INVESTMENT STRATEGY RESEARCH

RBC Capital Markets

RBC Capital Markets, LLC

Jonathan Golub, CFA
Chief U.S. Equity Strategist
(212) 618-7634
jonathan.golub@rbccm.com

Patrick Palfrey
Associate Strategist
(212) 618-7507
patrick.palfrey@rbccm.com

Josh Jamner, CFA
Associate Strategist
(212) 618-3312
josh.jamner@rbccm.com

April 18, 2016

In Defense of Active Management

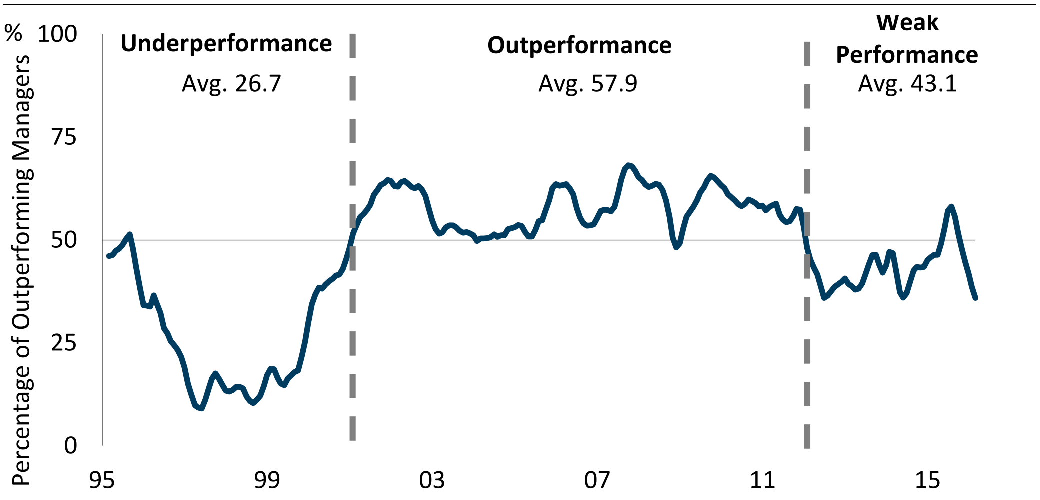
The current recovery is unlike any other in recent memory, with global GDP well below its normal pace and negative interest rates across half of the developed world. From an investment perspective, the environment seems upside down, with expensive stocks outperforming those more reasonably valued and U.S. equities trouncing faster-growing Emerging Markets.

Perhaps unsurprisingly, the majority of Large Cap managers have lagged the S&P 500 over the past several years. This has helped to fuel the successful rise of ETFs and Smart Beta strategies. It has also led to an increase in outflows and fee pressure.

While the unusual nature of the recovery has provided managers with a myriad of explanations for their underperformance, little rigorous work has been done to quantify these linkages. For example, investors regularly point to zero rate policy as a cause of weak results despite little evidence to support this assertion.

Although recent manager underperformance has been disappointing, a review of the data indicates that returns have not strayed from historical norms as much as it might appear. Importantly, the current period follows a spectacular run of manager outperformance from 2001 through 2011—a decade-plus during which 58% of managers surpassed the index, as shown below.

Exhibit 1: Percentage of Managers Beating the S&P 500



Note: Gross performance; rolling 3-year annualized total return; Large Cap managers defined by Morningstar
Source: S&P, Morningstar, and RBC Capital Markets

While history demonstrates that superior investors can add value on both an absolute and risk-adjusted basis, the purpose of this report is to focus on the behavior of the manager universe more broadly. Our research supports two key conclusions: 1) the universe of managers performs roughly in line with the benchmark (before fees) over time; and 2) they successfully manage downside risk, delivering superior risk-adjusted returns.

All values in USD unless otherwise noted.

Priced as of market close March 31, 2016 (unless otherwise stated).

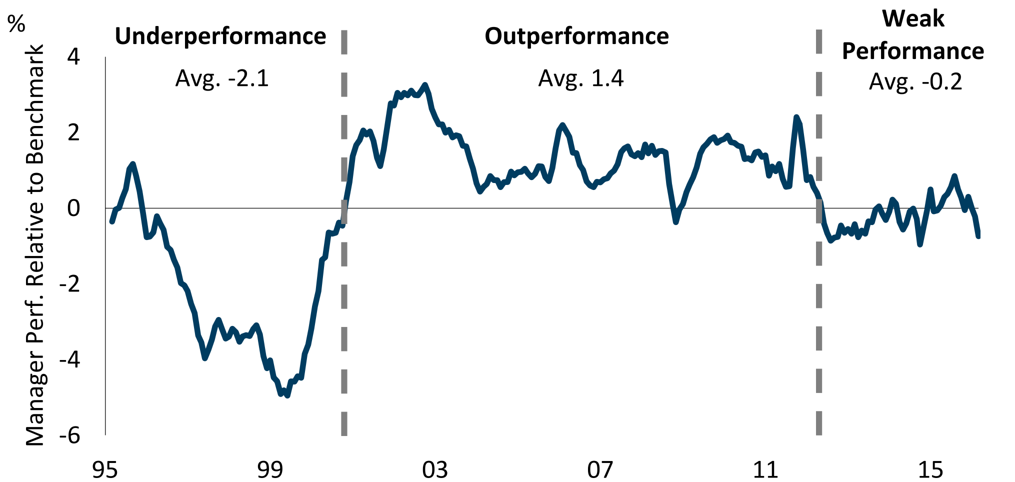
For Required Conflicts Disclosures, please see page 8.

The exhibit on the prior page measures investment success as the likelihood that a given manager tops their benchmark. Perhaps, however, it would be more valuable to calculate their victories directly—via their relative performance. These results are shown below.

Regardless of the measure, what's clear is that manager performance is quite cyclical. Put differently, just as value and growth stocks go in and out of favor, so too does active management. And just like value and growth, the duration of these fertile and fallow periods can be quite extended.

Active management results can deviate quite substantially from their benchmarks for protracted periods of time

Exhibit 2: Large Cap Manager Alpha



Note: Gross performance; rolling 3-year annualized total return; Large Cap managers defined by Morningstar
Source: S&P, Morningstar, and RBC Capital Markets

2001–2011 was an exceptional period of manager performance

Returns have been modestly disappointing over the past several years

The analysis in this report focuses on rolling three-year returns. This avoids the tendency to overemphasize near-term results, such as the 390 bps of underperformance over the past 12 months.

Understanding Manager Behavior

The pattern of manager returns is driven by conflicting risk/return mandates

As shown above, active results can deviate quite substantially from their benchmarks for protracted periods of time. The question is why. If managers collectively hold the stocks in their index, then collectively they should perform in line with passive alternatives. Given this logic, the only explanation for their deviation would be that managers don't perfectly mimic the holdings of their assigned index. This appears to be the case.

The data clearly indicates that there are pronounced and consistent biases that explain the cyclicality of manager returns. Our research suggests that these biases are the result of the conflicting objectives to maximize returns while minimizing risk.

Maximize Returns

In order to outperform their benchmark, investors often go outside of its bounds. In the case of Large Cap funds, this includes holding non-U.S. and smaller cap stocks. While this might appear to be "cheating", it is encouraged by asset owners (clients) who specifically build this flexibility into fund guidelines. As a result, managers are more likely to exceed their benchmark in periods when International and smaller cap stocks lead.

Minimize Risk

Managers add value by delivering favorable risk-adjusted returns

In order for portfolio managers to minimize risk, they must first have a clear and singular set of criteria. While they are judged relative to an index and their peers, they are acutely aware of their clients' discomfort with absolute, downside risk. As a result, managers tend to implement a dual-risk approach that seeks to minimize absolute losses while managing their broader risk profile relative to the benchmark. Put differently, they are incentivized to deliver outperformance in down markets even if this results in weaker performance during periods of strength.

The desire to minimize worst-case outcomes—downside risk—leads them to avoid more speculative stocks and concentrated positions. This proves particularly challenging in environments where the largest or most speculative stocks lead the market. Unfortunately, this is precisely what occurred in 2015.

Periods of strong returns for more speculative companies are challenging for active managers

Exhibit 3: 2015 S&P 500 Return Contribution

%

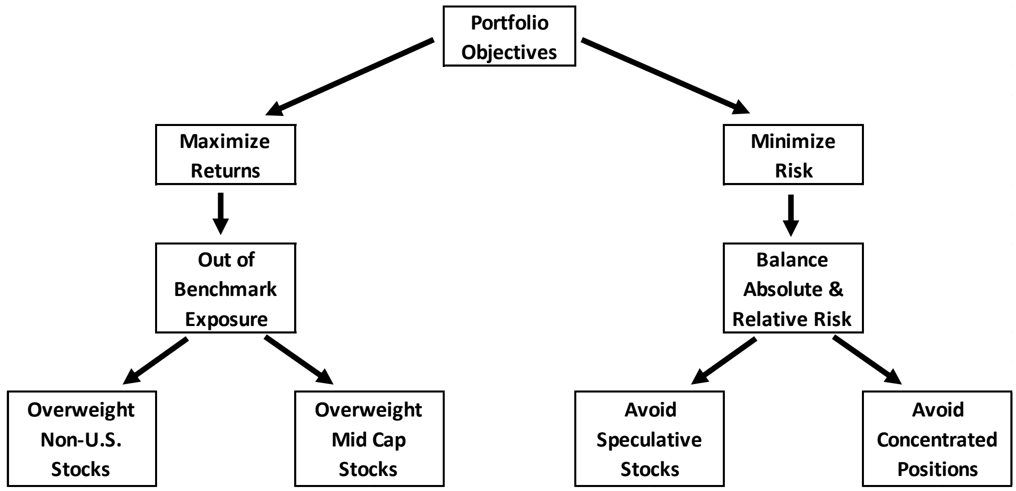
	Largest 50		**Remaining 450**		**All Companies**
Return Contribution by Size	1.0	+	-1.7	=	-0.7
	Fastest 50		**Remaining 450**		**All Companies**
Return Contribution by Growth Rate	0.7	+	-1.4	=	-0.7

Note: Price return; largest companies based on market cap at 12/31/14; fastest-growing companies based on NTM growth at 12/31/14; assumes unchanged basket; remaining return calculated as the difference of market and top 50 returns
Source: S&P, FactSet, Thomson Financial, and RBC Capital Markets

Dueling objectives lead to specific portfolio tilts

The schematic below provides a graphical depiction of the conflicting objectives that portfolio managers attempt to address in their day-to-day activities.

Exhibit 4: Large Cap Manager Risk and Return Objectives



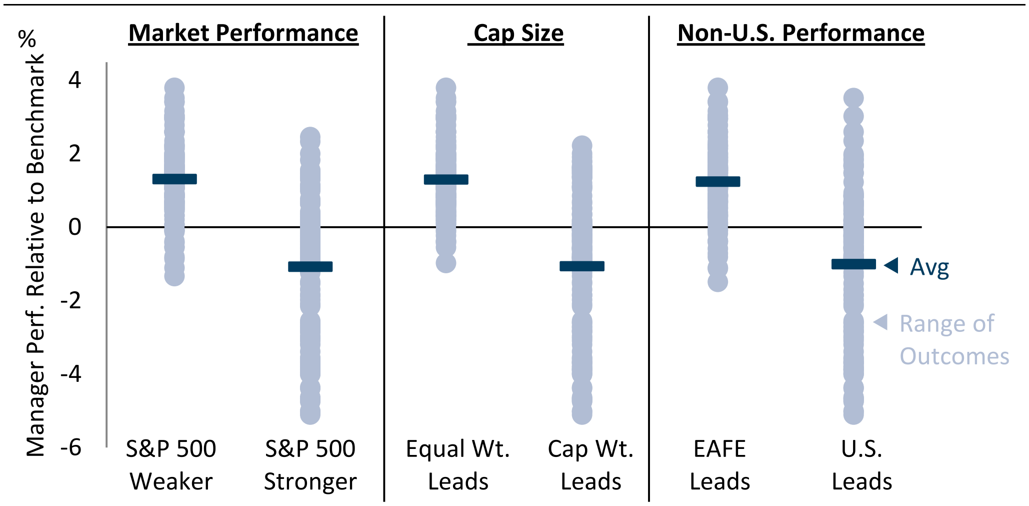
Source: RBC Capital Markets

While the framework above helps to explain manager behavior, the question is whether this is supported by empirical evidence. More specifically, if the exhibit above holds true, managers should lead in weaker market environments but lag when stock returns are robust. They should also lead when non-U.S. stocks and equal-weighted benchmarks surpass the S&P 500. As the exhibit below shows, the data clearly supports these assertions.

In aggregate, managers outperform when:

1. ***Stock returns are weak***
2. ***The equal-wtd. S&P 500 outperforms the cap-wtd. index***
3. ***EAFE outperforms U.S. stocks***

Exhibit 5: Manager Performance Around Market Direction, Cap Size, and Global Leadership



Note: S&P 500 Total Return Benchmark; gross performance; rolling 3-year annualized total return; Large Cap managers defined by Morningstar
Source: S&P, MSCI, Morningstar, FactSet, and RBC Capital Note: Since 1/31/95

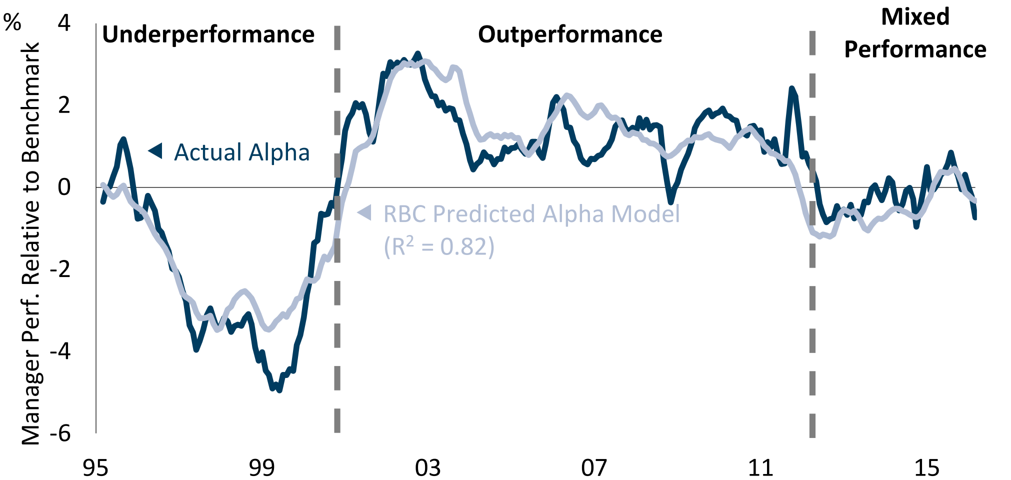
Most importantly, the data above highlights that managers are quite successful at achieving their goal of downside risk protection, outperforming in weaker market environments.

Modeling Manager Behavior

The three portfolio biases described on the prior pages are valuable in explaining/predicting manager results. One benefit of these three tilts is that they have a relatively low correlation to each other. This is particularly helpful when building a statistical model. When combined, these three variables have a predictive value of 0.82 R^2 (correlation of 0.91).

RBC's Predicted Alpha Model incorporates three portfolio tilts

Exhibit 6: Large Cap Manager Alpha – Actual vs. Model



Note: Gross performance; rolling 3-year annualized total return; Large Cap managers defined by Morningstar
Source: S&P, MSCI, Morningstar, FactSet, and RBC Capital Markets

As the table below shows, actual manager results have been largely in line with model predictions. Interestingly, manager results have been 40 bps higher than the model predicted over the past four years.

Recent performance has been better than would be expected based on RBC's model

Exhibit 7: Large Cap Manager Alpha – Actual vs. Model

%	Actual	RBC Predicted	Actual Minus Predicted
1995 - 2000	-2.1	-2.0	-0.1
2001 - 2011	1.4	1.5	-0.1
2012 - 2016	-0.2	-0.5	0.4
Entire Period	**0.1**	**0.1**	**0.0**

Note: Gross performance; rolling 3-year annualized total return; Large Cap managers defined by Morningstar
Source: S&P, MSCI, Morningstar, FactSet, and RBC Capital Markets

Implications

While the title of this note is "In Defense of Active Management," a better understanding of manager behavior has far-reaching implications. The two vignettes below highlight the broad-based usefulness of this research.

Asset Allocation

Asset allocation programs would benefit from incorporating portfolio tilts

Asset allocators, whether they be employed by asset owners (i.e., pension funds or endowments), fund managers, or third-party advisers, all have a choice of using active or passive alternatives when implementing their programs.

Since allocation models and frameworks are typically developed using indices, employing active strategies represents "basis risk" (a potential mismatch). Put differently, manager biases should be taken into account when implementing a fund's overall asset allocation strategy. For example, if Large Cap managers tend to outperform when EAFE or Small/Mid-Caps are in favor, then asset allocators should lower their exposure to those dedicated allocations. Similar work should be done to ascertain manager biases across other asset categories.

Manager Oversight and Fund Flows

The correlation of alpha and fund flows is greatest during periods of manager outperformance

Broadly speaking, investment decision makers ascribe too much of a manager's relative performance to skill as opposed to factor exposure. This often leads asset owners to shift from active to passive during periods when active management is out of favor. These decisions are often ill-timed and the result of portfolio tilts as opposed to manager skill.

During periods of active outperformance, lagging managers are typically replaced by winning funds. As a result, there is a higher correlation between alpha and funds flows in periods of broad-based manager success. These correlations break down in more challenging periods. This is the case today.

A better understanding of the cyclical nature of manager results would no doubt lead to a less disruptive and more advantageous process for both plan sponsors and managers.

Methodology

This report focuses on all Large Cap actively managed mutual funds as defined by Morningstar. More specifically, it includes Large Cap Core, Value, and Growth styles aggregated together. When combined, the subset of funds classified as Growth and Value largely offset one another.

The average gross performance of the fund universe is measured against the S&P 500 Total Return Index. A discussion of fees is beyond the scope of this report. A review of the data shows no substantial difference between average and median performance. Finally, funds both entering and exiting the universe have been included to eliminate survivorship bias.

Manager returns are not uniformly distributed. As a result, evaluating manager performance versus the percentage of managers outperforming may result in an inconsistent short-term pattern. In aggregate, performance is consistent between both metrics through time.

The analysis in this report focuses on rolling three-year returns. This avoids the idiosyncratic nature of short-term performance.

Required disclosures

Conflicts disclosures

The analyst(s) responsible for preparing this research report received compensation that is based upon various factors, including total revenues of the member companies of RBC Capital Markets and its affiliates, a portion of which are or have been generated by investment banking activities of the member companies of RBC Capital Markets and its affiliates.

Distribution of ratings

For the purpose of ratings distributions, regulatory rules require member firms to assign ratings to one of three rating categories - Buy, Hold/Neutral, or Sell - regardless of a firm's own rating categories. Although RBC Capital Markets' ratings of Top Pick/Outperform, Sector Perform and Underperform most closely correspond to Buy, Hold/Neutral and Sell, respectively, the meanings are not the same because our ratings are determined on a relative basis (as described above).

Distribution of Ratings
RBC Capital Markets, Equity Research
As of 31-Mar-2016

			Investment Banking Serv./Past 12 Mos.	
Rating	**Count**	**Percent**	**Count**	**Percent**
BUY [Top Pick & Outperform]	887	51.78	258	29.09
HOLD [Sector Perform]	722	42.15	115	15.93
SELL [Underperform]	104	6.07	8	7.69

Conflicts policy

RBC Capital Markets Policy for Managing Conflicts of Interest in Relation to Investment Research is available from us on request. To access our current policy, clients should refer to https://www.rbccm.com/global/file-414164.pdf or send a request to RBC Capital Markets Research Publishing, P.O. Box 50, 200 Bay Street, Royal Bank Plaza, 29th Floor, South Tower, Toronto, Ontario M5J 2W7. We reserve the right to amend or supplement this policy at any time.

Dissemination of research and short-term trade ideas

RBC Capital Markets endeavors to make all reasonable efforts to provide research simultaneously to all eligible clients, having regard to local time zones in overseas jurisdictions. RBC Capital Markets' equity research is posted to our proprietary website to ensure eligible clients receive coverage initiations and changes in ratings, targets and opinions in a timely manner. Additional distribution may be done by the sales personnel via email, fax, or other electronic means, or regular mail. Clients may also receive our research via third party vendors. RBC Capital Markets also provides eligible clients with access to SPARC on the Firm's proprietary INSIGHT website, via email and via third-party vendors. SPARC contains market color and commentary regarding subject companies on which the Firm currently provides equity research coverage. Research Analysts may, from time to time, include short-term trade ideas in research reports and / or in SPARC. A short-term trade idea offers a short-term view on how a security may trade, based on market and trading events, and the resulting trading opportunity that may be available. A short-term trade idea may differ from the price targets and recommendations in our published research reports reflecting the research analyst's views of the longer-term (one year) prospects of the subject company, as a result of the differing time horizons, methodologies and/or other factors. Thus, it is possible that a subject company's common equity that is considered a long-term 'Sector Perform' or even an 'Underperform' might present a short-term buying opportunity as a result of temporary selling pressure in the market; conversely, a subject company's common equity rated a long-term 'Outperform' could be considered susceptible to a short-term downward price correction. Short-term trade ideas are not ratings, nor are they part of any ratings system, and the firm generally does not intend, nor undertakes any obligation, to maintain or update short-term trade ideas. Short-term trade ideas may not be suitable for all investors and have not been tailored to individual investor circumstances and objectives, and investors should make their own independent decisions regarding any securities or strategies discussed herein. Please contact your investment advisor or institutional salesperson for more information regarding RBC Capital Markets' research.

Analyst certification

All of the views expressed in this report accurately reflect the personal views of the responsible analyst(s) about any and all of the subject securities or issuers. No part of the compensation of the responsible analyst(s) named herein is, or will be, directly or indirectly, related to the specific recommendations or views expressed by the responsible analyst(s) in this report.

Disclaimer

RBC Capital Markets is the business name used by certain branches and subsidiaries of the Royal Bank of Canada, including RBC Dominion Securities Inc., RBC Capital Markets, LLC, RBC Europe Limited, RBC Capital Markets (Hong Kong) Limited, Royal Bank of Canada, Hong Kong Branch and Royal Bank of Canada, Sydney Branch. The information contained in this report has been compiled by RBC Capital Markets from sources believed to be reliable, but no representation or warranty, express or implied, is made by Royal Bank of Canada, RBC Capital Markets, its affiliates or any other person as to its accuracy, completeness or correctness. All opinions and estimates contained in this report constitute RBC Capital Markets' judgement as of the date of this report, are subject to change without notice and are provided in good faith but without legal responsibility. Nothing in this report constitutes legal, accounting or tax advice or individually tailored investment advice. This material is prepared for general circulation to clients and has been prepared without regard to the individual financial circumstances and objectives of persons who receive it. The investments or services contained in this report may not be suitable for you and it is recommended that you consult an independent investment advisor if you are in doubt about the suitability of such investments or services. This report is not an offer to sell or a solicitation of an offer to buy any securities. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. RBC Capital Markets research analyst compensation is based in part on the overall profitability of RBC Capital Markets, which includes profits attributable to investment banking revenues. Every province in Canada, state in the U.S., and most countries throughout the world have their own laws regulating the types of securities and other investment products which may be offered to their residents, as well as the process for doing so. As a result, the securities discussed in this report may not be eligible for sale in some jurisdictions. RBC Capital Markets may be restricted from publishing research reports, from time to time, due to regulatory restrictions and/ or internal compliance policies. If this is the case, the latest published research reports available to clients may not reflect recent material changes in the applicable industry and/or applicable subject companies. RBC Capital Markets research reports are current only as of the date set forth on the research reports. This report is not, and under no circumstances should be construed as, a solicitation to act as securities broker or dealer in any jurisdiction by any person or company that is not legally permitted to carry on the business of a securities broker or dealer in that jurisdiction. To the full extent permitted by law neither RBC Capital Markets nor any of its affiliates, nor any other person, accepts any liability whatsoever for any direct or consequential loss arising from any use of this report or the information contained herein. No matter contained in this document may be reproduced or copied by any means without the prior consent of RBC Capital Markets.

Additional information is available on request.

To U.S. Residents: This publication has been approved by RBC Capital Markets, LLC (member FINRA, NYSE, SIPC), which is a U.S. registered broker-dealer and which accepts responsibility for this report and its dissemination in the United States. Any U.S. recipient of this report that is not a registered broker-dealer or a bank acting in a broker or dealer capacity and that wishes further information regarding, or to effect any transaction in, any of the securities discussed in this report, should contact and place orders with RBC Capital Markets, LLC.

To Canadian Residents: This publication has been approved by RBC Dominion Securities Inc. (member IIROC). Any Canadian recipient of this report that is not a Designated Institution in Ontario, an Accredited Investor in British Columbia or Alberta or a Sophisticated Purchaser in Quebec (or similar permitted purchaser in any other province) and that wishes further information regarding, or to effect any transaction in, any of the securities discussed in this report should contact and place orders with RBC Dominion Securities Inc., which, without in any way limiting the foregoing, accepts responsibility for this report and its dissemination in Canada.

To U.K. Residents: This publication has been approved by RBC Europe Limited ('RBCEL') which is authorized by the Prudential Regulation Authority and regulated by the Financial Conduct Authority ('FCA') and the Prudential Regulation Authority, in connection with its distribution in the United Kingdom. This material is not for general distribution in the United Kingdom to retail clients, as defined under the rules of the FCA. However, targeted distribution may be made to selected retail clients of RBC and its affiliates. RBCEL accepts responsibility for this report and its dissemination in the United Kingdom.

To Persons Receiving This Advice in Australia: This material has been distributed in Australia by Royal Bank of Canada - Sydney Branch (ABN 86 076 940 880, AFSL No. 246521). This material has been prepared for general circulation and does not take into account the objectives, financial situation or needs of any recipient. Accordingly, any recipient should, before acting on this material, consider the appropriateness of this material having regard to their objectives, financial situation and needs. If this material relates to the acquisition or possible acquisition of a particular financial product, a recipient in Australia should obtain any relevant disclosure document prepared in respect of that product and consider that document before making any decision about whether to acquire the product. This research report is not for retail investors as defined in section 761G of the Corporations Act.

To Hong Kong Residents: This publication is distributed in Hong Kong by RBC Capital Markets (Hong Kong) Limited and Royal Bank of Canada, Hong Kong Branch (both entities are regulated by the Hong Kong Monetary Authority ('HKMA') and the Securities and Futures Commission ('SFC')). Financial Services provided to Australia: Financial services may be provided in Australia in accordance with applicable law. Financial services provided by the Royal Bank of Canada, Hong Kong Branch are provided pursuant to the Royal Bank of Canada's Australian Financial Services Licence ('AFSL') (No. 246521). RBC Capital Markets (Hong Kong)