers that are being programmed to teach themselves and learn from their experiences.

Quantitative Screening

While this may paint a picture of complex programs and super-powerful computers, it's when you focus on the root meaning of quantitative investing that it becomes more manageable to digest: *A method for analyzing securities that comes from the systematic, disciplined, and repeated application of a process.* This statement aligns with our trademark, *The Power of Disciplined Investing* — when talking about how we manage equities, nothing personifies that more than our integration of quantitative screens into our investment process.

GREYSTONE
MANAGED INVESTMENTS INC

Greystone's Approach

We use quantitative screens as the first step of our three-step investment process. We choose a combination of factors in the screen that best articulates our investment philosophy. While we are a growth-biased manager, we don't just focus on growth factors. Rigorous testing of our approach shows that a combination of growth, value and quality factors provides for a more robust screen. Additionally, different portfolios require different screens — a dividend-focused screen for Canadian equities will look very different from a growth-focused screen for International equities.

We utilize investment research platforms such as FactSet to build our screens. FactSet has data for global stocks with hundreds of data points for each one. These data points include information relating to balance sheets, income statements, and market data such as price, as well as industry-specific data. While FactSet is our chosen supplier of financial data, the quantitative screens we use are 100% proprietary to Greystone.

Using this systematic process, screening allows us to rank, on a daily basis, a large universe of stocks from those that have the best fit to our investment philosophy at the top of the rankings, all the way down to those at the bottom ranks that do not fit. It is this discipline that allows our fundamental research analysts and portfolio managers to focus on those stocks that are most suitable for our client's portfolios.

Why is Quantitative Screening Useful?

Quantitative screening is the vital first step of our investment process. Reasons for its importance include:

EFFICIENCY

It would be counter-productive for us to have a view on over 5,000 stocks. Screening culls the list down to a more manageable size in a manner consistent with our investment philosophy.

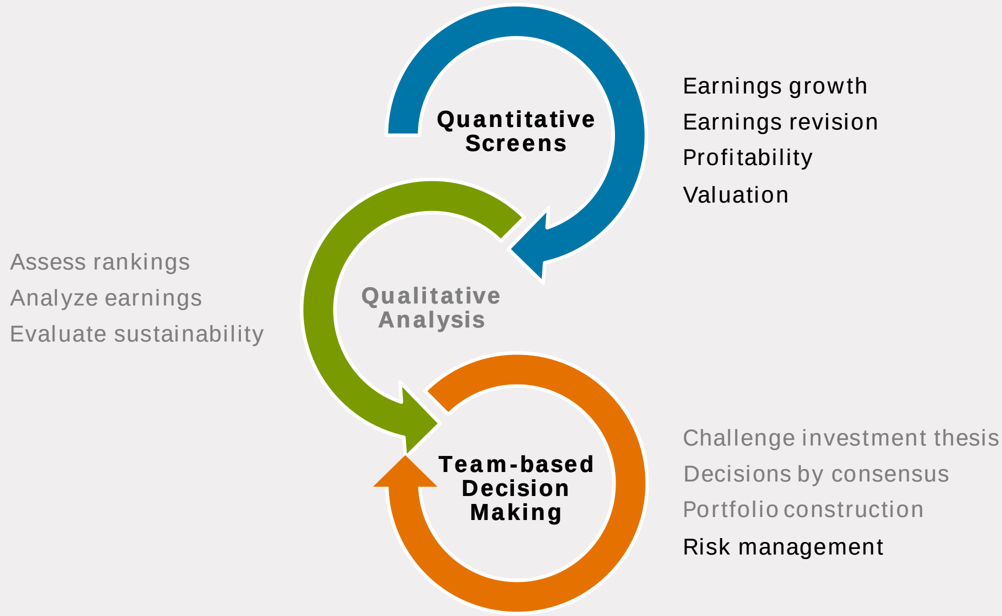
OBJECTIVITY

Many studies show the effects of psychology when making investment decisions. One such behavior is having a bias for or against certain stocks typically derived from historical experiences, either good or bad, or even more subjective criteria. Ranking the stocks using quantitative screens provides an objective, unbiased view.

SELL DISCIPLINE

Our screens are equally important when selling a stock. Typically, when a stock's ranking falls below a certain threshold, it is a signal that the stock may be a candidate to be replaced with another that ranks higher. It should be noted that we do not automatically sell the stock. Rather, the quantitative result provides the impetus for the fundamental research analyst to re-examine the investment thesis and determine whether the thesis has truly broken down or if instead the lower rank is transitory.

Quantitative research as part of our equity selection process



Quantitative Screening: An Example		
	Buy	Sell
Overall Ranking	1st	6th
Growth	2nd	3rd
Momentum	2nd	7th
Profitability	1st	4th
Value	3rd	2nd
Quality	3rd	3rd

Source: Greystone.

Quantitative screening provides an objective view of how a stock fits into our investment philosophy. When the thesis breaks down, and the holding screens poorly, it could be a candidate for selling.

Integration is Critical

We believe our biggest differentiator is the way we integrate quantitative screening into our overall process. While the actual make-up of our screens, which factors we use and what weight each represents of the overall screen, are indeed important, we believe that the integration with fundamental research is of even greater importance. The quantitative step in our process helps inform rather than dictate portfolio decisions — it is not a "black box."

While it is our Quantitative Research/Risk Management Team that manages and develops the screens we use, it is our Fundamental Research Team that uses the screens within their relevant sectors for stock selection. The feedback loop between the two teams, as well as with our portfolio managers, is continuous and helps in the evolution of our investment process. Equity investing is rarely black or white, and how our teams work together is therefore essential.

Portfolio-level Analytics

Our Quantitative Research/Risk Management Team is also well integrated with our portfolio managers. While our fundamental research analysts focus more at the stock level, the portfolio management teams also need to be aware of the quantitative characteristics at the portfolio level. "Rolling up" the stock level data to the portfolio level allows the portfolio managers to assess where (and by how much) we have style exposure to different factors such as growth, value or momentum, or macro exposure to market elements such as commodity prices and interest rates. As active managers, we are employed to take active risk. Our quantitative tools allow our portfolio managers to determine where they might want to increase or decrease factor exposure due to macro or style insights. Looked at another way, quantitative analytics are helpful for risk management too. Adding value isn't always through higher returns but also lower risk.

Evolution

Quantitative equity investing has evolved immensely since Benjamin Graham's and Harry Markowitz's days. We expect this will continue and our process will evolve as well. Our Quantitative Research/Risk Management Team already spends a significant portion of its time in developing tools for tomorrow. Building in-house platforms to exist alongside third-party platforms will allow us to create more refined screens that may be regional, sector or style specific. It will also allow us to explore factor behavior in far greater detail and enable us to quickly analyze factor behavior under a variety of scenarios. Importantly, it helps provide a far deeper and near real-time understanding of how factors are interacting across our different equity portfolios and how they influence performance across the economic cycle.

Conclusion

At Greystone, we consistently apply *The Power of Disciplined Investing* across all our equity portfolios. Quantitative screening has always been a vital part of that discipline. However, as always, our aim is to learn from our successes and failures and ensure all aspects of our investment process continue to evolve to meet our clients' need for reliable performance over time.

Greystone Managed Investments Inc.

With over $32 billion in assets under management,[1] we proudly serve universities, pension funds, multi-employer groups, endowments & foundations, insurance companies, and non-profit organizations.

We are a private company, majority-owned by our employees — over 95% of eligible employees are shareholders.[2]

Greystone has in-house expertise in the following areas:

MULTI-ASSET

- Balanced
- Balanced Plus
- Target Date Plus
- Alternative Suite

REAL ASSETS

- Real Estate
- Infrastructure

PRIVATE DEBT

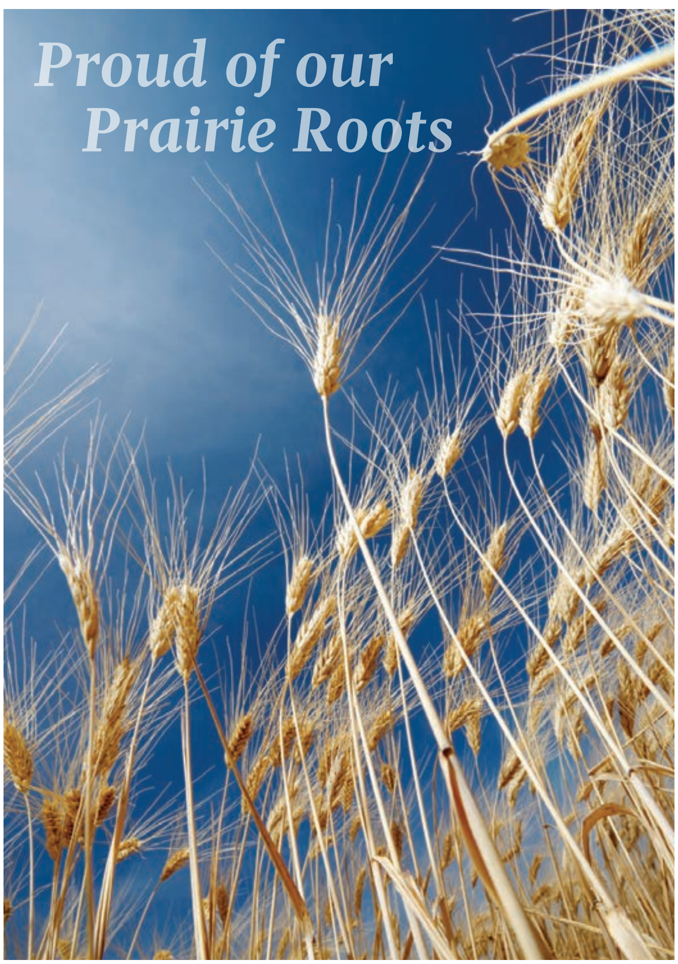
- Mortgages

FIXED INCOME

- Short-Term,Universe, Long-Term
- Corporate, High Yield
- Bond Plus
- Liability Driven Investing

PUBLIC EQUITIES

- Income & Growth
- Canadian,U.S.,Global, International, China
- Canadian Small Cap



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[1] As at Sep 30, 2017. [2] An eligible employee is defined as contributing one or more years of service to Greystone.