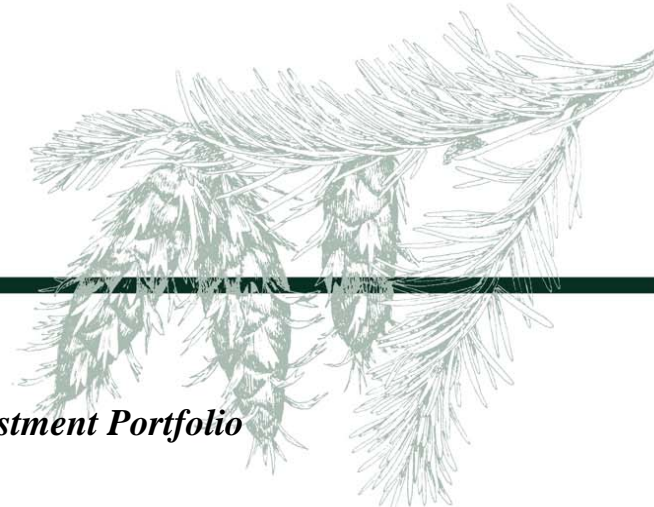


# Hancock Timber RESEARCH Note



Publication Reference # N-10-12

## *The Benefits of Timberland in a Canadian Investment Portfolio*

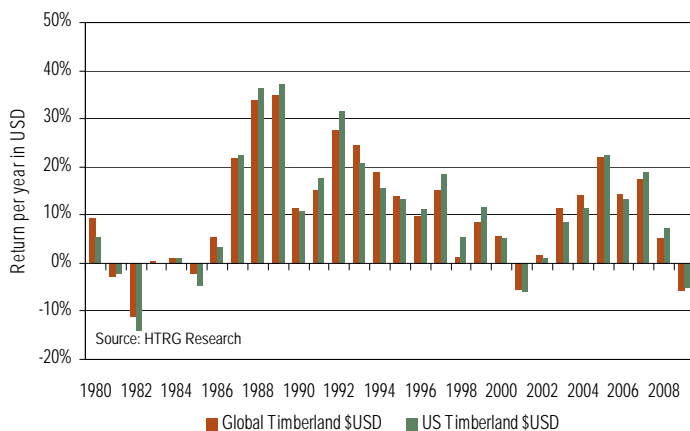
### Introduction

Investing in timberland assets has shown to provide significant diversification benefits and improve overall portfolio performance when combined with other assets held by a typical U.S. investor. This finding provides an incentive for consideration of timberland investments for any investor world-wide, but lacks insight into the performance of the asset class compared to relevant local alternatives. The following analysis assesses the benefits of adding timberland investments to a portfolio comprised of Canadian assets with returns denominated in Canadian dollars. The list of indices used in the analysis is provided in the End Notes.

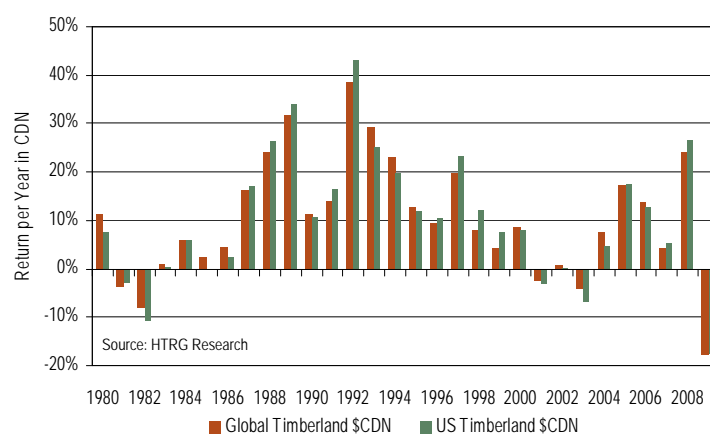
### Timberland Returns

For the 30 year period from 1980 to 2009, Canadian dollar adjusted annual timberland returns were positive for both U.S. Timberland and Global Timberland investments over 80 percent of the time. During this period, the annual compound returns for U.S. Timberland and Global Timberland in Canadian dollars are the same at 9.5 percent. The returns for timberland denominated in U.S. dollars over the same period are slightly higher at 12.2 percent and 12.5 percent, respectively. Although recent exchange rate volatility has resulted in significant return variance between the countries, when viewed over the entire 30 years, the exchange rate relationship has resulted in approximately a three percent higher annual return for U.S. dollar denominated timberland than if denominated in Canadian dollars.

Historical Returns for Timber Assets \$USD, 1980-2009



Historical Returns for Timber Assets \$CDN, 1980-2009



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Note: The domestic and global timberland portfolio returns are calculated from the *NCREIF Timberland Index* and the *Hancock Timberland Index*. The *Hancock Timberland Index* is a reconstructed timberland return series which extends the historical record of timberland returns back to 1960 as well as provide historical returns for non-US properties. See *2002 HTRG Research Note: Historical Returns for Timberland* for a detailed description.

## Risk Adjusted Returns

Timberland has provided high risk adjusted returns over the past 30 years when compared to other assets typically found in a Canadian investment portfolio.

### Annual Return vs. Standard Deviation

U.S. and Global timberland investments denominated in Canadian dollars have provided a rate of return similar to Canadian equities while providing less risk. The deviation of returns for U.S. Timberland and Global Timberland (\$CDN) for the period from 1980 to 2009 were 13.3 percent and 12.4 percent compared to 17.0 percent for General Equity and 24.1 percent for International Equity.

During the same time frame, Canadian fixed income investments have performed favorably compared to Canadian dollar denominated timberland. Long-Term Canadian Government Bonds have returned 9.8 percent annually with a deviation of 7.7 percent and Canadian Corporate Bonds have returned 11.0 percent with a deviation of 10.9 percent.

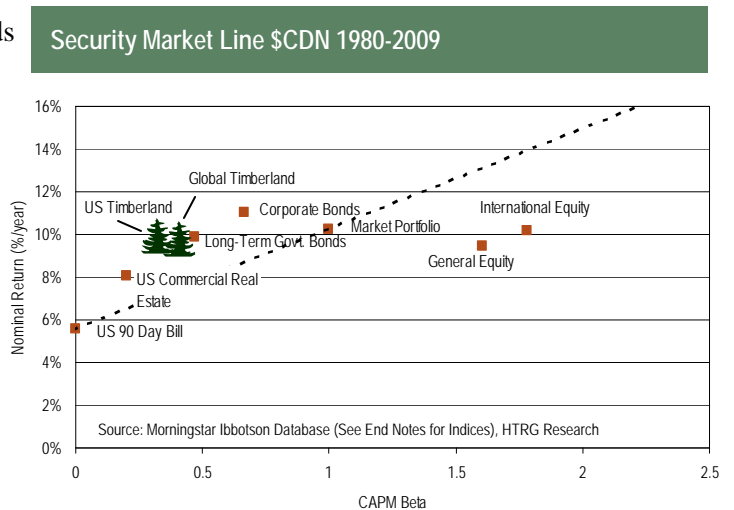
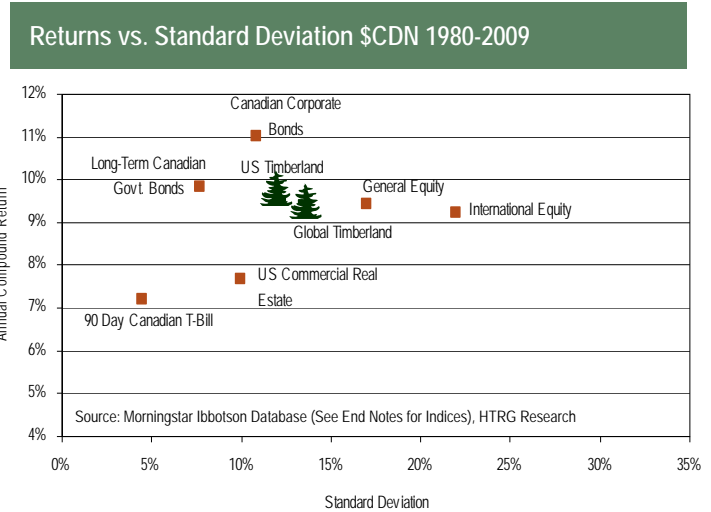
### Security Market Line

The security market line (SML) is used to assess whether an asset or asset class is fairly valued for a given level of return and risk measured by CAPM Beta. An asset that falls above the SML is undervalued and an asset below the SML is overvalued given their respective levels of risk adjusted return.

The SML is drawn using a risk free rate with a Beta of 0 and market portfolio with a Beta of 1 to provide a linear representation of what an expected return should be given varying amounts of risk. For Canadian investments (\$CDN) over the past 30 years, timberland and bonds have performed better than expected given the level of risk associated with each. As a result, these asset classes lie in the upper left of the graph, above the security market line.

Equities have underperformed given their level of risk and lie to the far right of the graph, below the security market line. U.S. Commercial Real Estate has performed near the expected return for assets with their level of risk.

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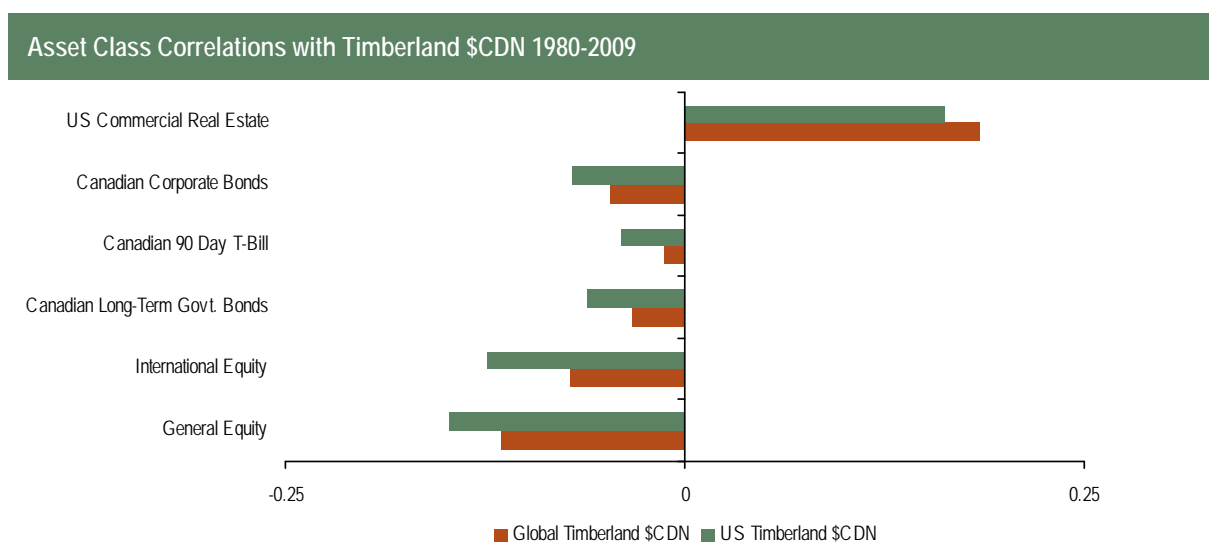
Note: Market Portfolio consists of: General Equity: 35 percent, International Equity: 10 percent, Long-Term Canadian Government Bonds: 30 percent, Canadian Corporate Bonds: 15 percent, US Commercial Real Estate: 10 percent.

The two analyzed measures of risk adjusted returns provide a similar message about the performance of Canadian asset classes over the course of the past 30 years. Timberland and bonds have outperformed, equities have underperformed, and other asset classes have tended to perform in line with expectations for their given levels of risk.

Current market conditions and yields on fixed income securities are historically low and significantly below the average levels realized from 1980 to 2009. At these current lower levels, other asset classes including timberland are increasingly attractive as an alternative.

### Correlation between Timberland and Other Assets

For the period from 1980 to 2009, timberland returns denominated in Canadian dollars have a negative correlation with financial assets, as represented below. U.S. Commercial Real Estate (\$CDN), at 0.20, has a positive correlation with timberland. Bonds exhibit negative correlation with long-term maturities having a stronger negative correlation than short-term securities. Equities have the most prominent negative correlation at -0.15 for U.S. Timberland and -0.10 for Global Timberland.



Source: Morningstar Ibbotson Database (See End Notes for Indices), HTRG Research

### Correlation between Timberland and Inflation

One of the benefits which timberland has historically exhibited is a positive correlation with inflation. As a result, timberland has acted as a hedge against unexpected or rising inflation, highly beneficial to investors looking for capital preservation.

For U.S. inflation, both U.S. and Global Timberland have been consistently correlated between approximately 0.30 and 0.50 for each five year time period from 1960 to 2009.

When comparing Canadian inflation and Canadian dollar timberland returns the correlations for the periods 1970 to 2009 and 1975 to 2009 are positive and range from 0.10 to 0.23. The remaining time periods display low to negative correlations between timberland and Canadian inflation.

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*The Benefits of Timberland in a Canadian Investment Portfolio* (Continued from page 3)

The period from 1980 to 2009 has the lowest correlation between Canadian dollar denominated U.S. and Global timberland and Canadian inflation by a wide margin. The outcome is consistent when analyzing U.S. dollar timberland returns and U.S. inflation for the same period. The severe U.S. recession in early 1980s and the resultant hyper-inflation presents itself in the correlation results for both the U.S. and Canada.

Time Period	1960-2009	1965-2009	1970-2009	1975-2009	1980-2009	1985-2009	1990-2009	1995-2009	2000-2009
U.S. Inflation vs. U.S. Dollar Timberland Returns									
Global Timberland	0.44	0.36	0.35	0.31	0.02	0.45	0.31	0.42	0.47
U.S. Timberland	0.38	0.33	0.33	0.25	(0.02)	0.43	0.26	0.35	0.44
Canadian Inflation vs. Canadian Dollar Timberland Returns									
Global Timberland \$CDN	n/a	n/a	0.23	0.13	(0.24)	0.06	(0.10)	(0.13)	0.03
U.S. Timberland \$CDN	n/a	n/a	0.21	0.10	(0.27)	0.05	(0.10)	(0.18)	0.00

## Summary

Timberland investments analyzed from a Canadian perspective display the positive characteristics typically associated with the asset class. For the 30 year period from 1980 to 2009, timberland outperformed Canadian financial assets on a risk adjusted basis. Timberland has demonstrated low or negative correlation with prominent Canadian financial asset classes. Timberland has been positively correlated with U.S. real estate assets denominated in Canadian dollars. Correlation between Canadian inflation and timberland has been relatively low, yet for long time periods the relationship becomes increasingly positive. Adding timberland to a typical Canadian mixed asset portfolio has performed similarly for Canadians as it has for investors in the U.S. providing higher returns while reducing overall portfolio risk.

## End Notes

ASSET CLASS (Total Return)	SOURCE OR INDEX USED IN ANALYSIS
CAD/USD	Pacific Exchange Rate
Inflation	IMF Canada Inflation
General Equity \$CDN	S&P/TSX Composite Index
International Equity \$CDN	MSCI EAFE Index (conversion from USD)
Long-Term Govt. Bonds \$CDN	DEX Government Bond Index
CDN 90 Day T-Bill	DEX Canadian Treasury Bill 90 Day Index
US 90 Day T-Bill	Citigroup 90 Day Treasury Bill (conversion from USD)
Corporate Bonds \$CDN	DEX Long-Term Bond Index
US Commercial Real Estate \$CDN	NCREIF National Property Index (conversion from USD)
Global Timberland \$CDN	HTRG Research (conversion from USD)
US Farmland \$CDN	NCREIF US Farmland Index (conversion from USD)
US Timberland \$CDN	HTRG Research (conversion from USD)