Morgan Stanley
INVESTMENT MANAGEMENT

COMMENTARY
June 30, 2023

Morgan Stanley Institutional Fund

International Equity Portfolio

INTERNATIONAL EQUITY TEAM

Performance Review

In the quarter period ending June 30, 2023, the Portfolio's I shares returned 3.26% (net of fees)[1], while the benchmark returned 2.95%.

The portfolio outperformed in the second quarter thanks to positive sector allocation. The portfolio's overweight in information technology and underweights in materials and communication services all contributed to performance. Stock selection was neutral as outperformance in information technology, health care and energy offset underperformance in financials and industrials.

The largest contributors to absolute performance during the second quarter were SK Hynix, Samsung, SAP, TSMC and Constellation Software (1.3%, 2.4%, 3.6%, 2.7% and 2.8% of the portfolio, respectively).[2] The largest absolute detractors were Teleperformance, Worldline, Barrick Gold, Heineken and BAT (0.00%, 1.4%, 2.2%, 3.0% and 1.4% of the portfolio, respectively).[2]

Market Review

For the second quarter overall, the MSCI EAFE Index returned +3.0% in U.S. dollars (USD) and +4.3% in local currency. Industrials (+6%), information technology (+6%), consumer discretionary (+5%) and financials (+5%) were the top performers whilst communication services (-3%) was the laggard. Along with energy (+0%), the defensive sectors of health care (+2%) and consumer staples (-1%) underperformed. Looking at geographies, euroland was strong; both Italy (+8% USD, +8% local) and Spain (+6%, +5%) notably outperformed, whilst France (+3%, +3%) and Germany (+3%, +2%) were in line. Nearby, Switzerland (+4% USD, +2% local) was ahead in USD but behind in local and the U.K. (+2%, -1%) underperformed. In Asia, the performance pattern was more mixed. Japan (+6% USD, +16% local) saw strong performance, particularly in local currency terms, whilst Singapore (-6%, -4%) and Hong Kong (-5%, -5%) were in the red. The U.S. (+9%) was comfortably stronger than the EAFE index in the quarter.

Portfolio Activity

We initiated three new names in the quarter, Universal Music Group (UMG) (1.4% of the portfolio), BP (1.0% of the portfolio) and Rightmove (0.1% of the portfolio).[2] UMG is the largest of the three major music publishers, and benefits from significant barriers to entry given its scale and hard-to-replicate content. The purchase of BP was based on our positive view on oil's ability to remain in the $70 to $90 per barrel range given the limited investment in new supply, along with improving clarity on the company's ability earn attractive returns on capital from renewable projects such as biofuels and electric vehicle charging. Rightmove is the U.K.'s dominant online residential property listing platform, with highly recurring subscription revenues. The company has strong moats from network effects, a strong brand, and its scale. Revenues are linked to the relatively stable estate agent branch numbers, rather than the more volatile housing transaction volumes and prices. The recent derating due to the current headwinds in the U.K. housing market has generated the entry opportunity.

We exited three stocks, Kirin, Teleperformance and Mowi. Kirin and Mowi's decent performances provided sale opportunities, given our concerns about Kirin's capital allocation and the potential Norwegian tax issues for Mowi. Our loss of faith in Teleperformance was a combination of the deterioration in management's execution over the last year and unease about the potential implications of AI for staff numbers in call centres. The bulk of our additions and reductions were driven by valuation moves, notably adding significantly to Qiagen (2.5% of the portfolio),[2] which has suffered from the uncertainty in the life sciences sector, and reducing the semiconductor names Samsung (2.4% of the portfolio), SK Hynix (1.3% of the portfolio) and TSMC (2.7% of the portfolio) on their very strong performance in the quarter.[2]

Outlook

Compounding Through The Hype

Global equity markets flourished in the first half of 2023, with the MSCI World Index returning +15% in U.S. dollars (USD), and now up over a quarter from the third quarter 2022 trough. In a mirror image of the derating in 2022, the rise has been down to a rerating

1 Source: Morgan Stanley Investment Management. Data as of June 30, 2023. Performance for other share classes will vary.
2 Holdings data as of June 30, 2023.

on fairly flat earnings, with the MSCI World's forward multiple expanding from 13.7x to 17.0x.[3] The sector picture has also been a reversal of 2022, as the market has been led by the growthier sectors that suffered last year: consumer discretionary, communication services, and in particular, information technology, with the outpouring of euphoria around the promise of generative artificial intelligence (AI) offering a new lease on life for tech mega-caps after a tough 2022. June saw a more general cyclical recovery, but up until the end of May, the "magnificent seven" or "MANAMAT",[4] around a quarter of the S&P 500 Index by weight, had effectively delivered all the U.S. index returns, with the other 493 constituents being slightly down overall.[3]

The ChatGPT phenomenon

It is true that AI has entered its next chapter, with algorithmic and processing power advancements, in addition to the explosion of data in recent years, ushering in a new era of generative AI. These clever large language models (LLMs), powered by advanced machine learning (ML) algorithms and trained on an enormous number of parameters, analyse and learn from the vast amounts of data they are fed to generate original, human-like content at warp speed. Since the debut of chatbot ChatGPT by OpenAI late last year, the market has been preoccupied with how to understand, implement, and price the accessibility advancements offered by generative AI.

What is unusual about the AI frenzy is that this isn't a eureka moment. While the use of generative AI has surged since ChatGPT's launch, narrower AI technologies like ML and natural language processing (NLP) have already been in use for a number of years. Face recognition, for example, uses ML algorithms to unlock your smartphone, and digital voice assistants such as Siri and Alexa use AI, NLP, and ML to understand commands and carry out a range of tasks. AI algorithms are used in e-commerce to make personalised shopping recommendations, in clinical trials to improve drug discovery and efficiency, and elsewhere across an array of industries to automate a host of back-office tasks. The incremental improvement of models from learned behaviour, along with the arrival of big data and computer processing power advancements, have all played their part in the release of generative AI.

Nonetheless, there have been two major surprises this year. The first is the speed of consumer adoption. In 2006, it took Twitter[5] nearly two years to reach one million users; in 2010 it took Instagram two and a half months; for ChatGPT, it took just five days, with the service reaching 100 million users in a then groundbreaking two months – at the time, the fastest adoption of any technology in history.[6]The second, and arguably more significant, surprise is the lack of barriers to entry to run AI code. The general assumption up until now, which we shared, was that large incumbents developing AI models would dominate given their economic moats: cloud expertise, computing power, and massive stores of proprietary data – not to mention they have invested enormous amounts of capital to refine their AI capabilities. However, this doesn't appear to be the case. New large-scale, open-source models based on readily available application programming interfaces (APIs) are public; anyone with a good level of coding knowledge can adapt and redistribute the data architecture to satisfy their own specifications without requiring the large computational power and storage space normally necessary to run these. While this has advantages from a consumer perspective – (including access to customisable AI models at far lower cost), for corporates, the barrier to entry for trialling code has reduced to one person with a laptop. The moat seems not to be the AI technology itself, but rather other elements of the business model – for instance, access to proprietary data, customer base or the ability to provide services at scale.

The shovelers

As in previous tech cycles, the early winners of the "AI gold rush" have been the pick and shovel sellers, notably the semiconductor providers. A California-based chip designer, a leader in the graphic processing units (GPUs) that power AI applications, gained nearly $200 billion of market capitalisation in one day on powerful forward guidance. The other obvious shovels are the "hyperscalers" – cloud computing service providers – who are responsible for the infrastructure necessary for generative AI deployment, notably vast amounts of storage capacity and processing power. A global technology and software company commented that it is expecting AI-related products to boost its cloud computing platform growth by one percentage point from next quarter, with a current revenue run-rate of circa $600 million. A further category of shovels is those offering AI services to customers; for instance, a multinational technology conglomerate incorporating its conversational AI tool into its search engine, though this is triggering some cost concerns, or a global technology and software company offering its AI tool within its software product family, creating a first draft for users to edit within its word processing software or enabling faster clearance of emails within its email software.

Identifying the opportunities…

While the full impact of AI remains ambiguous, here are our early thoughts through the lens of our investment approach and the stocks we own. Away from the technology-based shovelers, many of our companies already have a healthy degree of AI exposure, with further opportunities particularly in terms of cost reduction and value creation.

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3 Source: FactSet
4 Meta, Apple, Nvidia, Amazon, Microsoft, Alphabet, Tesla. As of June 30, 2023, the Fund did not hold any of these names.
5 Not held in the portfolio as of June 30, 2023.
6 As of June 30, 2023. Data cited in https://ai.plainenglish.io/chat-gpt-achieving-100-million-users-in-just-2-month-a-deep-analysis-a453e6f85acf

- ***Process improvement/cost reduction:*** AI presents clear opportunities for cost reduction as existing processes get automated, particularly rules-based functions. Much of this is not new. A leading premium spirits company we own has already incorporated AI to optimise its decision making, production and distribution process and appears to be three to five years ahead of peers in terms of technology implementation. Broadly, the generative AI revolution should help content creation in customer operations, sales and marketing, and software development by sharply reducing the quantity of human inputs. This is not to say these functions will necessarily become obsolete: the nuance and depth that comes with human input will likely still be needed in some capacity. In its current form, generative AI may be great at finding and summarising information embedded in websites – but should probably not yet be trusted with any complex legal agreements.
- ***Value creation:*** As well as reducing costs, AI enables companies to improve the quality of their services and product offering. Companies with large proprietary datasets across an array of industries may be able to use AI to run more effective and efficient data analysis to deepen their moats. In the health care industry, AI presents the possibility of improved capabilities in patient diagnostics and the optimisation/automation of a number of parameters in the drug discovery process. Meanwhile, for consumer brands, AI can enhance the customer experience through virtual offerings and personalised advertising. The world leader in beauty we own has developed a system that analyses popular trends online to tailor their products in line with emerging trends and preferences. Overall, it is early days for the technology, so the most exciting developments may well turn out to be ones beyond our current imagination.

With an eye on the threats

In addition to where the opportunities lie, we are also focused on how change might adversely affect the companies we own. As ever, we worry about potential downsides more than we get excited by potential upsides.

- ***Customer automation risk:*** As mentioned above, AI should be able to help corporates cut costs by automating a range of rules-based and back-office tasks. This is a potential downside if a company's model depends on supplying services that get automated, for instance operating call centres, or on supporting personnel that may be automation targets, such as offering a data product to junior lawyers. IT services companies will need to generate enough high-value expertise-based work to compensate for any losses for automation.
- ***Disruption risk:*** AI will likely disrupt existing business models. AI's ability to accelerate the writing of code may provide extra competition for software providers for instance. This threat requires constant vigilance as the technology evolves, and we are closely watching our holdings' proprietary data sources in case AI generates viable alternatives.
- ***Legal and regulatory risks:*** It is still early days for generative AI adoption, and as such regulatory and legal frameworks are very underdeveloped. The issue of patent and copyright is a central issue, as models are being trained on intellectual property without any compensation to the owners. In addition, there remains the risk of hallucinations, whereby input data is reconfigured or learned in such a way that is factually inaccurate. More significantly, there is the worry about AI embedding discriminatory "black-box" algorithms into processes. Credit scorers are already using AI code to make business and operational improvements but will not be using it to apply credit scores due to bias risks. In general, regulation may choke off innovation and the ability to create value, particularly if global companies are only able to progress at the speed of regulation in the slowest geography.
- ***Disappointment risk:*** Aside from AI hurting companies' future earnings, there is potential risk to valuations if the current excitement dissipates. Gartner's hype cycle has five phases when it comes to emerging technologies: the upwards curve of the Technology Trigger and the Peak of (Inflated) Expectations, followed by the slump into the Trough of Disillusionment before the gradual recovery into the Slope of Enlightenment and the Plateau of Productivity.[7] The risk is that as we approach the peak of expectations, a trough may not be far behind…

Compounding through the hype

At the end of 2021, we were worried about both multiples and earnings. Following the derating during 2022, our multiple anxieties faded, just leaving us worried about earnings. The last three quarters have put both concerns back on the table, with the MSCI World Index's forward earnings multiple back up to 17.0x, a level never reached between 2003 and 2019, while the multiple of the information technology sector at 27.4x is now worryingly close to its COVID-era highs.[3]

This elevated multiple is not on depressed earnings, with expected margins still close to all time peaks, and consensus earnings expected to be flat this year before rising 10% in 2024,[3] despite all the worries about a potential recession. It is true that the U.S. economy has proved more robust than expected, but the downside of that is that labour markets remain very tight, meaning that a continued monetary squeeze is required to get inflation down. Our view is that any resultant downturn is not in today's earnings expectations… nor in the current multiple. We maintain that the world is an asymmetric place, with earnings downsides in bad times far higher than the upsides in good times. Our bet, as ever, is that pricing power and recurring revenue, two of the key criteria for

3 Source: FactSet
7 https://www.gartner.co.uk/en/methodologies/gartner-hype-cycle

inclusion in our portfolios, will once again show their worth in any downturn, and the market will once again come to favour companies which have resilient earnings in tough times.

Ultimately, it's still early days for generative AI, and its full impact remains unclear. Which industries and companies will thrive and whose business models will be made redundant? What does employment, education, health care, finance, consumption, and politics look like in an AI world? What does copyright mean in a machine-generated world? Will regulation be fast and sensible enough to put guardrails in place without hindering progress? Whose advice can we trust? Whose image is real? Does the world get smaller, faster, and even more personalised? Does it become more unequal? And what becomes of the artisanal craft of the bottom-up fundamental portfolio manager?

Our team has been exploring new datasets and developing automation tools for some time, keeping an eye out for any valuable signals from sentiment or NLP analysis of earnings calls. We remain front-footed about innovation and yet steeped in a tradition of research excellence and management evaluation. We have yet to abandon deep research on the sustainability of return on operating capital, team-based debate, absolute risk management, or human judgement. We trust in our team's experience and have no intention of replacing human expertise with bots when constructing portfolios or servicing clients any time soon – the outcomes and our clients are too important for that.

Glossary

- ***ChatGPT:*** AI chatbot, Chat Generative Pre-Trained Transformer, using natural language processing, a neural network machine learning model and transformer to pull from significant data to predict a text response.
- ***Narrow/Weak AI:*** AI we typically experience in our day-to-day lives performing a single task or a set of closely related tasks, e.g., weather apps, digital assistants.[8]
- ***General/Strong AI:*** where sentient machines emulate human intelligence, thinking strategically, abstractly and creatively, with the ability to handle complex tasks.[8]
- ***Generative AI:*** describes algorithms (such as ChatGPT) that can be used to create new content, i.e., code, images, etc.[9]
- ***Large Language Models (LLMs):*** a deep learning model trained on a vast volume of datasets that understands and performs tasks in a human-like fashion.[10]
- ***Machine Learning (ML):*** a way of developing AI through models that can "learn" from data patterns without human direction i.e., Large Language Models (LLMs).[9]
- ***Natural Language Processing (NLP):*** a branch of AI within computer science that focuses on helping computers to understand the way that humans write and speak.[11]

Fund Facts

Inception Date	August 04, 1989
Minimum Initial Investment ($)*	A Shares - 1,000
	I Shares - 1,000,000
Benchmark	MSCI EAFE Index
Class I expense ratio	**Gross 1.03 %**
	Net 0.95 %
Class A expense ratio	**Gross 1.26 %**
	Net 1.26 %

Where the net expense ratio is lower than the gross expense ratio, certain fees have been waived and/or expenses reimbursed. These waivers and/or reimbursements will continue for at least one year from the date of the applicable fund's current prospectus (unless otherwise noted in the applicable prospectus) or until such time as the fund's Board of Directors acts to discontinue all or a portion of such waivers and/or reimbursements. Absent such waivers and/or reimbursements, returns would have been lower. Expenses are based on the fund's current prospectus.

8 https://www.accenture.com/gb-en/insights/artificial-intelligence-summary-index
9 https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-generative-ai
10 https://machinelearningmastery.com/what-are-large-language-models/
11 https://www.ibm.com/topics/natural-language-processing
***** Share class availability may vary by platform. For more information, please visit the specified fund page on the website.

Performance (%)

As of June 30, 2023	MTD	QTD	YTD	1 YR	3 YR	5 YR	10 YR
Class I Shares at NAV	4.11	3.26	14.66	19.05	6.65	3.81	4.61
Class A Shares at NAV	4.07	3.21	14.40	18.70	6.38	3.53	4.28
Class A Shares (With Max 5.25% Sales Charge)	-1.43	-2.19	8.39	12.50	4.49	2.41	3.72
MSCI EAFE Index	4.55	2.95	11.67	18.77	8.93	4.39	5.41

Performance data quoted represents past performance, which is no guarantee of future results, and current performance may be lower or higher than the figures shown. For the most recent month end performance figures, please visit morganstanley.com/im. Investment returns and principal value will fluctuate and fund shares, when redeemed, may be worth more or less than their original cost.

Returns are net of fees and assume the reinvestment of all dividends and income. They are compared to an unmanaged market index. Returns for less than one year are cumulative (not annualized). Performance for one year or more is based on average annual total returns. The returns are reported for Class I and A shares. Performance for other share classes will vary.

RISK CONSIDERATIONS

There is no assurance that a Portfolio will achieve its investment objective. Portfolios are subject to **market risk** , which is the possibility that the market values of securities owned by the Portfolio will decline and that the value of Portfolio shares may therefore be less than what you paid for them. Market values can change daily due to economic and other events (e.g. natural disasters, health crises, terrorism, conflicts and social unrest) that affect markets, countries, companies or governments. It is difficult to predict the timing, duration, and potential adverse effects (e.g. portfolio liquidity) of events. Accordingly, you can lose money investing in this strategy. Please be aware that this strategy may be subject to certain additional risks. **ESG strategies** that incorporate impact investing and/or Environmental, Social and Governance (ESG) factors could result in relative investment performance deviating from other strategies or broad market benchmarks, depending on whether such sectors or investments are in or out of favor in the market. As a result, there is no assurance ESG strategies could result in more favorable investment performance. In general, In general, **equities securities'** values also fluctuate in response to activities specific to a company. Investments in **foreign markets** entail special risks such as currency, political, economic, market and liquidity risks. Investments in **small- and medium-capitalization** companies tend to be more volatile and less liquid than those of larger, more established, companies. The risks of investing in **emerging market** countries are greater than risks associated with investments in foreign developed markets. **Derivative instruments** can be illiquid, may disproportionately increase losses and may have a potentially large negative impact on the portfolio's performance. **Illiquid securities** may be more difficult to sell and value than publicly traded securities (liquidity risk).

INDEX INFORMATION

The **MSCI EAFE Index (Europe, Australasia, Far East)** is a free float-adjusted market capitalization index that is designed to measure the international equity market performance of developed markets, excluding the US & Canada. The term "free float" represents the portion of shares outstanding that are deemed to be available for purchase in the public equity markets by investors. The MSCI EAFE Index currently consists of 21 developed market country indices. The performance of the Index is listed in U.S. dollars and assumes reinvestment of net dividends.

The **MSCI World Index** is a free float adjusted market capitalization weighted index that is designed to measure the global equity market performance of developed markets. The term "free float" represents the portion of shares outstanding that are deemed to be available for purchase in the public equity markets by investors. The performance of the Index is listed in U.S. dollars and assumes reinvestment of net dividends.

The **Standard & Poor's 500® Index (S&P 500®)** measures the performance of the large cap segment of the U.S. equities market, covering approximately 80% of the U.S. equities market. The Index includes 500 leading companies in leading industries of the U.S. economy.

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