

CEO of Cliffwater Gets an F in Elementary School Arithmetic

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In the coming days and weeks, I will have more to say about what transpired at the STRS Board meeting. But for now, I want to comment on an exchange I had with Steve Nesbitt, CEO of Cliffwater, who is the STRS consultant for alternative investments. In my attempt to make a presentation, I compared U.S. pensions with a Canadian pension for their rates of return and the standard deviations, the latter being a measure of risk. Specifically, I said that over a 20-year period, the Health Care of Ontario Pension Plan (HOOPP) had a greater rate of return and took far less risk than STRS. Mr. Nesbitt then criticized my analysis for not accounting for currency differences.

The rate of return is a ratio where the numerator and denominator have the same units of measurement. For example, take a door that is 72" high and 36" wide. The ratio of the height to the width is 2:1. Measuring the same door using the metric system it would be 182.88 cm by 91.44 cm, and the ratio would still be 2:1.

The table below shows an example, calculating rates of return for a hypothetical pension. A rate of return is money earned and dividing it by money invested. In the left half of the table, we use US dollars (U.S. \$); the right half of the table is expressed in Canadian dollars (CA \$). The exchange rate for the Canadian \$ is 1.26. (That is, CA\$1.26 = \$1. So, if you are Canadian and planning to visit the U.S. and you want to convert Canadian \$ to U.S. \$ you will have to give C\$1.26 to get \$1 U.S. Conversely, a U.S. resident going to Canada would give about \$0.79 U.S. to get C\$1.)

Using U.S. \$			Using CA \$		
Money Earned	Money Invested	Rate of Return	Money Earned	Money Invested	Rate of Return
\$ 5	\$ 100	0.0500	CA\$ 6.30	CA\$ 126.00	0.0500
\$ 7	\$ 120	0.0542	CA\$ 8.19	CA\$ 151.20	0.0542
\$ 8	\$ 140	0.0571	CA\$ 10.08	CA\$ 176.40	0.0571
\$ 10	\$ 180	0.0556	CA\$ 12.60	CA\$ 226.80	0.0556
\$ 12	\$ 200	0.0600	CA\$ 15.12	CA\$ 252.00	0.0600
\$ 5	\$ 100	0.0500	CA\$ 6.30	CA\$ 126.00	0.0500
\$ 7	\$ 120	0.0542	CA\$ 8.19	CA\$ 151.20	0.0542
	Average	0.0554		Average	0.0554
	Std. Dev.	0.0037		Std. Dev.	0.0037

But the currency in use (U.S. dollar or Canadian dollar) has no bearing on rates of return and their standard deviations. Why? Whether you measure money earned (the numerator) and money invested (the denominator) in US dollars \$ or Canadian \$ (C\$) or euros or rubles, the

outcome of the division – the rate of return – is the same. The rate of return is thus a “pure number”, one not entailing units (like US dollars or CA\$, etc.) at all.

A standard deviation has the same units of measurement as the underlying variable (the rate of return). In this case, since rates of return have no units of measurement, their standard deviations also have no units of measurement. Since, rates of return are pure numbers, their standard deviations are pure numbers, too. Currencies just don't matter. It appears the CEO of the firm that advises STRS on alternative investments doesn't understand basic arithmetic. Perhaps that explains why we lost \$0.5 billion investing in Panda Energy and more importantly why our alternative investments can't beat a real benchmark.

(Q.E.D), *quod erat demonstrandum*, Latin for "Which was to be demonstrated."