

# INVESTMENT RISK & ANALYTICAL SERVICES QUARTERLY DIGEST

Spring is in the air and notwithstanding some delays, the roadmap for lifting COVID restrictions has been laid out across many countries, providing some optimism following the toughest of winters. If all goes to plan and vaccination programs are rolled out uninterrupted, we could see societies and economies opening again by mid-summer/early autumn.

Looking to preserve this good feeling, the Q2 IRAS Digest is here to deliver topical and stimulating insights.

First up is a fascinating look into irrational behaviour and biases as they relate to investment decision-making. Being aware of these often sub-conscious impulses and employing a logical, disciplined approach to investment decisions could help improve investment performance.

Our next article focuses on asset allocation. We discuss the principles of asset allocation in investment strategy, and how it can be measured and analysed using IRAS tools and reporting.

The third article announces an exciting development within Data Direct, which now offers access to accounting data through the MS Excel API; this allows users to extract accounting data alongside performance as a streamlined alternative to accessing it through Institutional Investor Passport.

To close, we have our usual round-up from the various IRAS teams, including an update from Performance and further details on our Environmental, Social and Governance (ESG) reporting capabilities.

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## BEHAVIOURAL FINANCE: THE PSYCHOLOGICAL INSIGHT

*By Nnenna Nwoke, Investment Performance Consultant, EMEA*

I have some questions.

Do you consider yourself a rational person? What motivates your situational response? Do you react logically or impulsively? Do you form decisions based on surrounding influences?

Considering the current pandemic onset, what were your initial reactions? Did they flitter from incredulity, scepticism and denial to worrying thoughts of anxiety and concern?

How we react to news can be influenced by various factors ranging from cognitive and emotional to social settings. Reactions to news affecting investment strategies are also worthy of further consideration. The notion that stocks readily

reflect available market information, which is rapidly disseminated and reflected in the security price, is referred to as the Efficient Market Hypothesis (EMH).

The efficient market hypothesis suggests two implications; firstly, that the security price reflects the true or intrinsic value, as it contains all information available to investors – and secondly, that active returns are difficult to achieve, as it would require exclusive insight, which is difficult to attain in a highly competitive market. However, various investment strategies do provide abnormal returns suggesting pricing anomalies and capital market inefficiencies to the EMH theory.

Whereas conventional theories presume investors are perfectly rational decision-makers, behavioural finance assumes investors are in fact irrational, and influenced by their own behavioural tendencies and biases.

The school of thought addressing the anomalies is that an investor's behavioural response to market information can have a profound impact on security prices. Behavioural tendencies and biases to processing market information can be regarded as an integral factor within a security's price, thereby helping to explain pricing anomalies. Individuals making quick and complicated decisions will follow varied rationale. This is the subject of behavioural finance, which explores the psychological influences on investing.

Whereas conventional theories presume investors are perfectly rational decision-makers, behavioural finance assumes investors are in fact irrational, and influenced by their own biases. These behavioural irrationalities applied within the financial market might result in some of the market pricing anomalies, and deviation from an efficient capital market.

### Behavioural Irrationalities

The premise of behavioural finance highlights where conventional theory ignores how real people make decisions and its impact. We will consider how decision making can be plagued with informational processing errors, leading investors to misestimate true return probabilities and behavioural biases where investors frame questions leading to characterised irrationalities.

### Information Processing

- **Forecasting Errors:** Also referred to as memory bias, this explains how, when producing forecasts, a recent experience will take precedence in decision-making, despite its inherent uncertainty compared to prior confirmed indicators – resulting in overinflated forecasts. Where a firm's future earnings forecasts are too high due to a favourable recent performance, optimism is built into the share price, resulting in an initially high price-to-earnings ratio and poor subsequent performance once the error is recognised.
- **Overconfidence:** This is the tendency to overestimate one's ability and the precision of forecasts and supportive indicators. Overconfidence bias has been attributed to the comparatively larger active versus passive investment management strategies and EMH pricing anomaly.
- **Overreaction:** Occurs when certain information is overreacted to in a way that is disproportionate to the actual impact of the news.
- **Conservatism:** Refers to slow or conservative responses to updating an investor's position in response to new information. For example, recent news relating to a company's performance will gradually reflect in the share price as investors initially underreact. Such a bias would give rise to momentum in market returns.

- **Representativeness:** This is where the sample size is not taken into account (also known as sample size neglect), as it is assumed it is representative of the population size. Trends are extrapolated from patterns in the sample size and used as inferences for future outcomes. For example, a brief high earnings report or exceptional returns lead to revising an investor's perception and generating share price buying pressure. The gap between the assets intrinsic value and price widens until the market corrects the initial error. This informational processing error is also consistent with overreaction and correction anomalies.

### Behavioural Biases

- **Framing:** Decisions are affected by how the information is presented or framed. Individuals may act risk averse towards potential gains but risk-seeking towards potential losses. As an example, an investment may be rejected when framed with the risk surrounding potential gains but may be accepted when described with the risk surrounding potential losses. Consequently, investment decisions may be made differently depending on how the opportunity is presented.
- **Mental Accounting:** A specific form of framing where relatable decisions are segregated. An investor may take on considerable risk with one investment account but establish a conservative position in another although both accounts belong within the overall portfolio.
- **Loss Aversion:** Refers to the tendency of investors to focus more on avoiding risk rather than generating comparable profits. While traditional finance theories assume investors are risk averse, the behavioural loss aversion bias infers that the dissatisfaction from a loss outweighs the satisfaction from a gain of the same magnitude.
- **Regret Avoidance:** Studies have found that individuals who make decisions that turn out badly express more regret if it was an unconventional decision. For example, an investor in a FTSE100 stock that performs poorly is less regretful than if the same losses were in an unknown venturing company.
- **Herding:** Occurs when an investor ignores their own information or empirical analysis and blindly imitates what the larger group are doing. Emotional influence takes precedence rather than independent analysis.
- **Confirmation:** The idea that an individual will actively seek information and data confirming pre-existing ideas rather than acknowledge contrary evidence.
- **Self-Serving:** The likelihood to attribute positive outcomes to skill or an individual's best interest while a negative outcome is down to bad luck.
- **Anchoring:** Occurs where there is reliance on pre-existing or initial information when making a decision.

### Evaluating Behavioural Analysis

Psychological influence on an investor's behaviour and cognitive decision-making process can be factored at the point of an investment decision, and can have subsequent effects on the financial markets. There is critique concerning the strength of these behavioural biases; some argue the biases are unstructured and can become exhaustive, allowing any efficient market anomaly to be explained by a conceived combination of irrationalities, and are therefore insufficient to fully affect asset prices. Fundamentally, critics are interested in considering a unified behavioural theory that can explain a range of behavioural anomalies and their impact.

## Conclusion

Traditional finance theories contend all investors are rational, and function in an efficient financial market where excess returns are difficult to attain as asset prices reflect available market information.

Behavioural finance refers to investors as potentially irrational, or at least biased, decision-makers, and contributes explanation for efficient market anomalies. These psychological biases should not be viewed in isolation, as they are likely to be influenced by a full range of demographics. The psychological study of investor behaviour in finance is a growing and relevant concept in investment measurement.

Behavioural biases can be reduced by establishing a logical investment decision-making process, undertaking fundamental research and by adhering to a disciplined investment strategy.

Of course, behavioural biases can be avoided when managing client affairs by establishing logical decision-making processes, and applying fundamental analysis and discipline towards strategies so as to prevent emotionally biased influences, such as loss aversion. I will close the article with a relevant quote from a co-author of a New York Times best-selling book on behavioural finance:

“The irony of obsessive loss aversion is that our worst fears become realized in our attempts to manage them.”

– Daniel Crosby

### For further background:

- *Investments – Bodie, Kane, Marcus. 7th edition, ISBN 9780071263108*
- *Equity and Fixed Income – CFA Level 1 Volume 5, ISBN 9781942471011*
- Corporate Finance Institute, <https://corporatefinanceinstitute.com/resources/knowledge/trading-investing/behavioral-finance>, March 2021.
- <https://www.endowmentwm.com/15-great-quotes-about-behavioral-finance/> EWM Team, February 13, 2014.

## ASSET ALLOCATION ANALYSIS USING NORTHERN TRUST PERFORMANCE TOOLS

By Asha Y S, IRAS Associate, EMEA



In this article, we will explore some of the analysis commonly used in assessing asset allocation, and review how IRAS reporting tools can help our clients.

Asset allocation is the process of deciding how an investment portfolio should be distributed across different asset classes. There is no simple formula that can find the right asset allocation for every individual. However, the consensus among most financial professionals is that asset allocation is one of the most important decisions that investors make, and a principal determinant of one’s investment results.

The investment strategies of institutional investors differ significantly across countries. Asset allocation is influenced by a variety of factors, such as market trends, investment beliefs, regulations, risk appetite, liability considerations, cultural factors, governance structures and tax issues. Traditionally, institutional investors have been seen investing in two main asset classes – equities and bonds– however, over the last decade there have been major shifts in investment strategies.

In particular, there has been a decline in allocation to listed equities, while investments in bonds and alternative asset classes have increased substantially.

The 2020 economic downturn is likely to have a lasting impact on the fund management industry and the long-term asset allocation strategies of institutional investors; on one hand, in promoting more cautious investment strategies and a greater focus on portfolio risk management. On the other hand, the prolonged low-yield environment has heightened the need for return-enhancing strategies, pushing some investors to invest in alternative assets.

Analysing the asset allocation and amending it constantly plays a vital role in achieving financial goals. Each asset class has different levels of risk and return and different degrees of correlation. One asset may be increasing in value, while another may be decreasing or increasing at a different rate. It is often more important to select the best performing asset class than to select the best performing securities within each asset class – what is referred to as a ‘top-down’ approach to investing. By including assets that exhibit low correlation with other assets, an investor can protect a portfolio from significant losses. Falling returns in one portfolio can be counteracted by better results in another portfolio.

Investors may diversify their investment across a range of asset classes by using one of the following three widely accepted approaches:

**Figure 1: Asset Classes and their Respective Subclasses**



Source: Della Croce, R and J.Yemo (2013)

1. **Strategic Asset Allocation** – Refers to the long-term allocation of an investment portfolio based on the investor’s goals and tolerance of risk. Clients opting for this strategy often keep their base policy mix unchanged, even when the markets move up or down, and rebalance only when there is significant deviation from the initial allocation due to differing returns.
2. **Dynamic Asset Allocation** – This process allows investors to adjust the efficient frontier in response to change in market conditions. Investors might revisit their expectations based on changes in inflation, credit and risk premiums or returns on other comparable assets.
3. **Tactical Asset Allocation** – This refers to a dynamic strategy that involves making short-term adjustments to a portfolio’s strategic allocation, in order to take advantage of a particular investment opportunity – especially when investors are convinced that a particular asset is overvalued or undervalued. The strategy attempts to add value by overweighting asset classes that are expected to outperform in the short-term, and underweighting those expected to underperform.

IRAS performance tools, including RADAR and the monthly and quarterly performance reporting services, provide allocation details at a granular level, helping to analyse the impact of asset allocation decisions.

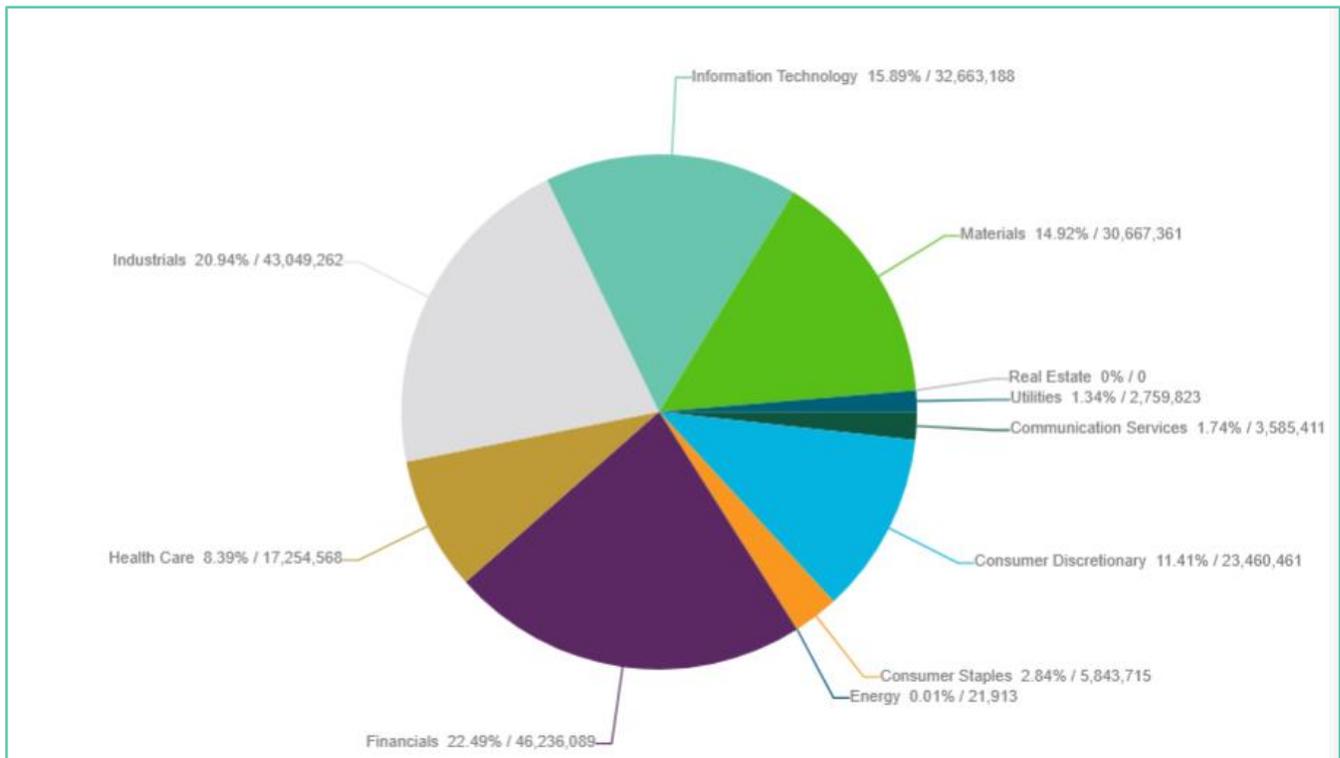
**Asset Allocation – Fund/Scheme Level**

Asset classes can be viewed and analysed at fund/scheme level, including market value data and the percentage of investment in each asset class. The details can be viewed on a daily or monthly basis. There is also the option to drill down to sub-groups within a specific asset class.

**Asset Allocation – Region & Sector**

The below RADAR exhibit is designed to show regional or sector allocation for the portfolio at each manager level, with the percentage allocation in each category, country or region. This can inform decision-making in terms of investing or disinvesting in a specific asset class based on past performance. The returns earned over increasing time periods can also be viewed in different graphical formats.

**Figure 2: Sector Allocation and Performance (Pie Chart)**



Source: RADAR, Northern Trust, 31/12/2020

**Asset Allocation over Time**

Figure 3 below is taken from Northern Trust's performance reporting package. It provides the percentage weight allocated to each asset class and shows how this has changed over a specific period of time. The example below also illustrates the deviation from pre-determined policy target weights, which is useful in terms of monitoring the portfolio and could be used to highlight allocation drift.

In our example, the allocation to public equities has consistently fallen below the target and is currently more than 5% below the target weight of 35%, which could indicate a need to rebalance the portfolio. By contrast, this portfolio has been designed to be a fully-invested portfolio with a zero allocation to cash, but the portfolio’s cash balance has been as high as 9% (June 2018). However, this has fallen over time and now sits at 0.6%.

Figure 3: Monitoring Asset Allocation and Divergence from Target Weights



Source: Northern Trust, 31/12/2020

### Contribution by Asset Class

In addition to asset allocation details, Northern Trust’s performance reporting analyses the performance of each asset class or region, and its contribution to the portfolio’s overall return. Contribution to return can decompose that return to illustrate which sector did or did not contribute positively to the total. Therefore, monitoring contribution is an effective way of identifying which asset classes are organically growing or shrinking within the portfolio compared to the portfolio’s strategic targets.

In Figure 4 below, emerging market debt has performed well, contributing 0.38% to the overall monthly return of 1.4% (excluding overlay and liability-driven investment). If this trend were to continue, and depending on how strictly the asset allocation strategy is applied, the investment manager may decide to rebalance the portfolio by bringing the emerging market debt exposure back down. Similarly, the relatively low weighting in United Kingdom (UK) equity, which has performed very well, may indicate a decision to increase the allocation target if the manager believes there is momentum in this market.

**Figure 4: Policy Contribution Analysis**

NORTHERN TRUST		RADAR		
Policy Contribution - Exhibit Time Period		Demo Fund EMEA		
Demo Fund EMEA - 1 Mo.		Dec 2020		
Time Period: 1 Mo.				
Policy Contribution Detail				
Group/Account	Average Weight	ROR	Contribution	
▼ Demo Fund EMEA	100.00	2.74	2.74	
▼ Total Excluding LDI	68.14	2.24	1.40	
▼ Total Excluding Overlay ex LDI	67.88	2.06	1.40	
UK Equity Manager	2.45	5.60	0.14	
Europe ex UK Equity Manager	9.76	1.38	0.13	
Asia Pacific Manager A	4.55	3.73	0.17	
Emerging Markets Manager A	0.82	4.95	0.04	
Global Equity	14.92	1.43	0.21	
Emerging Market Debt	9.66	3.93	0.38	
Credit	0.00	--	0.00	
Global Active Fixed Income Mgr	0.00	--	0.00	
Bond Fund	17.35	1.50	0.26	
Private Equity Investment	0.13	0.00	0.00	
Hedge Funds Manager A	0.00	0.00	0.00	
Cardano (Derivatives)	0.00	--	0.00	
Synthetic Equity	0.00	--	0.00	
Global Fixed Income Manager	8.23	0.80	0.07	
Overlay	0.26	1.77	0.00	
LDI	31.86	3.82	1.22	

Source: RADAR, Northern Trust, 31/12/2020

In summary, a successful asset allocation strategy requires a balance between risk and return, where return is maximised for a specified level of risk. A mixture of asset classes, incorporating a blend of risk profiles carefully selected dependent on their correlation, allows an investor to reduce risk through diversification.

Asset allocation is not a one-off event; it's an ongoing process of fine-tuning that should be diligently monitored to ensure tactical and dynamic investment decisions are suitably appraised and consider whether longer-term, strategic targets remain suitable. Northern Trust's range of performance measurement and analytical tools can be used to build, evaluate and implement an asset allocation strategy – ultimately ensuring investment results can be achieved.

For further information on how IRAS can help facilitate, monitor and interpret your asset allocation strategy, please contact your IRAS representative.

**For further background:**

- Della Croce, R and J.Yemo (2013), "Institutional Investors and Infrastructure financing", OECD Working paper on Finance, Insurance and Private pensions.

## DATA DIRECT: ACCESS TO ACCOUNTING DATA

By Niraj Sharma, Associate Consultant, Investment Performance



Data Direct is an interactive Microsoft Excel add-in programme that enables an intuitive excel application programming interface (API) query to retrieve performance and accounting data from Northern Trust. The data can then be used to directly populate Excel spreadsheets and pre-formatted factsheets, avoiding the need to manually copy data. This data can then also be consolidated with data from other sources.

Data Direct automates the extraction of varied data sets, making updating a report as easy as changing the date in one cell, then clicking a button to refresh the data.

Northern Trust originally developed the Data Direct Excel add-in tool for our investment performance clients, launching it in 2010. Since then, there have been many enhancements, increasing the breadth of performance metrics available and building out a set of accounting-driven valuation datasets.

### Accounting Data Service in Data Direct

Northern Trust is continually looking to improve and expand the data available to our clients; one of our recent developments has been to make valuation data available through Data Direct.

Accounting Data Service allows users to extract accounting data alongside their performance data through Data Direct, independently of Institutional Investor Passport.

Figure 1: Accounting Datasets available in Data Direct

Accounting - General Ledger Reporting	Accounting - Source and App with Performance
Accounting - Holdings Reports	Accounting - PE and AF Reports
Accounting - Taxable Reports	Accounting - Queries
Accounting - Transactional Reports	Fund Accounting

Source: Data Direct, Northern Trust

This service draws granular valuation data directly into Excel and can be set at sponsor level or portfolio level. The reporting is extensive and includes asset level valuations, income and expense, price detail report, and more, across all accounts. The table below displays all templates available within Accounting Services in Data Direct.

*Do you have feedback or suggestions for future editions? If so, we'd love to hear from you, please [click here](#) to leave comments.*

Figure 2: Templates available within Accounting Services in Data Direct

General Ledger Reporting	Transactional Reports	Taxable Reports
Asset and Liability Detail	Capital Change Detail	Income Received/Receivable Detail
Asset and Liability Detail Bid/Ask	Cash Activity Detail	Fixed Income Amortization
Income and Expense Detail	Funding and Disbursement Detail	Realized Gain/Loss Detail
Change in Unrealized Gain/Loss	Income and Expense Detail	Expense Detail
Realized Gain/Loss Summary	Investment Transaction Detail	Investment Transaction Detail
Investment Transaction Detail	Pending Transaction Detail	Realized Gain/Loss Taxable
Pending Transaction Detail	Purchase Interest	<b>Accounting - Queries</b>
Capital Change Detail	Transaction detail by Security	Position Query
Funding and Disbursement Detail	Foreign Exchange Gain/Loss Detail	Bid/Ask Position Query
<b>Holdings Reports</b>	Change in Book and Market Value	Taxable Position Query
Price Detail Report	Standard Transaction Download	Transaction Query
Asset Detail by Account	Cash Activity and Projected Balance	<b>Fund Accounting - Queries</b>
Historical Collateral Balances	<b>Private Equity and Alternative Fund</b>	Position Report
Security Location by Asset	Holdings Reports	Transaction Report
Standard Holdings Download	Transactional Reports	Valuations Data Report

Source: Northern Trust, 31/12/2020

Below are some examples of the output sourced from Data Direct:

1. Asset and Liability Detail template: The template supplies the Market Value, Cost Value, Unrealized Total Gain/Loss etc. Adding to the below, there are additional outputs, such as Currency Code, Asset/Liability Indicator, Country of Incorporation etc.

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Figure 3: Asset and Liability Detail template

*Account / Consolidation ID	*As of Date	*Reporting Type				
DEMO	31/12/2020	Periodic				
Security Description	Market Price	Market Value	Book Cost Value	Accrued Income/Expense	Share/Par Value	Asset/Liability Indicator
BANK OF AMERICA CORP	20.21	10,429,114.18	2,923,400.98	70,800.00	650,000.00	A
ACCENTURE PLC SHS CL A NEW	261.21	19,722,777.55	9,214,902.56	0.00	113,700.00	A
AON PLC	211.27	17,487,077.80	3,563,917.77	50,110.00	108,000.00	A
CISCO SYSTEMS INC	44.75	13,710,956.05	6,733,140.66	0.00	440,000.00	A
CATERPILLAR INC COM	182.02	7,934,465.01	1,088,911.93	0.00	70,000.00	A
BANCO BPM NPV	1.81	26,149.62	1,803,181.56	0.00	40,155.00	A
ADIDAS AG	297.90	13,277,438.24	1,123,829.98	0.00	40,000.00	A
AAK AB NPV	166.00	684,345.45	672,074.26	0.00	45,000.00	A
British pound sterling	1.00	-38,507.48	-38,507.48	0.00	-38,507.48	L
British pound sterling	1.00	177,003,221.91	177,003,221.91	0.00	177,003,221.91	A
British pound sterling	1.00	7,359,641.94	7,359,641.94	0.00	7,359,641.94	A
British pound sterling	1.00	-1,030.38	-1,030.38	-1.69	-1,030.38	L

Source: Data Direct, Northern Trust, 31/12/2020

2. Price Detail Report: The templates supply asset level price, shares, and market value across the sponsor level. Adding to the below, there are additional outputs, such as Price Date, Price Source, Issue Type etc.

Figure 4: Price Detail Report

*Account / Consolidation ID	*As of Date	*Reporting Type			
DEMO	31/12/2020	Periodic			
Asset Description	Market Value Base	Accrual	Country of Risk	Market Price	Share/Par Value
ADIDAS AG	6,814,904.92	0.00	Germany	299.45	5,247.00
ADOBE SYS INC COM	24,137,969.02	0.00	United States	501.67	13,288.00
AEON CO LTD NPV	2,004,610.93	0.00	Japan	3,386.55	17,125.00
AGC INC NPV	802,641.13	13,179.65	Japan	3,601.55	6,725.00
AGEAS NPV	1,211,036.33	0.00	Belgium	45.13	6,526.00
HANG SENG BANK NPV	1,540,738.46	0.00	Hong Kong	135.25	25,125.00
HEICO CORP NEW COM	694,113.45	0.00	United States	133.95	1,640.00
HINO MOTORS NPV	354,488.01	0.00	Japan	880.55	12,825.00
HOSHIZAKI CORP	530,085.53	6,187.61	Japan	9,471.55	1,825.00
NEXTERA ENERGY INC COM	15,294,046.81	0.00	United States	78.70	54,245.00
PIONEER NAT RES CO COM	1,806,790.22	9,631.45	United States	115.44	4,546.00
SONY CORP NPV	12,239,456.23	0.00	Japan	10,286.55	33,691.00
STRYKER CORP	8,267,664.86	22,264.94	United States	246.59	9,358.00

Source: Data Direct, Northern Trust, 31/12/2020

Data Direct supports a range of functions, such as reporting and data modelling, that coupled with Excel's native functionality create powerful outcomes. It allows analytical people to access their performance and valuation data securely in the environment they operate in, using an intuitive interface. Investment professionals can use this new service to efficiently monitor valuation, transaction and price movements across their portfolios, and explore the creation of custom reporting to enrich the analysis of their investment process.

For further information on how Data Direct can improve the way you access your data, please contact your Relationship Manager, Passport Consultant or IRAS representative.

*Do you have a colleague or associate that might enjoy this publication? If so, [@click here](#) and we'll include them on future editions.*

## IRAS UPDATES: PERFORMANCE

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*By Scott Douglas, Manager, Investment Performance, EMEA*

**RADAR™** is the tool that Northern Trust clients and performance analysts use to review returns, holdings, attribution, contribution, ex-post risk and Compliance Monitoring results. Access to RADAR™ comes as standard for performance clients; one place for both asset owners and asset managers to analyse their data.

Because RADAR™ is built and maintained by the Northern Trust Digital Product team, we are able to continuously improve the experience and respond to the changing needs of sophisticated investors. In the latest install, we have improved and simplified the filter interface. When selecting the data you wish to review, you will now be able to see the structure of the investment hierarchy. This will make it far easier to see the relationships between nodes within your various structures. All previously set up sorting will still be retained within the filter. Users can also now choose to place lines between metrics and results to easily tie them to each other. New metrics have been introduced to expand on the currency reporting options available, e.g. net flows in local currency and base currency for holdings.

Content continues to be available on both desktop and tablet devices, and can be exported to both Excel and PDF for further analysis or sharing. We are always looking for ways to evolve reporting functions and welcome all feedback from users.

If you are interested in obtaining access either for your team or that of your service provider, please contact your IRAS consultant. Full training and support will be provided subsequent to an authorisation process.

### Scott Douglas

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## IRAS UPDATES: ENVIRONMENTAL, SOCIAL, GOVERNANCE (ESG) SERVICES

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Within Northern Trust's IRAS group, we currently offer two solutions to assist our clients in measuring and monitoring their ESG exposures. These ESG capabilities allow clients to enhance their investment process, improve engagement, promote solid environmental credentials and manage reputational risk.

Within our post-trade Compliance Monitoring service, we offer a screening function to identify breaches of mandated instructions through flagging investments in companies that derive revenue from potentially restricted areas. We support wide-ranging restrictions and sanctions on a company's involvement in certain industries. Categories include alcohol, firearms, labour practices, tobacco, weapons production and a range of country sanctions.

In addition, our ESG analysis offers a quantitative approach to measuring environmental, social and governance in collaboration with a third party data vendor (IdealRatings). Asset owners and their advisors can analyse their ESG credentials relative to a chosen benchmark at a total plan and manager level. The analysis details investment scores and

exposures both across the portfolio and over time, showing the changing profile of invested assets, which alongside performance metrics can tell a powerful story for all stakeholders. The oversight provided can also help to meet regulatory requirements and inform discussions with investment managers about risk exposures and potential opportunities.

If you would like additional information on IRAS ESG services, please contact Avish Singh at [as463@ntrs.com](mailto:as463@ntrs.com) or call on 0207 982 2072.

## IRAS UPDATES: INVESTMENT RISK SERVICES

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Investment Risk Services offers clients innovative solutions to complex risk challenges using sophisticated analytical tools that leverage our experience, global infrastructure and best-of-breed risk engines. We offer clients access to market leading third party risk engines including MSCI BarraOne and StatPro Risk Management.

Our services support multiple perspectives as no single measure provides a complete view of risk. Our risk tools offer multiple asset class coverage coupled with extensive over-the-counter (OTC) derivative modelling capabilities.

Investment Risk Services offers clients timely and accurate analysis using our single global data and technology platform. Our platform is fully integrated across performance, risk and Compliance Monitoring services with direct accounting feeds, which enable seamless data integration. Investment Risk Services enables clients to leverage a cost-efficient risk solution, offering a complete and consistent view of risk across both assets and liabilities from an independent source.

We offer clients a complete risk solution including:

- Ex-Ante Risk Analysis – Benefit from holdings-based, forward-looking risk analysis underpinned by market leading, multi-factor risk models.
- Risk Decomposition – Gain a broad understanding of your risk profile using risk decomposition and trend analysis alongside correlation and diversification benefit analysis.
- VaR Suite – Gain valuable insight into your portfolio using total risk metrics and multiple Value at Risk methodologies, including Parametric, Monte Carlo and Historical Simulation.
- Extensive Stress Testing – Access extensive factor stress testing and custom scenario analysis capabilities to understand the impact of different market conditions on assets and liabilities.
- Liability Modelling – Incorporate liability cash flows and utilise a consistent risk methodology to model both assets and liabilities.
- Style Exposures – Leverage benchmark relative style analysis to highlight key exposures, confirm intended positioning and expose unintended risks.

For further information on how IRAS Investment Risk Services could benefit your portfolio analysis and forecasting, please contact Avish Singh at [as463@ntrs.com](mailto:as463@ntrs.com) or call on 0207 982 2072.

## IRAS UPDATES: POST-TRADE COMPLIANCE SERVICES

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Northern Trust's Compliance Monitoring service is an automated monitoring solution offered to clients on a post-trade basis. Clients can use this service to discover if their investment managers are complying with their investment management guidelines by utilising a monitoring program tailored to their portfolio.

Investment guidelines are monitored on a daily basis at an individual security level and at an aggregate level. We currently monitor more than 6,000 unique rules daily.

Northern Trust provides this service using a proprietary platform comprised of Compliance Analyst®, our powerful automated monitoring system; Compliance RADAR™, our comprehensive breach management and workflow tool; and Integrated Reporting, a comprehensive suite of reports. Compliance Analyst® compares pre-established rules with portfolio holdings on a daily basis, and produces exception-based results when a rule has been breached.

Clients have a choice of two service levels; a shared service or an outsourced service. In both instances, Northern Trust undertakes all rule coding and guideline management within Compliance Analyst®. The shared service means clients are provided with daily monitoring results and are responsible for reviewing and analysing those results themselves using Compliance RADAR™. The outsourced service level is a more advanced service whereby our clients can outsource the entire compliance monitoring function to Northern Trust.

For further information on how IRAS Post-Trade Compliance services could help with your portfolio monitoring and governance, please contact Avish Singh at [as463@ntrs.com](mailto:as463@ntrs.com) or call on 0207 982 2072.

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## IRAS UPDATES: PRIVATE MONITOR

Portfolios containing private equity and other alternative assets require a private equity expert that understands these investments from various perspectives; asset management, administration and servicing. With Northern Trust, you can rely on our experience, excellence and leadership in the global private equity marketplace to support even the most diverse and complex investment programs.

At Northern Trust, we unite our expertise with industry-leading products and tools, including Private Monitor®, which help enable better decisions and better results for our clients. Whatever your requirements, Northern Trust is dedicated to working with you to create solutions to meet your specific immediate and long-term private equity needs.

### Sophisticated Products

Sophisticated institutional investors will find a broad array of private equity products at Northern Trust. You can leverage our system or choose individual tools based on your resources and requirements benefitting from our ability to combine proprietary expertise with innovative tools to create the most useful solutions.

### The Private Monitor® Service

Enable better decision-making with our cutting-edge products and services, such as Private Monitor™, to pursue better results. Private Monitor brings a variety of features to assist with administrative tasks, activity tracking, liquidity analysis and performance and risk management services.

The Private Monitor service allows you to focus on investing while an experienced Northern Trust team manages your data, performance and other needs related to administering a private equity portfolio, using state-of-the-industry tools, techniques and data. Private Monitor can help you manage your programme by providing performance, funding tracking, benchmarking, holdings transparency analysis, risk and liquidity monitoring, and front office tools and capabilities.

Private Monitor can help unlock a portfolio of private markets data – if this is of interest we would be delighted to help. For more information please contact:

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*If you have feedback, suggestions or ideas for future editions, we would love to hear from you, please [@click here](#) to leave your comments.*

## PLEASE CONTACT US:

For more information on any of the topics covered in this edition, or to provide feedback or make suggestions for future editions, please contact your IRAS representative or Liam Nesbitt using the details below.

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*The securities named in this document are for illustrative purposes only and should not be considered recommendations to sell, buy or hold a particular investment.*



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