GRANAHAN INVESTMENT MANAGEMENT

GLOBAL SMALL CAP

Portfolio Comments
December 31, 2023

Distinguishing Features

GIM builds the Global Small Cap portfolio from the bottom-up; sector and geographic weightings are secondary to stock selection. The Global Small Cap strategy is overweight Information Technology, Health Care, Communication Services, and Industrials versus the MSCI World Index Small Cap benchmark. The strategy is underweight in all other sectors. The portfolio has no exposure to Utilities or Energy.

Market Environment

Despite stock markets being up in 2023, smaller companies struggled as valuations and earnings were significantly impacted by higher interest rates and inflation. It is important to note that the S&P 500 and the Russell 2000, on an equally weighted basis, both hit lows in October from their peaks in 2021. This suggests we have been in a bear market for most stocks for two years despite strong performance coming from some of the largest market cap stocks. While there are plenty of macro uncertainties still in the mix, we see noteworthy positives. In the middle of December, the Fed signaled a more dovish stance on interest rates and lower inflation data points have also been encouraging.

The pain has been felt around the globe. Greater than 40% of developed market small cap stocks (ex-Japan) are down more than 40% over the last 2 years (JP Morgan; 2024 SMid Outlook). Every developed economy experienced contraction in Manufacturing PMIs (Purchasing Manger Indexes) in 2023, continuing to move lower through the end of the year. Consumer confidence fell in all regions except the UK last month and GDP estimates point to a growth deceleration in most economies in the world. While the U.S. posted strong GDP growth rates through Q3, Europe barely grew in 2023. On a positive note, the downward trend in inflation has been consistent. In fact, Japan has moved beyond concern over inflation and is now focused on avoiding deflation.

Performance Discussion

In the fourth quarter, the Granahan Global Small Cap strategy returned 13.3%, outperforming the Core Index return of 12.5%. The positive attribution from the quarter was not enough to offset challenged performance for the year, with the strategy returning +3.8% vs. the +15.8% return of the benchmark.

TOP CONTRIBUTORS	
4Q – 2023	**2023**
1. **Olink Holding** (Health Care, Core Growth)	**1. Nutanix** (Technology, Pioneer)
2. Nuvei Corp (Technology, Special Situation)	**2. Nuvei Corp** (Technology, Special Situation)
3. Nutanix (Technology, Pioneer)	**3. OSI Systems** (Technology, Core Growth)
4. 908 Devices (Health Care, Pioneer)	**4. Pure Storage** (Technology, Core Growth)
5. SES-imagotag (Technology, Pioneer)	**5. Rapid 7** (Technology, Pioneer)

- **Olink (OLK US)** was acquired by ThermoFisher. We sold the stock.
- **Nuvei Corp. (NVEI US)** is a differentiated provider of complex, end-to-end payment solutions globally. We added this Special Situation company to the portfolio this quarter after gaining confidence that a

string of bad results was nearing an end. Nuvei reported better-than-expected Q3 results, which is a first step in gaining back some credibility after a difficult 12 months. We are expecting growth acceleration to take shape over the next few quarters which should fuel further multiple expansion as investors regain conviction in the long-term secular growth story. We are holding the stock.

- **Nutanix (NTNX US)**, a developer of enterprise cloud platforms, continues to execute incredibly well. The company is experiencing strong demand from a more diversified customer base (e.g., government contracts). AI is likely providing a slight sentiment boost. More importantly, the recent pivot to balance growth with profitability has been well-received by investors, leading to multiple expansion over the last few quarters. Nutanix continues to be one of our larger holdings.
- **OSI Systems (OSIS US)** is a manufacturer of security detection systems and medical imaging devices and operates as a contract manufacturer. During 2023, the company received two large orders, one from an international cargo inspection customer and one from Mexico for border security. The investment thesis was predicated on strong orders from the company's security business that would lead to a much higher earnings growth profile than the stock price implies. We have reduced our position on strength.

TOP DETRACTORS	
4Q – 2023	**2023**
1. **Altus Group** (Real Estate, Special Situation)	1. **S4 Capital** (Communication Svcs, Pioneer)
2. **WNS Holdings** (Technology, Core Growth)	2. **Keywords Studios** (Technology, Core Growth)
3. **Chart Industries** (Industrials, Special Situation)	3. **Topgolf** (Consumer Discretionary, Core Growth)
4. **Open House Group** (Consumer Discretionary, Core Growth)	4. **Altus Group** (Real Estate, Special Situation)
5. **Prothena Corp** (Health Care, Pioneer)	5. **Azenta** (Health Care, Pioneer)

- **Altus Group (AIF CN)** is a provider of cloud-based software and services to the commercial real estate market. The company's solutions are facilitating digital transformation in what has historically been a less sophisticated industry. While a large portion of the business is recurring and mission critical, new business activity/bookings and sales cycles have been impacted by a spike in rates and subsequent decline in commercial real estate transactions. Furthermore, Altus announced an acquisition that was perceived as a slight departure from the strategy and will take time to show value. We continue to hold our position and await more clarity on industry transaction volumes before increasing our position size.
- **WNS Holdings (WNS US)** is a provider of business process outsourcing. The company experienced a temporary delay in starting work on a highly contested, Top 3 insurance client that WNS won recently. This dynamic combined with some slowing in travel during the quarter led to disappointing results and lowered guidance, a rarity for this management team. We are confident that these dynamics are temporary and have added to our position based on compelling risk/reward.
- **Chart Industries (GTLS US)** is a manufacturer of equipment used in the production, storage and end-use of hydrocarbon and industrial gases. General industrial activity remains somewhat depressed and is weighing on sentiment. However, the delay in large liquefied natural gas (LNG) projects is to blame for the significant selloff post-Q3 results. The projects are lumpy, and timing can move from quarter to quarter; it is the nature of the business. Nevertheless, we are encouraged by the strength in bookings. While the stock recovered a good portion of the initial selloff, the valuation discount continues to underappreciate the significant long-term growth opportunity tied to LNG. We continue to own the stock.

- **S4 Capital (SFOR LN)** struggled with growing pains after years of exceptional growth. Management decided to invest in supporting infrastructure and resources to set the company up for future growth, a move that was necessary but not one that investors wanted to see given its impact on profitability. In addition, the ad market deteriorated more than we expected at the beginning of the year. The technology-heavy mix of clients (e.g., Google, Meta, etc.) was supposed to shield the company from cyclical forces of ad spending. The reality was exactly the opposite as these technology companies meaningfully pulled back on marketing despite their own solid underlying ad businesses. S4 is highly differentiated and is disrupting the status quo in the traditional ad agency industry. We believe that as the ad spending environment normalizes, S4 will return to gaining meaningful market share and returning to strong double-digit organic growth rates. We continue to own the stock, albeit at a lower weighting pending more visibility on the ad outlook.
- **Keyword Studios (KWS US)** is a one-stop-shop game development outsourcing company with a dominant position in the industry, especially with the large game publishers. The introduction of generative AI in early 2023 had a significant impact on the stock price as investors overreacted to the fear that a good portion of the work that Keywords performs would be wiped out. We believe, as with other technological advances historically, that AI will represent a tool to efficiently add more content to games. Game publishers will continue to spend money to develop better games with the consumer being the beneficiary. The stock was also impacted by a pullback in the release of new game titles in the industry based on concern related to consumer spending. We feel strongly that this lower demand by publishers is temporary; 2024 is already looking like a bounce back year. At less than 15x P/E, the company has never traded at a more attractive risk/reward.
- **Top Golf Callaway Brands (MODG US)** is a leading golf equipment, apparel, and entertainment company with a portfolio of global brands that include TopGolf, Callaway Golf, TravisMathew, and Toptracer. MODG is well-positioned with its market leading positions to capitalize on the fundamental change in the sport of golf as off-course golfers expand the addressable market of total golfers. The stock was weak due to concerns about the growth outlook for TopGolf given some slowing trends towards the end of the year. The company's corporate-event business saw a material increase in 2022 as the pandemic eased. This business weakened more than expected during 2H 2023 given macro concerns. We believe the softness is temporary and expect stronger results from TopGolf during 2024.

A few sector themes we saw emerge were tied to:

1. Healthcare was a significant contributor to performance this year (+256bps), driven in large part by the acquisition of **Olink Holding**, a high growth Swedish company that is used by researchers to study the role that proteins play in drug development. **908 Devices** and **Castle Biosciences** were solid contributors as well. Both long-duration companies were driven by sentiment tied to the peaking interest rate narrative rather than any company-specific news.
2. Our Consumer Discretionary holdings struggled (-111bps) as concerns related to a recession created uncertainty. **Open House**, a differentiated homebuilder in Japan, took early steps to manage down inventory risk which drove weaker than expected 2024 guidance. Other names such as **Boot Barn**, **Portillo's** and **Topgolf Callaway** have been impacted by fears of an economic downturn despite otherwise solid long-term investment cases.
3. In Financials, the portfolio was impacted by the shift away from high quality (-111bps). **Goosehead Insurance**, a strong contributor in the prior period, gave back some of the strong gains from Q3 (-27bps). Similarly, **Kinsale Capital**, a newly added position of a company we have owned previously,

detracted by 31bps. Both were sentiment driven and continued to drive positive earnings estimate revisions.

Commentary

The Global Small Cap strategy faced a significant sentiment headwind over the last two years as interest rates shot up in unprecedented fashion. Much of this poor absolute and relative performance has been multiple contraction caused by higher interest rates and greater uncertainty – which combine to reduce investor appetite for longer duration growth stocks. The "higher for longer" narrative was potentially put to bed in October, at least for the time being. November and December seemingly marked a turning point for our type of stocks as inflation metrics cooled, economic growth, particularly labor and consumer spending, remained solid, and the Federal Reserve pivoted its monetary policy. We were encouraged by the performance through end of year, gaining almost 500bps to close out 2023. However, the risks to the markets remain, particularly related to the potential for slowing economic growth and geopolitical events.

Hendrik Bessembinder, a professor of finance at Arizona State University, published a study [1] that showed only 2.4% of companies were responsible for all the aggregate net global stock market wealth creation from 1990 to 2020. At Granahan, we are constantly searching for companies that have the potential to be part of that elite group of alpha generators. Our idea of "elite" are companies whose compelling value propositions, sustainable competitive advantages and meaningful secular growth drivers allow them to compound strong earnings growth over many years. While we try to avoid or lessen the impact of severe market selloffs and style rotations that occasionally occur, we cannot predict cycles.

Throughout the year, we added some compelling new ideas to the portfolio at risk/reward levels that we would only have dreamed about just 2-3 years ago; **Goosehead Insurance** (+32bps), **Cogent Communications** (+18bps) and **Fluidra** (in line). This quarter we purchased another in **Kinsale Capital Group**, a specialty insurance company focused exclusively on the excess and surplus (E&S) market in the U.S. The company writes a broad array of insurance coverages for risks that are unique or hard-to-place in the standard insurance market. The E&S market has historically been an attractive segment of the industry given the lower level of losses due to more restrictive coverage policies, less competition and stronger pricing power. The company's competitive advantage is centered on its proprietary technology platform that drives the lowest combined ratio (incurred losses + expenses/premium) in the industry. We took advantage of the selloff during the fourth quarter to own one of the best secular growth companies in the space at an attractive risk/reward.

Outlook

Earnings for small cap companies, as measured by the Russell 2000, are estimated to increase almost 20% in 2024 following two years of declining EPS. These expectations are not dissimilar to those in other developed countries, according to Eduardo Lucabarri from JP Morgan. According to both Lori Calvasina from RBC and Steve DeSanctis of Jefferies, balance sheets of Russell 2000 companies have near-record levels of cash. The same can be said for companies in Europe and Japan. We believe our portfolio valuations are at extremely low levels, and a handful of our portfolio companies are trading at or near cash levels. While it is not possible to predict outcomes, this Combination of low valuations and expected growth in earnings combined leaves us optimistic regarding the outlook for our portfolios.

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[1] Bessembinder, Hendrik (Hank) and Chen, Te-Feng and Choi, Goeun and Wei, Kuo-Chiang (John), Long-Term Shareholder Returns: Evidence from 64,000 Global Stocks (March 6, 2023). Financial Analysts Journal, Forthcoming, Available at SSRN: https://ssrn.com/abstract=3710251 or http://dx.doi.org/10.2139/ssrn.3710251

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