



April 18th, 2018

Learnings in the first year

This quarter marks the end of our first year of investing in the era of climate change. We remain confident in the central long-term thesis for our portfolio: while business fundamentals, management and valuations are critical to returns, climate change remains the largest unpriced risk in the public equity markets. So as long-term investors, we marry an analysis of the economic impact of climate change with a focus on solid businesses with lower-than-average valuations and effective management teams. We believe that the combination will produce superior long-term results.

As we've seen in the first quarter of 2018, the portfolio's concentration and construction produce some known factor risk, which can present some short-term volatility. For example, the portfolio is overweight the industrial sector. This is where we have found several attractive investments in companies well-positioned for the transition to a low carbon economy. In a prior note, we wrote that "We look for companies in industries that have long term growth potential that is favorable when compared to the S&P 500, while trading at lower valuations due to short term risks." That continues to be an important guideline for determining value.

Portfolio Themes

Every company in our portfolio is, in our assessment, both undervalued and a leader in preparing for climate change. In the past, we've discussed the four main economic drivers for climate change: the changing regulatory environment, the physical effects of a warming planet, changing consumer behavior, and technological advancements in efficiency and energy production. Here we want to share with you more detail about how these themes are expressed in our portfolio:

To start, as the externalities of carbon emissions will become increasingly difficult to ignore, we seek companies that promote energy efficiency or greenhouse gas reductions on the demand side. This includes companies like GM and Qualcomm that are bridging the transition to electric and autonomous vehicles but have modest valuations and generate significant free cash flow. Another example from our portfolio is Hexcel that manufactures carbon fiber, enabling lighter and more efficient planes. We also have exposure to smart/efficient buildings and cities through an LED lighting company, Acuity Brands, and a building retro-fitting company, Ameresco. While both companies are priced for modest growth, each has lines of business in smart buildings and renewables (growing 15-20%) that are poised to become meaningful contributors to earnings. In our judgment, each of the above is an attractive investment made even more compelling by the additional growth we expect from their increased efficiency products.

Second, we look for energy intensive companies that are leaders in managing their own demand for electricity. There are over 116 corporate signatories of The Renewable Energy 100 (a not-for-profit group whose signatories commit to being 100% fossil fuel free). This has grown from just over 70 signatories when we started investing. RGC holdings Google and Facebook have not just signed the RE100, (as have GM and Bank of America), but have led the way in sourcing renewable energy through Purchase Power

Agreements (PPA) for their electricity intensive data centers. In 2017, Google became the first company of its size to purchase enough renewable energy to power its operations. Through PPA's Google produced 3 gigawatts, enough to power 2.25 million homes. Importantly, The Rocky Mountain Institute confirmed that these PPA's were additive to the domestic supply of renewables. While Google and Facebook enjoy higher multiples than the rest of our portfolio and have increasing regulatory risk, we believe that the revenue growth, business moat and their long-term focus make them attractive at current prices. Facebook is expected to grow 25-30% next year and trades at a five-year low forward P/E ratio of 21x. This is a similar valuation to many great consumer franchises, such as Coca-Cola which has seen revenues and profits declining by more than 5% annually for the past five years.

Third, we hold several companies that are positioned to grow with the data economy. While data is not a direct off-set for our carbon needs today, it will act as the backbone to greater economic and operational efficiency by enabling the Internet of Things, Automated Vehicles, and Artificial Intelligence(AI) among others. Google, Qualcomm, and Liberty Global are all well-positioned for growth in the data economy. Google uses its AI company, Deep Mind, to make its data centers more efficient and is using the technology to reduce base load by 10% at the U.K.'s National Grid. Qualcomm's 4G Gobi modem can be attached to water pipes joints enabling city officials to monitor both water quality and efficiency (leakage) throughout the entire system. While we see the role of data as less directly related to climate as the prior two themes, we do think it will play an important role in our economic future. The May 6th 2017 edition of The Economist made an interesting comparison of importance of data to oil, saying "Data are to this century what oil was to the last one: a driver of growth and change. Flows of data have created new infrastructure, new businesses, new monopolies, new politics and—crucially—new economics."

Qualcomm is a good example of an investment that sold off in the 1st quarter because it unexpectedly got caught up in the trade war. It recently tried to acquire NXP, the largest manufacturer of automotive semiconductors with 14% market share. This represented an attractive opportunity for Qualcomm to get a strong hold in the automotive sector just as demand for chips is ramping up. The deal has been approved by every country except China. However, despite recent denials from China's Vice President Wang Qishan, that the trade war will impact the acquisition's approval, it appears that this deal is being held up. We expect the deal to ultimately be approved, but the shares have declined as the risk of the deal falling through has increased.

Fourth, the average age is increasing for the seven billion people in developed and developing economies. With increasing age and increasing prosperity come increasing consumption of health care products and services. In addition, increasing pollution and increasing obesity contribute to many illnesses, including asthma, diabetes and cancer. Technology is advancing and improving the diagnostic and therapeutic approaches to the above. Current holdings Sanofi, Amgen and Thermo-Electron products address those illnesses and have proven themselves profitable and innovative over time.

A Closing Thought

We would like to share a recent conversation we had with the former head of Research for Wellington Management, Spencer Glendon. He pointed out that financial professionals are always looking for new insights into the market. But climate science as a source of insight, uniquely, makes investors uneasy. This discomfort with climate change may be explained by behavioral economics, the political polarization of the topic, or difficulty of merging two systems (economics and climate models). However, it is not due to a weakness in the predictive nature of climate models. In fact, if one were to review 1980's science

journals, one would discover that scientists and their climate models offered eight predictions about what we would see today:

- 1) Rising average temperature
- 2) More rapid rise in temperature at the poles
- 3) More record high nights than days
- 4) Increasingly intense rainfall
- 5) Higher ocean levels
- 6) Decreasing Arctic sea ice
- 7) Hurricanes and typhoons at higher latitudes
- 8) Later winter and earlier spring

The models were right on all eight. In Mr. Glendon's words it is "mankind's first good forecast." Finance is an industry that celebrates people who can get investments predictions right 55% of the time. Yet we find the Laws of Thermodynamics remain outside the scope of traditional economic analysis. We believe that the forecasting ability of the scientific community has only improved since the 1980's and that it is a helpful tool for us to better understand the risks inherent in our carbon dependent economy. And while we do not think we'll be able to predict exactly how the U.S. and global economies will transition to a low carbon economy, we believe we have identified trends that will provide future, currently unpriced, tailwinds for some companies and industries.

If you have any questions, please feel free to reach out to us at IR@redgrovecap.com