1. The calculation of the taxes embedded into investment products

Since mutual funds are trust companies, they cannot hire personnel directly and must call upon external labour for all of their operations. They therefore pay GST and provincial sales taxes on everything they do. For example, in Ontario, the HST of 13%\(^1\) is fully embedded into management fees.

This is not the case for a guaranteed investment certificate, for example. These products are built and managed by banks, which, like all employers, pay no sales taxes on salaries. Hypothesizing that for a guaranteed investment certificate, a bank spends 20%\(^2\) on inputs subject to sales taxes (supplies, subcontracted operations, etc.), the share of these taxes in Ontario therefore represents:

\[
13\% \times 20\% = 2.6\%
\]

In the case of securities like stocks and bonds, there are no embedded sales taxes if they are purchased directly from the issuer. The companies that issue these securities sell taxable products, unlike mutual funds, and can be reimbursed for the sales taxes they have paid.

We start from the hypothesis that this tax is paid entirely by shareholders. Mutual funds account for 27.2% of the financial investments of Canadians.\(^3\) Mutual fund assets experienced extraordinary growth, going from around $25 billion in 1990 to $855 billion in 2015.\(^4\) In this context, it is reasonable to believe that the interrelated demand for mutual fund units is relatively inelastic as compared to other investment vehicles, and therefore that the burden of this tax is fully supported by demand.

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2. For further details on the difference between guaranteed investment certificates and mutual funds, see Danny Cisterna and Maria Scullion, “HST and Investment Plans,” CICA Commodity Tax Symposium, September 27, 2010, pp. 5-7.
The sales tax rate paid by a mutual fund does not depend on its geographical location, but is rather a weighted average of applicable taxes in place in the geographic locations of its shareholders. We use the same effective taxation rate as a recent study\(^5\).

2. The cost of sales taxes for investors

The scenario regarding the cumulative costs of sales taxes assumes an 8% rate of return. We use this rate because it is the approximate rate of return for mutual funds of Canadian equity over the past 14 years.\(^6\) To this, we subtract the management fees before taxes of 2.02%, or of 2.2% with sales taxes.\(^7\) The annual investment is paid on a monthly basis, and interest is compounded monthly.

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>10</th>
<th>15</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulated capital without tax</td>
<td>$5,160.52</td>
<td>$67,955.92</td>
<td>$119,933.31</td>
<td>$282,333.31</td>
</tr>
<tr>
<td>Accumulated capital with tax</td>
<td>$5,155.73</td>
<td>$67,321.71</td>
<td>$118,192.42</td>
<td>$275,026.40</td>
</tr>
<tr>
<td>Cost of taxes</td>
<td>$4.79</td>
<td>$634.21</td>
<td>$1,740.90</td>
<td>$7,306.92</td>
</tr>
</tbody>
</table>

The number of additional months required to reach a given investment objective is obtained by identifying the month during which the accumulated capital with tax reaches the amount of the accumulated capital without tax at the end of the 12\(^{th}\) month of the 25\(^{th}\) year.

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\(^6\) Morningstar, *Canadian Mutual Fund returns (Calendar Returns)*. This is an average of the returns from December 31, 2000 to December 31, 2014 for the following categories of funds: Canadian Equity, Canadian Focused Equity, Canadian Focused Small/Mid Cap Equity, Canadian Dividend and Income Equity, and Canadian Small/Mid Cap Equity.