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Exploring the S&P/TSX Capped REIT Income Index

EXECUTIVE SUMMARY

- Canadian REITs have outperformed the equities and the bond markets over the past 20 years, with a similar risk level as that of equities.
- There are potential diversification benefits of using REITs in a portfolio.
  - REITs have low correlation with equities and bonds.
  - REITs are another class of income-generating securities that tend to pay high dividends and have low correlation to other dividend-paying sectors like utilities and telecommunication services.
- REIT securities can be further classified into eight subgroups that exhibit different risk/return profiles, as well as low-to-moderate correlations among each other, adding to the diversification benefits within a basket of REIT securities.
- Canadian REITs have generated higher dividend yields than the broad-based domestic equity market over the past 17 years.
- The S&P/TSX Capped REIT Income Index is designed to measure the performance of REIT companies in the S&P/TSX Composite while overweighting and underweighting companies based on their risk-adjusted income distribution yield.
- The index is tilted in favor of securities with yields that have not fluctuated in the past 36 months.

INTRODUCTION

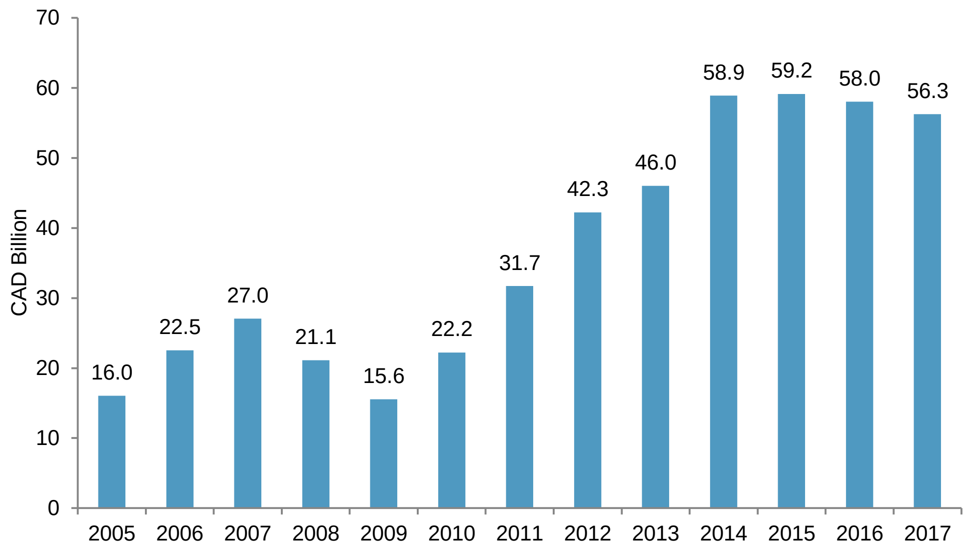
REITs were created in the U.S. in 1960 to give market participants a new approach to income-producing real estate securities that combine the attributes of real estate and stock-based investments. Over the past five decades, market participants around the globe have responded to this new asset class. The total equity market capitalization of global equity REITs has grown 16-fold in the past 20 years, from CAD 0.11 trillion to CAD 1.8 trillion as of June 2017, as measured by the S&P Global REIT.

Due to the growth and distinct properties of real estate securities, S&P Dow Jones Indices and MSCI created a new sector classification—real estate—in August 2016. Listed equity REITs and other real estate companies from the financials sector moved to the newly created real estate sector.

The Canadian REITs industry celebrated its 20th anniversary in 2013. Canadian REITs were born after the recessionary period in the late 1980s and early 1990s. There were five REITs in the Canadian market as of late 1996. From 1998 to 2000, when technology stocks were soaring, REITs were trading at a discount in Canada. After the burst of the technology bubble, market participants were searching for companies that owned the hard assets, and REITs became a widely accepted vehicle, as they owned or managed the physical assets and satisfied the income needs of investors at that time. The total market capitalization of Canadian REITs grew from CAD 16 billion in June 2005 to over CAD 56 billion as of June 2017, as measured by the S&P Canada REIT (see Exhibit 1).

After the burst of the technology bubble, market participants were searching for companies that owned the hard assets, and REITs became a widely accepted vehicle, as they owned or managed the physical assets and satisfied the income needs of investors at that time.

Exhibit 1: Market Cap of the S&P Canada REIT



Source: S&P Dow Jones Indices LLC. Data as of June 2017. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

In this paper, we analyze the benefits of REITs by comparing them with the Canadian equity and fixed income markets. We also compare REITs against high-dividend-paying sectors, such as utilities and telecommunication services, within the Canadian equity market. In the second half of the paper, we introduce the S&P/TSX Capped REIT Income Index and highlight the risk/return characteristics of the index versus the broad market.

REITs Have Low Correlation With Traditional Asset Classes

REITs have outperformed the equities and fixed income asset classes on an annualized return basis over the past 20 years. Despite higher returns, the risk over the test period was similar to that of equities (see Exhibit 2). Over the period studied, the average rolling 12-month correlation of REITs against equities was 0.43, while that of fixed income was 0.21. Correlations of REITs with traditional asset classes are time varying, and the correlation with the equities reached a peak of 0.89 shortly after the 2008 financial crisis (September 2009) and gradually fell to 0.29 by December 2010.

The addition of REITs to a portfolio can potentially provide diversification benefits, given their low correlation with stocks and bonds.

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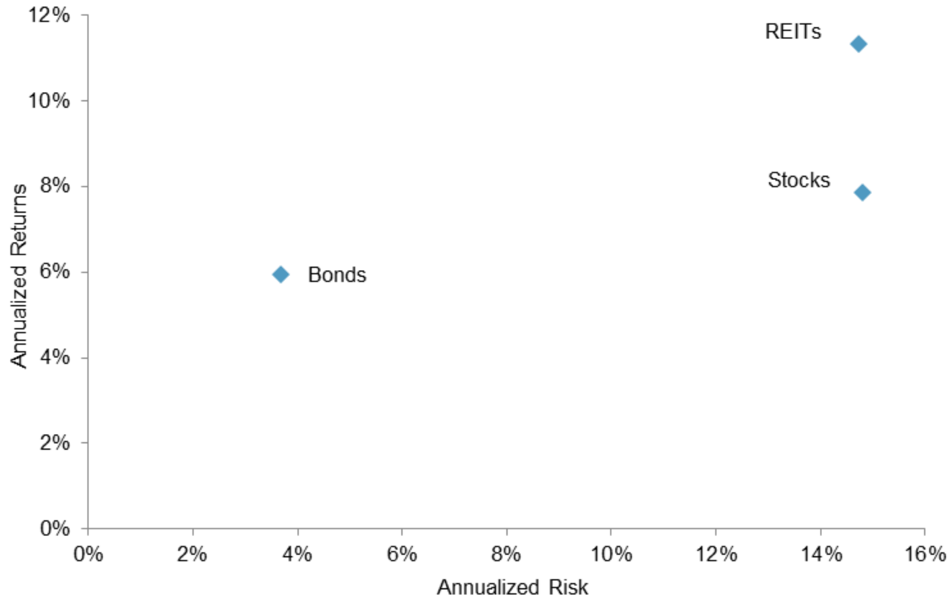
Exhibit 2: Annualized Risk and Return Characteristics of REITs



Source: S&P Dow Jones Indices LLC. Data from July 1996 to June 2017. REITs are represented by the S&P Canada REIT, equities are represented by the S&P TSX Composite, and bonds are represented by the S&P Canada Aggregate Bond Index. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 3: Rolling 12-Month Correlations With Equities and Fixed Income

CORRELATION	EQUITIES	BONDS
Average	0.43	0.21
Maximum	0.89	0.84
Minimum	-0.29	-0.55

Source: S&P Dow Jones Indices LLC. Data from July 1996 to June 2017. REITs are represented by the S&P Canada REIT, equities are represented by the S&P TSX Composite, and bonds are represented by the S&P Canada Aggregate Bond Index. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

REITs Have Low Correlation With Other Dividend-Paying Equity Sectors

Utilities and telecommunication services are typically regarded as high-dividend-paying sectors. Over the period observed, REITs had average correlations of 0.41 and 0.26 with the utilities and telecommunication services sectors, respectively. The correlation with utilities peaked at 0.88

in June 2003, while the correlation with telecommunication services peaked at 0.8 in October 2009 when the Canadian market experienced downturns. Given the low average rolling correlations to other income-producing sectors, REITs and stocks from the utilities and telecommunication services sectors could potentially offer diversification benefits for market participants seeking income.

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Exhibit 4: Rolling 12-Month Correlations With High-Dividend-Paying Sectors

CORRELATION	S&P CANADA BMI UTILITIES	S&P CANADA BMI TELECOMMUNICATION SERVICES
Average	0.41	0.26
Maximum	0.88	0.80
Minimum	-0.57	-0.40

Source: S&P Dow Jones Indices LLC. Data from July 1996 to June 2017. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

REIT Subsectors Have Unique Risk/Return Profiles and Low-to-Moderate Correlations Among Each Other

REIT securities tend to be heterogeneous and diverse in terms of their business models, operations, and tenants. As per the GICS® classification, REIT securities are further classified into the following eight subcategories.

- Diversified
- Industrial
- Hotel & Resort
- Office
- Health Care
- Residential
- Retail
- Specialized

The performance driver of each subcategory is different and can provide diversification benefits within a basket of REIT securities, due to varying risk/return profiles as well as generally low-to-moderate correlations among each other (see Exhibits 5 and 6). For example, the performance driver of office REITs is different from the performance driver of health care REITs.

Risk-adjusted returns varied from 0.19 to 1 for various REIT subsectors. Residential REITs had the lowest correlation (0.38) with hotel & resort REITs, while retail REITs had the highest correlation (0.78) with diversified REITs.

Exhibit 5: Risk/Return Profile of REIT Subsectors

CATEGORY	DIVERSIFIED	HOTEL & RESORT	OFFICE SPACE	HEALTH CARE	RESIDENTIAL	RETAIL
Annualized Returns (%)	11.7	8.5	7.4	4.3	14.5	13.3
Annualized Volatility (%)	15.4	26.0	18.8	22.9	14.5	15.9
Risk-Adjusted Return	0.76	0.33	0.39	0.19	1.00	0.84

Source: S&P Dow Jones Indices LLC. Data from July 1996 to June 2017 for various REITs subsectors within the S&P Canada REIT. The length of the time series varies for each subindex. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

The performance driver of each subcategory is different and can provide diversification benefits within a basket of REIT securities, due to varying risk/return profiles as well as generally low-to-moderate correlations among each other.

Exhibit 6: Correlations Among REITs Subsectors

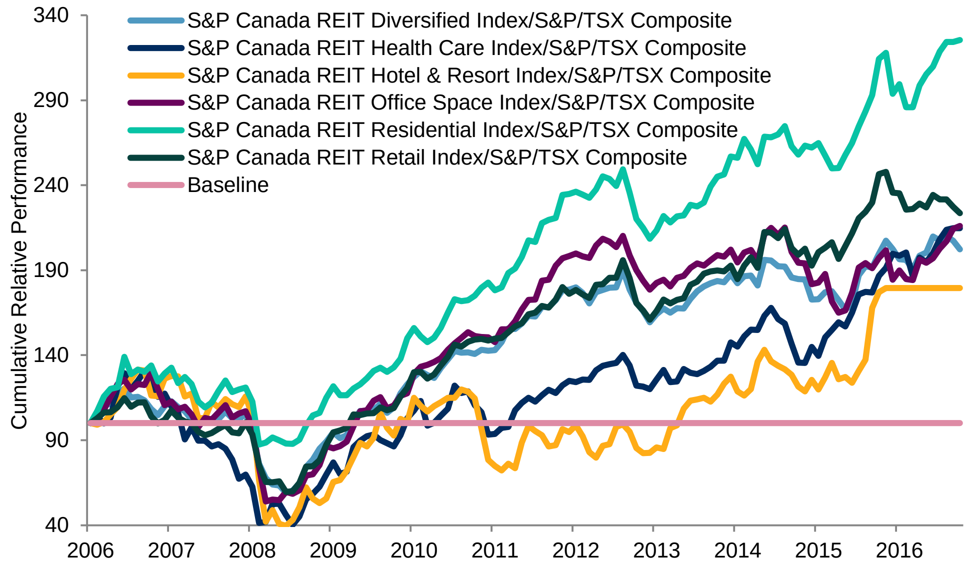
CORRELATION	DIVERSIFIED	HEALTH CARE	HOTEL & RESORT	OFFICE SPACE	RESIDENTIAL	RETAIL
DIVERSIFIED	1.0	-	-	-	-	-
HEALTH CARE	0.57	1.0	-	-	-	-
HOTEL & RESORT	0.53	0.50	1.00	-	-	-
OFFICE SPACE	0.72	0.48	0.52	1.00	-	-
RESIDENTIAL	0.67	0.52	0.38	0.63	1.0	-
RETAIL	0.78	0.56	0.58	0.71	0.66	1.0

Source: S&P Dow Jones Indices LLC. Data from July 1996 to June 2017 for various REITs subsectors within the S&P Canada REIT. The length of the time series varies for each subindex. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Most of the REIT subsectors consistently outperformed the broader benchmark index over the past 10 years on a cumulative basis and mostly moved in the same direction.

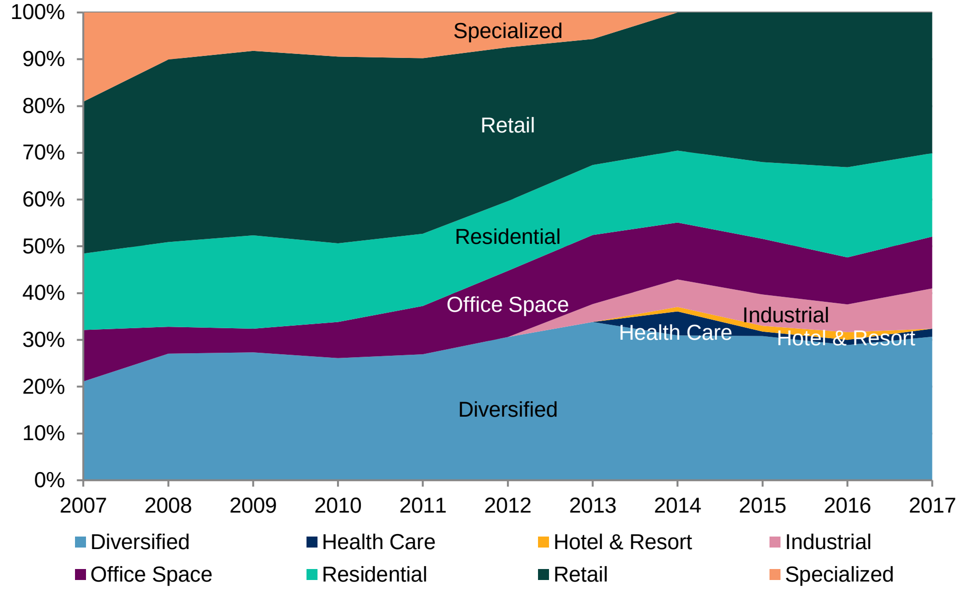
Most of the REIT subsectors consistently outperformed the broader benchmark index over the past 10 years on a cumulative basis and mostly moved in the same direction (see Exhibit 7). All of the subsectors showed significant underperformance relative to the broader benchmark index during the financial crisis of 2008-2009. Each of the subsectors showed a unique performance pattern, and further research is required to decompose the returns to various attributes.

Exhibit 7: Cumulative Performance of REIT Subsectors



Source: S&P Dow Jones Indices LLC. Data from September 2006 to June 2017, except for the S&P Canada REIT Hotel & Resort, where returns are available through July 2016. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Exhibit 8: Historical Allocation of REIT Subsectors



Source: S&P Dow Jones Indices LLC. Data from June 2007 to June 2017 for the S&P Canada REIT. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Significantly Higher Yield Than the Broad Market

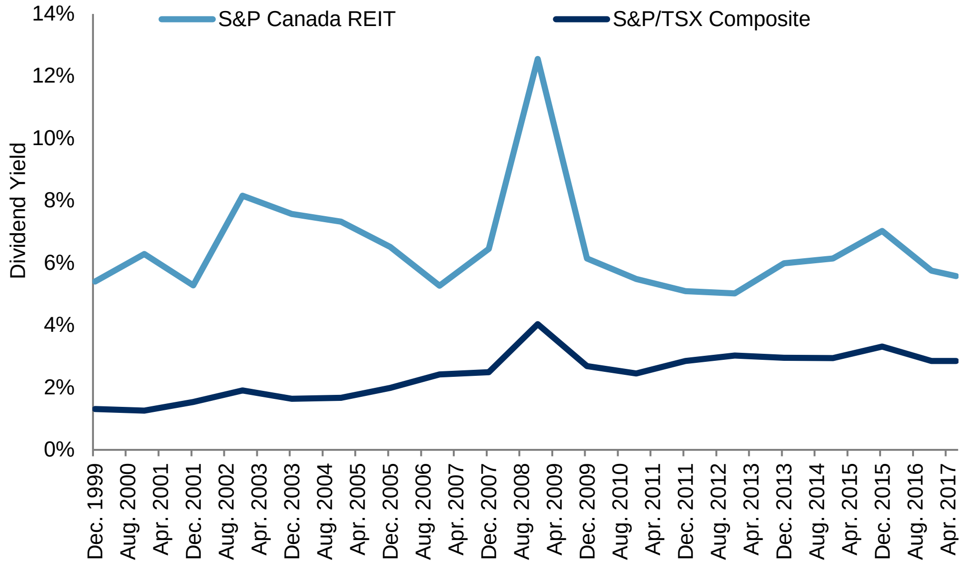
One of the benefits that REITs offer is their ability to distribute dividends. Equity REITs are securities that own and manage properties, and they generate income by collecting rent from the tenants. By definition, REITs must pass through a significant amount of their taxable income to shareholders as dividends. The steady income streams from rental properties have been one of the chief drivers of REIT performance.

In the Canadian market, REIT dividend yield was significantly higher than the yield of the broader market.

In the Canadian market, REIT dividend yield was significantly higher than the yield of the broader market, as measured by the S&P/TSX Composite (see Exhibit 9). The average yield for REITs, as represented by the S&P Canada REIT, was 6.48%, while that for the benchmark index was 2.43% from December 1999 to June 2017. In fact, over the past 21 years ending in June 2017, about 52.77% of REIT total returns came from dividends, compared with about 26.79% for the S&P/TSX Composite.

For market participants with a long-term horizon, REITs can provide an attractive opportunity. Dividends can be reinvested to generate future returns, while in later years they can provide a steady income stream to meet retirement needs.

Exhibit 9: Historical Dividend Yield of REITs and the Broad Market



Source: S&P Dow Jones Indices LLC and Factset. Data from December 1999 to June 2017. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

The S&P/TSX Capped REIT Income Index

The S&P/TSX Capped REIT Income Index is designed to measure the performance of REIT companies in the S&P/TSX Composite while overweighting and underweighting companies based on their risk-adjusted income distribution yield.

The S&P/TSX Capped REIT Income Index is designed to measure the performance of REIT companies in the S&P/TSX Composite while overweighting and underweighting companies based on their risk-adjusted income distribution yield. The index is tilted in favor of securities with yields that have not fluctuated widely. By using risk-adjusted yield—computed as 12-month trailing yield/standard deviation of yield—the higher weight is placed on securities with more stable yields. Also, given that REIT securities tend to be more volatile than the market, the methodology aims to ensure that higher yield does not come at the price of higher return volatility.

To allow for capacity, the constituents are weighted by their risk-adjusted yield ratio times their float-adjusted market cap, with maximum weight capped at 10%. This way, smaller companies with high yields do not have such a disproportionate weight in the index, and the same applies for large companies with lower yields.

The standard deviation of yield is calculated using the previous 36 months of income distribution yield history. The ability to pay dividends over three years indicates a firm's strength and stability. There is also less chance of dividend cuts, which are perceived negatively in the market.

We also constructed a hypothetical portfolio that follows the same methodology as that of the S&P/TSX Capped REIT Income Index except for the weighting schema. The hypothetical portfolio uses a trailing 12-month dividend yield to weight the stocks within the index.

Exhibit 10: Methodology

CATEGORY	S&P/TSX CAPPED REIT INCOME INDEX	HYPOTHETICAL YIELD-WEIGHTED PORTFOLIO
Universe	S&P/TSX Composite	S&P/TSX Composite
Number of Constituents	Floating	Floating
Weighting Scheme	Risk-adjusted dividend yield * Float-adjusted market cap	Trailing 12 month dividend yield
Rebalancing Frequency	Semiannually	Semiannually
Maximum Security Weight	10%	10%
Dividend Distribution Criteria	Security must have a minimum income distribution yield history of 36 months prior to the rebalancing reference date	Security must have a minimum income distribution yield history of 36 months prior to the rebalancing reference date

Source: S&P Dow Jones Indices LLC. Table is provided for illustrative purposes.

Historically, the S&P/TSX Capped REIT Income Index has exhibited higher best monthly returns, average monthly returns, and maximum rolling 12-month returns compared with the benchmark.

Exhibit 11A shows that the S&P/TSX Capped REIT Income Index outperformed the benchmark, the S&P/TSX Composite, on a risk-adjusted basis over the period studied. Historically, this index has exhibited higher best monthly returns, average monthly returns, and maximum rolling 12-month returns compared with the benchmark. This exhibit also shows that the S&P/TSX Capped REIT Income Index outperformed the hypothetical yield-weighted portfolio with lower volatility, leading to a higher risk-adjusted return over the period studied. The S&P/TSX Capped REIT Income Index has also shown better results for risk statistics, such as maximum drawdown, worst monthly return, and minimum rolling 12-month period.

Exhibit 11A: Risk/Return Profile

RISK/RETURN CHARACTERISTICS	S&P/TSX CAPPED REIT INCOME INDEX (TR)	YIELD-WEIGHTED HYPOTHETICAL PORTFOLIO	S&P/TSX COMPOSITE (TR)
ANNUAL RETURN (%)			
1-Year	3.63	4.77	11.05
3-Year	6.19	6.32	3.08
5-Year	5.57	5.68	8.74
10-Year	6.78	6.39	3.89
Since Inception	**8.09**	**7.72**	5.47
ANNUAL VOLATILITY (%)			
3-Year	10.64	10.71	7.79
5-Year	10.28	10.30	7.59
10-Year	15.15	16.30	13.39
Since Inception	**14.92**	**15.93**	13.07

Source: S&P Dow Jones Indices LLC. Data from August 2006 to June 2017. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 11A: Risk/Return Profile (cont.)

RISK-ADJUSTED RETURN			
3-Year	0.58	0.59	0.40
5-Year	0.54	0.55	1.15
10-Year	0.45	0.39	0.29
Since Inception	**0.54**	**0.48**	0.42
RISK STATISTICS SINCE INCEPTION			
Maximum Drawdown	**-52.28**	**-54.43**	-43.35
Best Monthly Return (%)	17.12	17.96	11.46
Worst Monthly Return (%)	**-22.29**	**-25.18**	-16.67
Average Monthly Return (%)	0.74	0.73	0.52
Minimum Rolling 12-Month Return (%)	**-40.60**	**-43.77**	-38.20
Maximum Rolling 12-Month Return (%)	80.85	87.31	47.60
Beta With Benchmark	**0.72**	**0.79**	-
Correlation With Benchmark	0.63	0.65	-

Source: S&P Dow Jones Indices LLC. Data from August 2006 to June 2017. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

The S&P/TSX Capped REIT Income Index outperformed the underlying broad market in 7 out of 12 years.

Exhibit 11B shows the calendar year performance of the S&P/TSX Capped REIT Income Index versus the benchmark and the hypothetical yield-weighted portfolio. We can see that the strategy outperformed the underlying broad market in 7 out of 12 years. The exhibit also shows that in 2008 and 2011, when the broad market was down, the S&P/TSX Capped REIT Income Index outperformed the hypothetical yield-weighted portfolio.

Exhibit 11B: Calendar Year Returns

YEAR	S&P/TSX CAPPED REIT INCOME INDEX (TR) (%)	YIELD-WEIGHTED HYPOTHETICAL PORTFOLIO (%)	S&P/TSX COMPOSITE (TR) (%)
2006	16.90	16.95	10.30
2007	-5.64	-6.11	11.48
2008	**-37.54**	**-40.40**	-33.00
2009	53.36	57.82	35.05
2010	23.36	23.95	17.61
2011	**20.98**	**18.68**	-8.71
2012	19.74	19.13	7.19
2013	-5.14	-4.61	12.99
2014	10.05	8.72	10.55
2015	-4.56	-4.55	-8.32
2016	17.42	17.59	21.08
2017	5.86	6.86	0.74

Source: S&P Dow Jones Indices LLC. Data from August 2006 to June 2017. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 11C shows that over the analysis period, when the broad market was down, the S&P/TSX Capped REIT Income Index outperformed 73.47% of the time, while the hypothetical yield-weighted portfolio outperformed the broad market 67.35% of the time. This exhibit also shows that on average, the S&P/TSX Capped REIT Income Index generated an excess return of 1.43% over the benchmark index, while the hypothetical yield-weighted portfolio generated an excess return of 1.22% when the benchmark index was down. In a nutshell, the S&P/TSX Capped REIT Income Index provided better protection when the broad market was down over the period studied.

The S&P/TSX Capped REIT Income Index provided better protection when the broad market was down over the period studied.

Exhibit 11C: Performance of the S&P/TSX Capped REIT Income Index and Hypothetical Portfolio

PERCENTAGE OF MONTHS PORTFOLIOS OUTPERFORMED THE BENCHMARK		
PERIOD	**S&P/TSX CAPPED REIT INCOME INDEX (TR) (%)**	**YIELD-WEIGHTED HYPOTHETICAL PORTFOLIO (%)**
All Months	54.20	51.15
Up Months	42.68	41.46
Down Months	**73.47**	**67.35**
AVERAGE MONTHLY EXCESS RETURNS OF PORTFOLIOS OVER THE BENCHMARK		
PERIOD	**S&P/TSX CAPPED REIT INCOME INDEX (TR) (%)**	**YIELD-WEIGHTED HYPOTHETICAL PORTFOLIO (%)**
All Months	0.23	0.21
Up Months	-0.49	-0.39
Down Months	**1.43**	**1.22**

Source: S&P Dow Jones Indices LLC. Data from August 2006 to June 2017. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Higher Yield Than the Broad Market

From December 2006 to June 2017, the S&P/TSX Capped REIT Income Index generated an average historical yield of 6.5%, compared with 2.9% for the benchmark.

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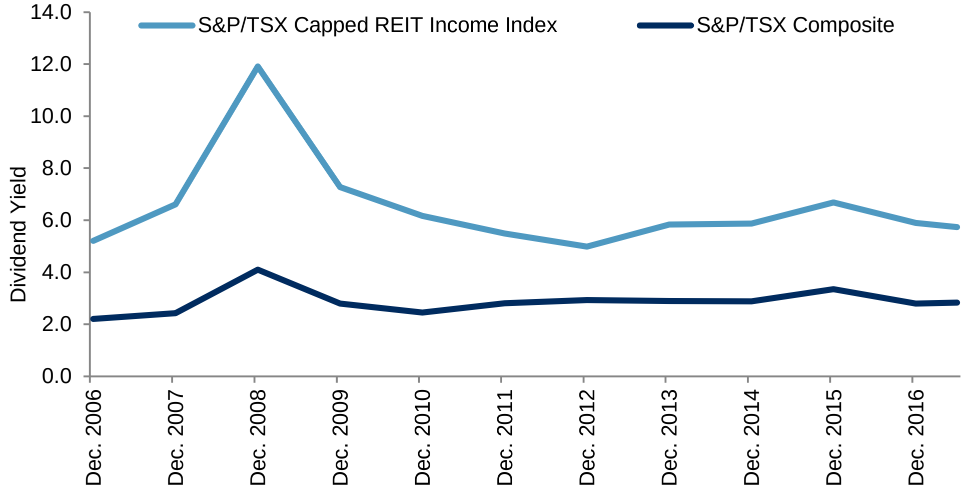
Exhibit 12: Historical Dividend Yield



Source: S&P Dow Jones Indices LLC. Data from December 2006 to June 2017. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 13: Average Historical Yield

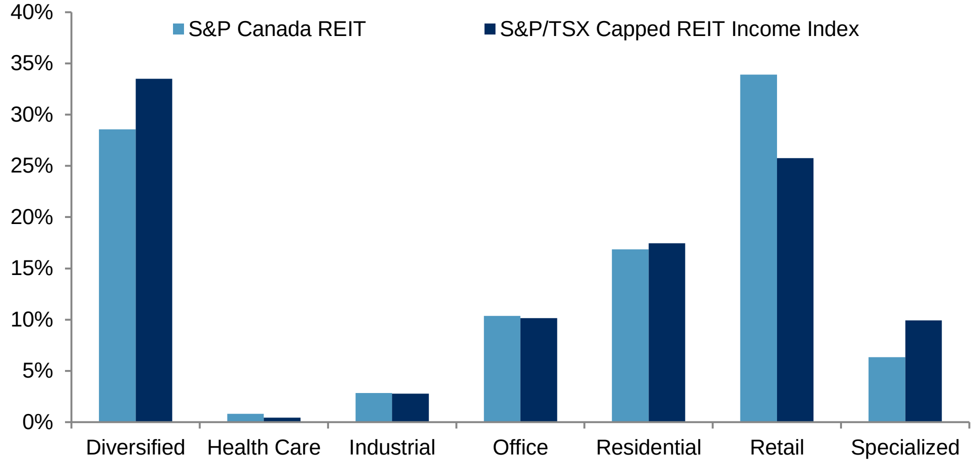
S&P/TSX CAPPED REIT INCOME INDEX	S&P/TSX COMPOSITE
6.5%	2.9%

Source: S&P Dow Jones Indices LLC. Data from December 2006 to June 2017. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Subsector Allocation Differs From Broad Market REIT Allocation to Retail and Diversified REITs

Historical average allocation of subsectors from June 2007 to June 2017 shows that the S&P/TSX Capped REIT Income Index is underallocated to retail REITs while overallocated to diversified REITs compared to the broad market REIT allocation. In fact, every snapshot in June of each year from 2007 to 2017 indicates that the S&P/TSX Capped REIT Income Index is consistently underallocated to retail REITs compared to the broad market retail REITs allocation. (see Exhibit 14).

Exhibit 14: Average Subsector Weight of the S&P Canada REIT and the S&P/TSX Capped REIT Income Index



Source: S&P Dow Jones Indices LLC. Data from June 2007 to June 2017. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Canadian equity market The S&P/TSX Capped REIT Income Index has delivered higher risk-adjusted returns than the broad-based since its inception.

CONCLUSION

As an asset class, REITs have become more prominent in Canada over the past 20 years, due to their low correlation with equities and fixed income, their ability to pay steady dividends to income-seeking market participants, and their potential to offer diversification due to exposure to the cross section of REIT subsectors. The S&P/TSX Capped REIT Income Index, which is designed to measure the performance of REIT companies in the S&P/TSX Composite while overweighting and underweighting companies based on their risk-adjusted income distribution yield, has delivered higher risk-adjusted returns than the broad-based Canadian equity market since its inception. The index has also generated significantly higher yield than the benchmark.

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PERFORMANCE DISCLOSURE

The S&P/TSX Capped REIT Income Index was launched on April 3, 2017. The S&P Canada Aggregate Bond Index was launched on December 31, 2013. The S&P Canada BMI Utilities and the S&P Canada BMI Telecommunication Services were launched on September 19, 2005. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance. The back-test calculations are based on the same methodology that was in effect on the index Launch Date. Complete index methodology details are available at www.spdji.com.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the Index is set at a fixed value for calculation purposes. The Launch Date designates the date upon which the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its datafeed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

Past performance of the Index is not an indication of future results. Prospective application of the methodology used to construct the Index may not result in performance commensurate with the back-test returns shown. The back-test period does not necessarily correspond to the entire available history of the Index. Please refer to the methodology paper for the Index, available at www.spdji.com for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Another limitation of using back-tested information is that the back-tested calculation is generally prepared with the benefit of hindsight. Back-tested information reflects the application of the index methodology and selection of index constituents in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. For example, there are numerous factors related to the equities, fixed income, or commodities markets in general which cannot be, and have not been accounted for in the preparation of the index information set forth, all of which can affect actual performance.

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