

OFFICE OF
THE PARLIAMENTARY BUDGET OFFICER



BUREAU DU
DIRECTEUR PARLEMENTAIRE DU BUDGET

Cost Estimate of an Adult Fitness Tax Credit

Ottawa, Canada
September 25, 2013
www.pbo-dpb.gc.ca

Key Points of this Note:

- The mandate of the Parliamentary Budget Officer (PBO) is to provide independent analysis to Parliament on the state of the nation's finances, the government's estimates and trends in the Canadian economy and, upon request from a committee or parliamentarian, to estimate the financial expenditure of any proposal for matters over which Parliament has jurisdiction.
- This note responds to a request by the Member of Parliament for Ottawa-Orleans to estimate the foregone revenue incurred by the implementation of an Adult Fitness Tax Credit (AFTC). The AFTC would enable eligible taxpayers to claim a non-refundable tax credit of up to \$500 in eligible physical activity programming costs against their taxable income each year at a rate of 15 per cent (*i.e.* the maximum annual amount to be offset against an individual's taxes payable would be \$75). The request from the Member asked for three age thresholds for eligibility: over 55 years of age; over 60 years of age; and over 65 years of age.
- The methodology for estimating this tax expenditure consists of identifying the population eligible to claim the tax credit; determining the likelihood of claiming the tax credit; estimating the amount that each person is likely to claim; and applying an elasticity estimate to account for potential behavioural impacts.
- The proposed Adult Fitness Tax Credit would result in a gross impact on the federal Treasury of approximately \$15 million to \$47 million in the year following introduction, with a cumulative cost impact of \$86 million to \$268 million over five years.
- This estimate does not include any incremental costs related to the Canada Revenue Agency's administration of the proposed tax credit or additional tax revenues arising from induced expenditures. It also assumes no supply-side behavioural changes on the part of service providers (*i.e.* organizations will not adjust their pricing to capture any of the effective price reduction).

Prepared by: Duncan MacDonald*

*The author would like to thank Jason Stanton for his constructive input regarding this note. Also the author would like to thank Finance Canada for their prompt reply to the PBO's information request. Any errors or omissions are the responsibility of the author. Contact Jason Jacques (e-mail: jason.jacques@parl.gc.ca) for further information.

1 Introduction

The mandate of the Parliamentary Budget Officer (PBO) is to provide independent analysis to Parliament on the state of the nation's finances, the government's estimates and trends in the Canadian economy and, upon request from a committee or parliamentarian, to estimate the financial expenditure of any proposal for matters over which Parliament has jurisdiction.¹

This note responds to a request by the Member of Parliament for Ottawa-Orleans to estimate the tax expenditure incurred by the implementation of an Adult Fitness Tax Credit (AFTC). The terms of reference for this analysis can be found in Annex A of this note.

2 Proposed Legislative Amendments

Similar to the Children's Fitness Tax Credit (CFTC) enacted in 2007, the AFTC would enable eligible taxpayers to claim a non-refundable tax credit of up to \$500 in eligible physical activity programming costs against their taxable income each year at a rate of 15 per cent (*i.e.* the maximum annual amount to be offset against an individual's taxes payable would be \$75). Unlike the CFTC, the AFTC could not be transferred between family members (*i.e.* spouses could not pool their respective claims).

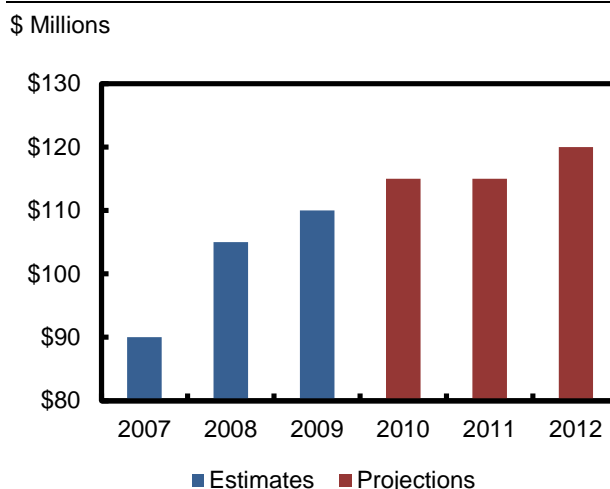
The PBO assumes that, like the CFTC, sporting equipment (*e.g.* running shoes, badminton racquets, bicycles, *etc.*) would not constitute an eligible expense while enrollment in coordinated fitness programs would be eligible.² Figure 2-1 depicts Finance Canada's estimated and projected tax expenditure for the CFTC under these criteria.

¹ <http://laws-lois.justice.gc.ca/PDF/P-1.pdf>. Accessed August 2013.

² Children's Fitness Tax Credit Eligibility – Canada Revenue Agency <http://www.cra-arc.gc.ca/tx/ndvdl/tpcs/ncm-tx/rtrn/cmpltng/ddctns/lns360-390/365/lqblty-eng.html> Accessed August 2013

Figure 2-1

CFTC Tax Expenditure Estimates and Projections



Source: *Tax Expenditures Report 2012*, Finance Canada

The age requirement for eligibility for the AFTC is as yet undetermined. The request from the Member outlined three potential scenarios:

1. taxpayers aged 55 and over;
2. taxpayers aged 60 and over; and,
3. taxpayers aged 65 and over.

3 Costing Methodology and Assumptions

Methodology

The methodology for estimating this tax expenditure consists of identifying the population eligible to claim the tax credit, determining the likelihood of claiming the tax credit, and estimating the amount that each person is likely to claim.

Further refinement of the model consisted of applying estimates of behavioural change as a result of the implementation of the tax credit based on estimates of price elasticity of demand for sports and fitness.

With this model the PBO generated a forecast of the tax expenditure for 2013 to 2018.

Data Sources

For this analysis, the PBO relied on four principal sets of data:

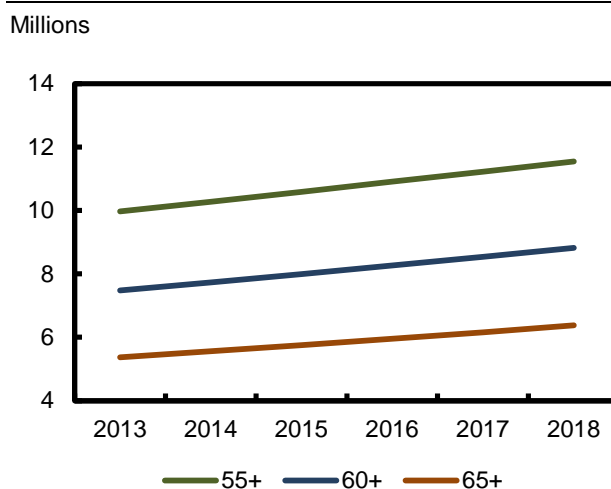
DATA SET	SOURCE
Estimates of the population aged 55 years and older, forecasted to 2018	Statistics Canada
The number of people aged 55 and over that file income taxes	Canada Revenue Agency
The average amount spent on dues for sports by adults aged 55 and over	Statistics Canada
Estimates of price elasticity of demand for physical activity	Peer-Reviewed Research

Population

Population estimates were obtained from Statistics Canada population forecasts.³ The forecast assumed medium growth, which is a total fertility rate of 1.7 births per woman, 0.75 per cent immigration rate, and a growing life expectancy to 84.0 years for men and 87.3 years for women in 2036. These forecasts were based upon trends observed in the Canadian population from 1981 until 2008.

Figure 3-1

Forecasted population age cohorts 2013-2018



Source: Population Projection scenario M1; Statistics Canada

Income Tax Filers

The next step is to estimate the proportion of individuals over 55 years of age that report taxable income, and therefore would be eligible to claim the proposed tax credit.

The ratio of taxable returns to total returns, split by 5-year age group, was obtained from CRA for the most recently available tax year (2010, See Figure 3-2).⁴ This ratio was applied to the forecasted populations, under the assumption that each age cohort continues to file tax returns with a similar frequency. The resulting dataset was a forecast of the population eligible for a tax credit under the proposed AFTC.

A further uptake factor was applied to the population. Previous research into the CFTC observed that not all taxpayers that could claim the CFTC did claim it on their income tax forms. This ratio of actual claimants to eligible claimants

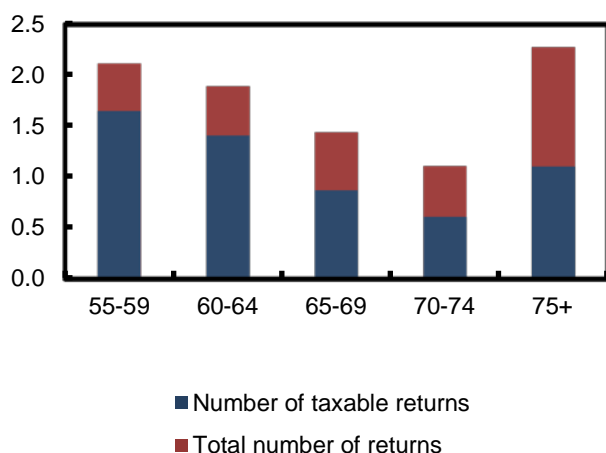
³ Statistics Canada CANSIM Table 052-0005 - Projection scenario M1. Accessed August 2013

⁴ <http://www.cra-arc.gc.ca/gncy/stts/gb10/pst/ntrm/dwnldf-eng.html> Accessed August 2013

(41.8 per cent) (See Annex B) was applied to the population in this analysis.⁵

Figure 3-2
Total and Taxable Income Tax Returns

Millions



Source: Preliminary Tax Statistics 2012, Canada Revenue Agency

Physical Activity Expenditure

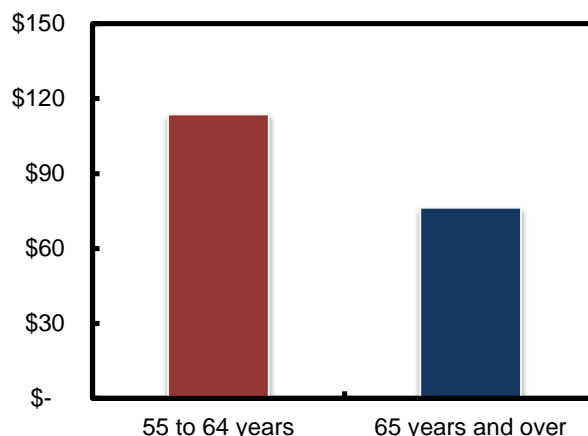
After estimating the size of the eligible population likely to claim the proposed tax credit, an estimate of the average amount of the credit that would be claimed was obtained from the Statistics Canada Survey of Household Spending.⁶ Assuming that only dues and fees for sports and recreational facilities would be eligible expenses the age group average expenditure by household was obtained.

To be able to apply household expenditure to an individual population, the all-ages average household spending on fitness dues and fees

was multiplied by the total number of households to obtain the estimated total spending on fitness dues and fees.⁷ This total was then divided by the total Canadian population in 2011 to obtain the average spending per person.⁸ For an age-specific estimate, the average was modified by the ratio of age-specific to all-ages household spending on dues and fees. This amounted to \$114 for individuals aged 55 to 64, and \$76 for individuals aged 65 and above (See Figure 3-3).

Figure 3-3
Average spending on sports dues and recreation facilities

\$ Dollars



Source: Survey of Household Spending, Statistics Canada

When examining the amount of spending over time, a 3.4 per cent inflation factor was applied to the average physical activity expenditure, based on the 5 year trend of Consumer Price Index (CPI) for the use of recreational facilities and services.⁹

⁵ Spence, J. C., Holt, N. L., Dutove, J. K., & Carson, V. (2010) Uptake and effectiveness of the Children’s Fitness Tax Credit in Canada: the rich get richer, BMC Public Health (10), 356-361
⁶ Statistics Canada CANSIM Table 203-0026 - Dues and fees for sports and recreation facilities. Accessed August 2013

⁷ 2011 Census Profile for Canada – Statistics Canada Catalogue no. 98-316-XWE <http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E>

⁸ See above note

⁹ Statistics Canada CANSIM Table 326-0021 – Consumer Price Index for recreation, education, and reading. Accessed September 2013

As the maximum value of the tax credit would amount to \$75, the estimated tax expenditure was prorated to the ratio of average household expenditure on physical activity per age group to the maximum claimable credit.

Elasticity

The last component of the model entailed applying estimates of demand elasticity (See Box 3-4). Studies that examine price elasticity for recreational services find that physical activity and recreation is not very sensitive to price changes, with estimates of price elasticity falling between -0.36 and -0.9.^{10,11,12,13}

Box 3-4

Price Elasticity of Demand

Price elasticity of demand (elasticity) is a measure of how total demand changes in response to a change in price. Elasticity is reported in terms of percentages.

For example, an elasticity of -0.5 implies that a 1 per cent increase in price will reduce overall demand by 0.5 per cent.

Elasticity values ranging from 0 to -1 imply inelastic demand, while values less than -1 imply elastic demand.

To provide an effective range of potential tax expenditure, the upper (-0.9) and lower (-0.36) bound values of elasticity estimates were applied to the total projected baseline estimate of currently eligible taxpayers.

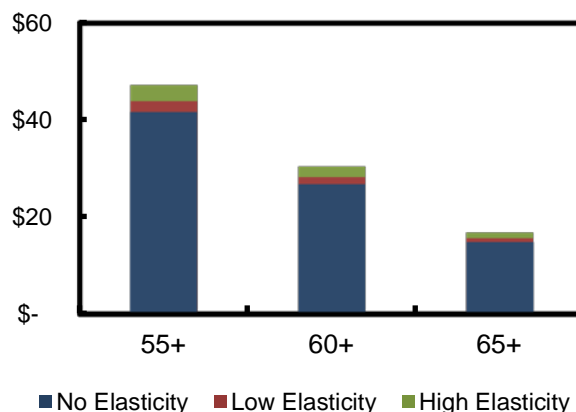
4 Estimated Federal Tax Expenditure

The estimated tax expenditure resulting from the proposed Adult Fitness Tax Credit is displayed in Figure 4-1. The medium-term forecasts are displayed in Figures 4-2 (no elasticity), 4-3 (with low elasticity) and 4-4 (with high elasticity).

Figure 4-1

Estimated 2013 Tax Expenditure from Adult Fitness Tax Credit, with and without Elasticity Factors

\$ Millions



Source: PBO Estimates

The estimated tax expenditure for 2013 if an Adult Fitness Tax Credit were enacted ranged between \$14.9 million and \$47.2 million.

If the proposed AFTC were to be available to taxpayers aged 55 years and older, without elasticity the estimated tax expenditure would increase over time from \$41.6 million to \$56.4 million; the estimated expenditure would rise from \$14.9 million to \$20.9 million if the proposed credit were available to taxpayers aged 65 years and older.

¹⁰ Von Tigerstrom, B, Larre, T., Saunder, J. (2011) Using the tax system to promote physical activity: critical analysis of Canadian initiatives, American Journal of Public Health (101) 8, 10-16

¹¹ D. J. Phaneuf & V. K. Smith (2004) Recreation Demand Models, Handbook of Environmental Economics. A study into price elasticity of demand for the use of California beaches found that elasticity ranged from -0.365 to -0.501

¹² Anokye, N.K., Pokhrel, S., Buxton M., & Fox-Rushby, J (2012) The demand for sports and exercise: results from an illustrative survey, European Journal of Health Economics (13), 227-287
A survey of staff and students at Brunel University found that a 10% increase in price corresponded to a 6.4% decrease in time spent exercising.

¹³ Nelson, J. P. (2001) Hard at play! The growth of recreation in consumer budgets, 1959-1998. Eastern Economic Journal (27), 35-53

Figure 4-2

Projected Tax Expenditure attributable to AFTC, 2013-2018 [No Elasticity]

\$ Millions

Year	55+	60+	65+
2013	41.6	26.8	14.9
2014	44.3	28.7	15.9
2015	47.1	30.7	17.1
2016	50.1	32.7	18.3
2017	53.1	35.0	19.5
2018	56.4	37.3	20.9

Source: PBO Estimates

Figure 4-4

Projected Tax Expenditure attributable to AFTC, 2013-2018 [High Elasticity]

\$ Millions

Year	55+	60+	65+
2013	47.2	30.4	16.9
2014	50.3	32.5	18.1
2015	53.5	34.8	19.4
2016	56.8	37.2	20.7
2017	60.3	39.7	22.2
2018	64.0	42.3	23.7

Source: PBO Estimates

Figure 4-3

Projected Tax Expenditure attributable to AFTC, 2013-2018 [Low Elasticity]

\$ Millions

Year	55+	60+	65+
2013	43.9	28.3	15.7
2014	46.7	30.2	16.8
2015	49.6	32.3	18.0
2016	52.8	34.5	19.3
2017	56.0	36.8	20.6
2018	59.4	39.3	22.0

Source: PBO Estimates

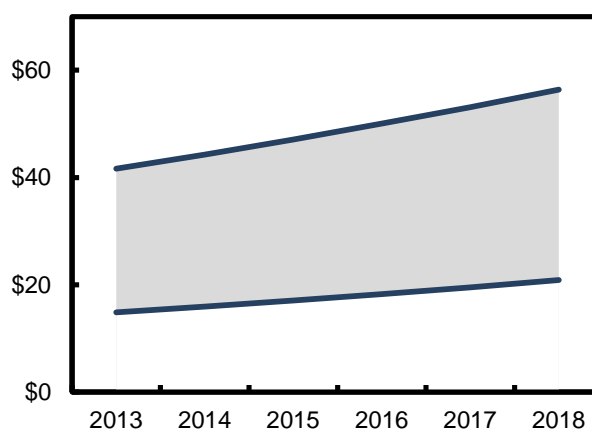
Low elasticity estimates apply an elasticity estimate of -0.36 while high elasticity estimates applied an elasticity estimate of -0.9. These estimates increased the overall 2013 tax expenditure estimates by approximately between \$2.2 and \$5.6 million dollars for the eligible group aged 55 and over.

Figures 4-5 and 4-6 present the range of estimates over the medium term.

Figure 4-5

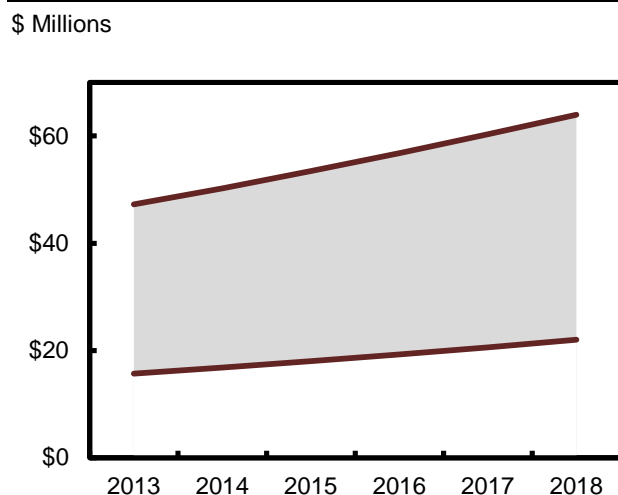
AFTC Tax Expenditure Cost range, 2013-2018 [No Elasticity]

\$ Millions



Source: PBO Estimates

Figure 4-6
AFTC Tax Expenditure Cost range, 2013-2018
[Low and High Elasticity]



Source: PBO Estimates

Comparison with Finance Canada Methodology

As part of the PBO analysis, Finance Canada was contacted to determine if it had produced estimates for this proposal. While it indicated it had not done so, the department did offer an outline of a potential methodology. The estimate methodology followed by the PBO in this note follows the methodology outlined by Finance Canada, with one exception. The exception in which the PBO's methodology differs from Finance Canada's is with regard to the effect the implementation of a tax credit has on the behavior of taxpayers.

Comparison with Other Tax Expenditure Estimates

The PBO was aware of only one other estimate of the tax expenditure of an Adult Fitness Tax Credit. The Centre for Spatial Economics (C4SE) released in December 2007 a report titled *Economic Benefits of an Adult Fitness Tax*

Credit.¹⁴ This report contained estimates for an AFTC under the assumption that the eligible age range included Canadians aged 17 and above. With this assumption C4SE estimated that the tax expenditure would be \$370 million if the AFTC were implemented in 2009.

Figure 4-7 depicts the comparison of the C4SE estimate, prorated to the proportion of the population aged 55 and over, with estimates obtained by the PBO for a similar population for the 2013 tax year.

The PBO estimates with elasticity are much lower than the prorated C4SE estimate. The difference between the two estimates can be attributed to the PBO's estimated individual spending on fitness dues and fees to be significantly less than those used in the C4SE study (approximately \$400 and \$150 for C4SE, and with \$114 or \$76 for the PBO). Additionally C4SE estimated that all people eligible for the tax credit would claim it, while the PBO applied a modifying factor based on research into the uptake of the CFTC.

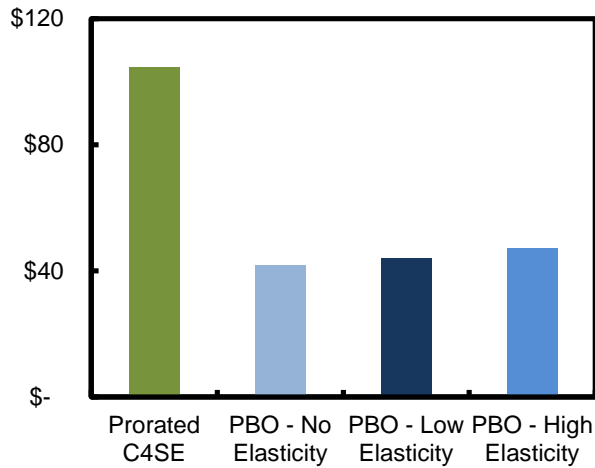
The PBO was unable to obtain any research regarding the level at which increases in physical activity were directly attributable to changes in the tax structure. While some of the increased tax expenditure provided by the elasticity estimates is likely due to physically inactive people becoming active, the PBO was unable to estimate the proportion. As such the PBO did not attempt to determine how much of the increased expenditure was due to physically active people becoming more active, and how much was due to inactive people becoming active.

¹⁴ [http://www.adultfitnessstaxcredit.ca/launch/FIC%20Long\(Eng\).pdf](http://www.adultfitnessstaxcredit.ca/launch/FIC%20Long(Eng).pdf)
 Accessed August 2013

Figure 4-7

PBO Estimates vs Prorated C4SE Estimate

\$ Millions

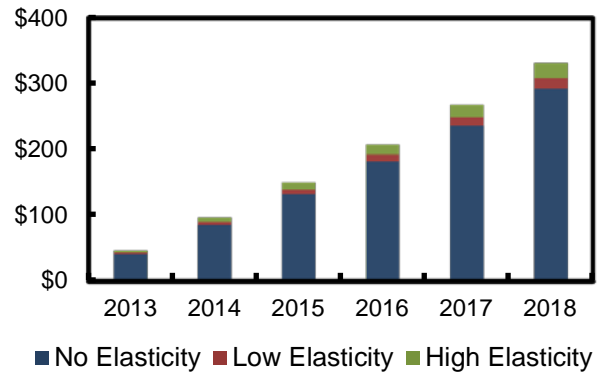


Source: PBO Estimates

Figure 5-1

Cumulative PBO AFTC Tax Expenditure – Age Eligibility: 55+

\$ Millions



Source: PBO Estimates

5 Conclusion

The proposed Adult Fitness Tax Credit would result in a gross impact on the federal Treasury of approximately \$15 million to \$47 million in the year following introduction, with a cumulative cost impact of \$86 million to \$268 million over five years (Figure 5-1).

This estimate does not include any incremental costs related to the Canada Revenue Agency’s administration of the proposed tax credit or additional tax revenues arising from induced expenditures. It also assumes no supply-side behavioural changes on the part of service providers (*i.e.* organizations will not adjust their pricing to capture any of the effective price reduction).

Annex A

TERMS OF REFERENCE

COST ESTIMATE FOR LEGISLATIVE AMENDMENTS TO THE *INCOME TAX ACT*: BROADENING ELIGIBILITY FOR THE FITNESS TAX CREDIT TO SENIORS

Issue

A Member of Parliament has requested a cost estimate of introducing amendments to the *Income Tax Act* that would extend the fitness tax credit to a) seniors aged 55 years and older b) seniors aged 60 years and older c) seniors aged 65 years and older.

The tax credit would be non-transferrable, hence only the individual engaging in the physical activity could claim the credit on his/her return.

Relevant Costs

The proposed amendments to the *Income Tax Act* could result in impacts to Government of Canada's Fiscal Framework. There are two types of relevant costs that could arise:

1. *Pre-existing eligible entities*. These costs pertain to all taxpayers that currently engage in activities that would be eligible under the proposed legislative amendments, who would enjoy a windfall benefit.
2. *Induced activity*. This is an estimate of the number of taxpayers that may be induced to engage in these activities, or increase their level of activity, as a result of the proposed legislative amendments.

Proposed Approach

There are two proposed phases.

- Phase I: Consultation with External Experts

The staff of the PBO will engage in external consultations, which will include the Department of Finance Canada.

- Phase II: Preparation and Review of Existing Cost Estimates

The staff of the PBO would prepare a cost estimate based on the Phase I consultation and literature review. This would include a review of the costing model used to prepare the estimates, as well as the related assumptions, with selected external experts.

Resources & Timeline

This costing estimate would require the work of 1.0 full-time equivalent (FTE) over one month. A final product could be provided to the Member by July 2013.

As work progresses, staff of the PBO may consult with the Member from time-to-time to confirm assumptions required to prepare the costing estimate.

The final report would be presented and reviewed with the Member and subsequently be posted on the PBO website (*see below*).

Communications

Publication of the final report on the PBO's web site would be performed with the concurrence of the Member.

Annex B

Proportion (%) of Canadians with Children Involved in Organized PA (Physical Activity) and their Level of Awareness and Uptake of the Children's Fitness Tax Credit (CFTC)

	Number	Child Organized in PA	Aware of CFTC in 2009	Claimed CFTC in 2007	Plan to Claim CFTC for 2008
Total Sample	2135	547	914	263	331
%		25.6%	42.8%	12.3%	15.5%
Parents with Children Aged 2 to 18	1004	546	557	262	332
%		54.4%	55.5%	26.1%	33.1%
Parents with Children Organized in PA	546	546	354	228	284
%		100.0%	64.9%	41.8%	52.0%

Source: BMC Paper

The above table was taken from the paper by Spence et al.¹⁵ The uptake measure used by the PBO was taken from the claimed CFTC in 2007 while modifiers based on awareness were not applied.

The findings of Spence et al. are consistent with the findings of Fisher et al. in their upcoming paper to be published in the *Canadian Tax Journal*.¹⁶ This recent research utilized detailed tax return data from Statistics Canada's longitudinal administrative databank, as well as employing a survey with questions specific to the CFTC. Fisher et al. observed that 31 per cent of families claimed the CFTC in 2007, compared with 26.1% observed by Spence et al.

¹⁵ Spence, J. C., Holt, N. L., Dutove, J. K., & Carson, V. (2010) Uptake and effectiveness of the Children's Fitness Tax Credit in Canada: the rich get richer, *BMC Public Health* (10), 356-361

¹⁶ Fisher, K. L., Mawani, A., von Tigerstrom, B., Laare, T., Cameron, C., Chad, K. E., Reeder, B., & Tremblay, M. S. (2013) Awareness and use of Canada's Children's Fitness Tax Credit. *Canadian Tax Journal* (61:3), 1-34