Do RESPs Increase Household Saving?

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1.0 Introduction

Governments in many countries intervene in the market for post-secondary education through a variety of means, including direct subsidies, regulation of private tuition costs, and tax expenditures for students and their families. In recent years, governments in Canada and the United States have extended these policies to include new forms of tax assistance to families saving for the future costs of post-secondary education of their children. In particular, the federal government in Canada offers significant tax assistance to education savings through Registered Education Savings Plans and Canada Education Savings Grants. In this paper, we analyze how these programs have affected the savings and wealth of Canadian families.

Registered Education Savings Plans (RESPs) are tax-deferred savings vehicles that permit tax-free accumulation of interest on contributions, with ultimate taxation of income on withdrawal at rates that are typically well below the ordinary tax rates of contributors. Canada Education Savings Grants (CESGs), introduced in 1998, are matching grants of 20 to 40 per cent on contributions to RESPs, which significantly increase the attractiveness of the plan, relative to other taxable and tax-preferred assts available to Canadian taxpayers. RESP assets have been rising fast since the introduction of CESGs in 1998, and the total currently exceeds $25 billion (HRSDC, 2010).

The stated intent of the program is to "encourage families to save early for their children's education" (Department of Finance, 1998). Such a policy may be justified as a means of redressing capital market failures, increasing access to education for low-income families, or of assisting families in planning life-cycle expenditures in an environment of rising education costs. The effectiveness of the policy evidently depends, however, on the extent to which it actually results in new saving by families with university-bound children. The impact of the program on net saving depends on whether households accumulated RESP balances by decreasing consumption, or by reallocating savings from other forms. Indeed, previous research has shown that tax-assisted savings programs may even lead to reduced private saving overall, when tax-assisted savings may easily substitute for savings in other forms. Similar considerations apply to the RESPs, since most households may save in other tax-assisted and tax-exempt vehicles, for which the after-tax return typically equals or even exceeds that of RESPs, but for which non-tax characteristics may differ. In evaluating the policy, it is therefore particularly important to determine whether the growth in RESP balances has come at the expense of accumulations in other tax-free assets or of reductions in household debts.

Our paper examines the effect of RESPs on asset accumulation using cross-sectional data on household assets from the 1999 and 2005 waves of the *Survey of Financial Security* (SFS). We measure households' response to the program as a function of their exposure to the program since the 1998 introduction of the CESG matching grant, which is in turn a function of the number and ages of their children. Preliminary results indicate an increase in RESP balances among eligible households. However, we find little evidence that overall measures of net financial assets, or broader measures of wealth increased among eligible households. Our results are therefore consistent with the notion that the increase in RESP balances was achieved through reductions in other household savings.

Our research has important parallels in previous work on the effects of tax-assisted retirement savings programs, particularly Individual Retirement Accounts (IRAs) and employer-provided 401(k) plans in the United States. As in our work, much of that literature seeks to determine the extent to which contributions to these plans "crowd out" other assets of contributing households. The key empirical challenge in crowd-out is that households that are observed to contribute to tax-assisted savings plans may tend to save more in other forms as well, because of higher unobserved "taste" for savings.

A number of authors have attempted to address this problem by exploiting the fact that 401(k) plans are offered at the discretion of the employer, so that there is substantial variation in eligibility for 401(k)s across households at each point in time. Two early, influential papers on 401(k)s have defined the issues and methodological challenges in the literature. Poterba, Venti, and Wise (1995) examine financial assets of eligible and ineligible households in a series of cross-sections of the Survey of Income and Program Participation (SIPP). They find that the distribution of financial assets among eligible households does increase over time together with 401(k) balances; that is, there is no evidence that contributions are offset by decreases in other financial assets. Engen, Gale, and Scholz (1994) use the same data and same approach as Poterba, Venti, and Wise, but they restrict attention to households likely to be "high savers" by comparing 401(k) contributors to households who are ineligible for 401(k)s but do have IRAs. They find in contrast that the distribution of net assets of 401(k) contributors actually shifted down over time, while that of the ineligible "high savers" increased. They interpret this to mean that 401(k) contributions did offset other saving, particularly additions to home equity.

Bernheim (2002) observed that the approach taken by these papers is flawed if the average unobservable taste for savings among eligibles and ineligibles changed systematically

over time. One natural assumption is that workers with the highest taste for saving gravitated to firms offering the plans in the early years of the program, while others became eligible over time as take-up of the program expanded. If so, then we would expect total financial assets of eligibles and ineligibles to change systematically over time, even in the absence of a direct effect of eligibility on individual savings decisions. Our approach parallels this literature in examining the assets of eligible and ineligible households in repeated cross-sections, but in our research eligibility for the program is a changing function of the number and ages of the household's children alone, which is arguably a more exogenous source of variation than 401(k) eligibility. Of course, there may be other unobserved factors affecting saving that are related to RESP eligibility over time, such as changing cohort effects in saving behaviour, and our analysis pays careful attention to such possibilities. While Milligan (2003) raises some of these questions, they have yet to be answered with formal empirical analysis. Likewise, work on parallel education savings accounts in the United States (Dynarski, 2004; Ma, 2004) has yet to explore in detail the relationship between education savings and other assets.

The plan of the paper is as follows. Section 2 describes the evolution of the RESP and CESG programs over time, and discusses who is likely to make RESP contributions and when. Section 4 discusses our identification strategy, while Section 5 discusses the data and presents (preliminary) empirical results. Section 6 provides intermediate conclusions, and a sketch of next steps in our research.

2. Tax-preferred education savings in Canada

2.1 The RESP Program

The centrepiece of Canada's system of tax preferences for education savings is the federal Registered Education Savings Plan (RESP). RESPs are a tax-deferred savings plan: individuals may make contributions to a plan up to an annual limit. Contributions to the plan are not tax deductible, but income accruing in the plan is not taxed until withdrawal, at which time it is usually taxable at rates well below the ordinary tax rates of contributors.

More precisely, RESP accounts are established on behalf of a particular beneficiary or group of related beneficiaries such as siblings. Beneficiaries are typically children or grandchildren of the plan sponsor, although anyone may in principle sponsor and contribute to an

account. If the plan beneficiary is in a qualifying full-time post-secondary education program,[1] then withdrawals of the accumulated income in the plan (termed Educational Assistance Payments) are treated as taxable income in the hands of the beneficiary rather than the original contributor.[2] Since beneficiaries are full-time students, their taxable income is typically small. As such, RESPs are a tax-deferred asset rather than a tax-exempt asset, but income is ultimately taxed at a rate substantially below the ordinary marginal tax rate of most contributors.

RESPs have existed in Canada since 1974, but take-up of the program remained small until their tax advantages were enhanced through a series of reforms announced in the 1990s and 2000s. These changes are discussed in detail in what follows and summarized in Table 1. In 1996, RESP contribution limits were raised to $4,000 per annum and $42,000 cumulatively for each plan, from $1,500 and $31,500 respectively. In 1998, in the most potentially significant reform – and the key to our empirical work – the government introduced a matching grant for individual contributions, known as the Canada Education Savings Grant (CESG). The CESG was then equal to 20 per cent of total individual contributions to a particular beneficiary each year, up to a maximum of $400 per annum, implying a lifetime maximum grant of $7,200 per beneficiary. Grant payments as well as accumulated capital income, but not contributions, are taxable in the hands of the beneficiary on withdrawal. Unused CESG contribution room can be carried forward to subsequent years, but the maximum grant payable in any year was $800 (and is now $1000). Furthermore, the CESG is payable for beneficiaries age 16-17 only if there has been a sufficient history of early contributions to the plan. Thus the CESG accommodates certain flexibility in the timing of RESP contributions, but contributions early in the child's life are encouraged, and the maximum lifetime grant cannot be obtained unless contributions begin the year the child turns 9 (and unless contributions are thereafter equal the maximum amount that is subject to matching).

Subsequent enhancements of the program have been aimed primarily at increasing take-up among low-income families. In 2004, the federal government introduced the Canada Learning Bond (CLB), an additional grant for RESP beneficiaries born after 2003 in families with net incomes below $35,000. The CLB pays a one-time grant of $525 when the child is born, and an additional $100 in each subsequent year up to the year the child turns 15, for a maximum of $2,025. Receipt of the CLB requires the family to establish an RESP for the child, at which point the CLB amount is transferred into the RESP.

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[1] Limited withdrawals for part-time post-secondary education were permitted beginning in 2007.

[2] If the beneficiary does not attend university by age 21, then accumulated income may be withdrawn by the plan sponsor, when it is included in the sponsor's taxable income and taxed at penalty rates.

In 2005, the CESG matching grant was increased from 20 per cent to 40 per cent for families with incomes less than $35,000, and to 30 per cent for families with incomes between $35,000 and $70,000. The higher matching rate is limited to the first $500 contributed annually to the RESP. In 2007, the government raised the lifetime limit on RESP contributions from $42,000 to $50,000 and eliminated the annual contribution limit. At the same time, the annual limit on the base 20 per cent CESG matching grant increased from $400 to $500, although the lifetime limit of $7,200 remained unchanged.

Aggregate administrative data reported in HRSDC (2010) shows the marked effects on program participation of the 1998 introduction of the CESG. Total RESP assets, depicted in the top panel of Figure 1 of this paper, grew in nominal terms from $4.0 billion at the end of 1998 to $25.9 billion at the end of 2009. As depicted in bottom panel of Figure 1, annual private RESP contributions in turn grew from $870 million to $3.1 billion between 1998 and 2009, not including the annual grant payments under the CESG and CLB programs, which totaled $611.7 million in 2009, and over $5 billion cumulatively since the inception of the grants. Total expenditures on the program also include the tax expenditure for non-taxation of accumulated interest income, which is conservatively estimated by the government to be $180 million at the federal level in 2010 (Department of Finance, 2010); the program also reduces provincial income tax revenues by approximately an additional 50 per cent of the federal tax expenditure. Take-up of the program has been rising steadily since 1998, and it is estimated from administrative data that RESP contributions were made and CESG grants paid in respect of 40.6 per cent of eligible children 0-17 during 2009.

2.2 What are the tax advantages of RESPs and who should contribute?

The data for this study are for accumulated RESPs and other assets of families in 1999 and 2005. Our focus is therefore on the impact on savings in RESPs and other forms of the 20 per cent CESG matching grant announced in 1998; while the enhanced grant for low-income families was available beginning in 2004, its impact on asset accumulations in 2005 is likely to be small.

With the grant, the deferral of tax on capital income, and the reduced tax rate on withdrawals, it is evident that the after-tax return to RESPs exceeds that of ordinary taxable assets. But nearly all Canadian families have access to tax-exempt savings as well. Chief of these are discretionary individual savings accounts called Registered Retirement Savings Plans

(RRSPs), for which initial contributions are tax-deductible, capital income accrues tax-free, and balances are fully taxable as ordinary income on withdrawal. Thus RRSPs correspond to Individual Retirement Accounts (IRAs) in the US tax system, and in an environment of unchanging marginal tax rates offer tax-exempt returns to saving. Unlike IRAs, however, withdrawals from RRSPs prior to retirement age are not subject to penalty tax rates, and so their use is not confined to retirement consumption planning. Indeed, withdrawals from RRSPs prior to retirement age are common: Giles and Maser (2004) report that 39 per cent of RRSP holders made pre-retirement withdrawals at least once in the 1993-2001 period.[3] Moreover, the withdrawal rate ranges from 38 to 48 per cent in the middle three quintiles of the income distribution, suggesting that withdrawals are not confined to those experiencing extraordinary income losses during the year of withdrawal.

The second major tax-free asset is home equity. In the Canadian tax system, capital gains on principal residences and the imputed rent of owner-occupiers are not taxable, and mortgage interest is not tax-deductible. Thus the repayment of mortgage principal earns a rate-of-return equal to the pre-tax rate of (mortgage) interest. Furthermore, since interest paid for the purposes of earning capital income is generally deductible, a strategy of repaying a home mortgage and borrowing on personal account to invest in other taxable assets allows a homeowner to earn the pre-tax safe rate of return while holding an arbitrary mix of safe and risky assets.

It follows that the existing tax-exempt savings opportunities should be close substitutes for RESP savings earning similar rates of return, especially after the 1998 enhancements to the program. To see this, consider an individual investing one dollar in a safe asset *T* years prior to withdrawal for spending on the education of a child. The pre-tax return over the *T*-year horizon is denoted r_T. If the investment is made in an RESP, it receives the marginal CESG matching grant at rate *g*, and the grant and accumulated income are taxable at the child's marginal tax rate *t*. The net return to the RESP investment is therefore

$$R_T^0 = (1-t)\big((1+g)(1+r_T)-1\big)$$

The net RESP return therefore exceeds that of an alternative tax-exempt asset (which is r_T) if and only if

$$R_T^0 - r_T = (1+r_T)g - t\big[r_T + (1+r_T)g\big] > 0$$

3 The figure is for taxpayers with past RRSP contributions aged 20 to 59, and it excludes withdrawals for the first-time purchase of a house or for which the taxpayer is returning to school, which are tax-advantaged.

or

$$t < \left[(1+r_T)g\right] / \left[r_T + (1+r_T)g\right]$$

Evidently, the return to RESPs is decreasing in the tax rate t on withdrawals and increasing in the matching rate g. But the threshold tax rate at which the return to RESP contributions equals the tax-free return is never less than $g/(1+g) = 1/6$ for contributions subject to matching at rate g=0.2. At lower interest rates and over shorter horizons the threshold tax rate approaches 100 per cent, indicating that RESP contributions that are subject to the matching grant must dominate tax-exempt assets as the child approaches college entrance age, because of the grant component. Moreover, since the marginal tax rate on the child's income is unlikely to exceed the lowest tax rate in the Canadian system, which in the period under study was approximately 24 per cent in most provinces and years, the prospective tax on beneficiary's income will recapture some but generally not all of the CESG matching grant.

Since annual contributions in excess of $2,000 did not attract the matching grant in the period under study, it is clear that the marginal return to RESP contributions above the limit could not exceed the tax-free rate r_T. However, to the extent that the child's marginal tax rate is near zero, the difference in returns is small. The Canadian tax system includes an exemption for each taxpayer (including recipients of Educational Assistance Payments) known as the basic personal amount. In 1999, the first $6,794 of the child's income was exempt from taxation because of the basic personal amount, which rose to $8,148 by 2005. A child without other income (say, from a part-time job) would therefore pay no tax at all on RESP income up to the basic personal amount, in which case $R_T^0 = r_T$ in the absence of the matching grant.

In summary, a household with a college-bound child that saves should save through the RESP as long as contributions are subject to matching through the CESG, but above the CESG limit, the returns to other tax-exempt assets likely exceed the returns to RESP contributions. To the extent that households respond to these incentives, RESP balances should therefore be positively related to their CESG contribution room, which is in turn a function of the number and ages of their children. In what follows, we examine RESP balances and other assets in the 1999 and 2005 waves of the Survey of Financial Security. Given that the CESG was introduced in 1998, a household's cumulative CESG contribution room may be defined as the sum of years their children were alive since 1998 and aged less than 18. More formally, for each child age a in year y, cumulative CESG contribution room is $\min(a, y-1998)$. In our empirical work, we treat

cumulative CESG contribution room as a measure of exogenous exposure to RESP savings incentives, and we examine how exposure is related to asset balances.

But households also have discretion in the timing of RESP contributions, since unused CESG contribution room may be carried forward, and the full lifetime CESG can be obtained in respect of a child as long as contributions begin (and equal the maximum thereafter) before the child's tenth birthday.

In fact, delaying RESP contributions has value. Consider investing $1 in tax-exempt form for *k* years, then transferring the proceeds to the RESP to obtain the matching grant. If the annual pre-tax return is constant at *r* and the beneficiary has unused CESG contribution room, the net return to this strategy is:

$$R_T(k) = (1-t)\left[(1+r)^k(1+g)(1+r)^{T-k} - (1+r)^k\right] + (1+r)^k = (1-t)(1+g)(1+r)^T + t(1+r)^k$$

where *g*=0.2 is the matching rate. When $t > 0$, the return to the deferral strategy is increasing in deferral period *k*, since accumulated income is subject to taxation in the RESP but not in the alternative tax-exempt asset. It therefore pays to defer the RESP contribution for as long as possible, subject to making sufficient contributions to the obtain the maximum lifetime CESG grant. (For a household that saves enough to obtain the maximum CESG, this means contributing $4,000 each year from the year the child turns 9 until the year the child turns 17.)

The availability of this deferral strategy means that we cannot establish clear predictions about the relationship between optimal RESP balances and child age in 2005, even if households that save are presumed to follow an optimal contribution strategy. Indeed, the optimal RESP balance may well be zero prior to age 9 and increasing thereafter, if households are presumed to follow a rather sophisticated contribution strategy. Instead, a more plausible hypothesis is that RESP balances in households that save should increase with child age at some greater rate in 2005 than in 1998, especially for households with children older than age 9.

The foregoing discussion deals with the optimal marginal contribution strategy for a family that saves and that has established an RESP. In fact, not all families do have an RESP, and the (largely psychic) fixed cost of establishing the account may in principle exceed the expected tax benefit of doing so. The introduction of the CESG matching grant might therefore be expected to have impacts on savings decisions at the extensive margin as well as the intensive margin, and participation effects might in principle differ in 1999 and 2005. Evidently, since CESG matching ceases at age 17, the maximal tax benefits of contributions are decreasing in the age of the child, especially after age 9. It might therefore be expected that RESP participation

was concentrated among families with young children in 1999, with relatively more participation in respect of older children by the 2005 cross-section. Put simply, establishing an RESP in 1998 or 1999 might not have been worth it for older children whose potential to attract lifetime matching grants was smaller. Our analysis therefore pays close attention to changes in the extensive as well as intensive margin of participation between 1999 and 2005 for families with older and younger children.

3.0 Identification Strategy

3.1 Potentially Observable Responses to the CESG

From the previous section, we can draw a few predictions about the potential impact of the CESG on RESP contributions:

- Parents should contribute $2000 per year per child in order to capture the full annual $400 grant. After that, there is little incentive to contribute to RESP versus other assets. Parents should pursue this strategy for 18 years ($400 per year for 18 years: 0 to 17), the full period of "lifetime" CESG eligibility.
- In terms of capturing the full CESG, delay for one year to the next is not a big deal as far as the overall RESP strategy is concerned, because parents can carry-forward their contribution room into the future (within limits).
- However, after age 10, when there are only 7 grant-eligible years remaining, given the $1000 cap on the CESG for a single year, each year of further delay costs the parent $1000 of CESG (forever). To the extent that parents find themselves with contribution room at this point, delay is very costly. This "use it or lose it" feature of the CESG post 10-years of age MAY induce parents with 10-17 year olds to contribute at a higher rate. Of course, forward-thinking parents should not find themselves in this situation.
- Note also that as the time horizon shrinks (i.e., until the child attends university), the relative attractiveness of the RESP increases (because of the 20% grant) versus other investments. The short-term return of the CESG will dominate other safe investments.
- Sophisticated savers will optimally delay contributions until the threshold of losing CESG eligibility.
- Depending on whether parents are fully forward-looking, or how sophisticated is their investment strategy, they will either contribute smoothly as the child ages, or if they delay,

they should accelerate contributions as the child reaches age 17. Either way, we expect the age composition and number of children to be related to the potential CESG a household has received, and thus its RESP balances.

These observations suggest that the CESG should provide households incentives to contribute to RESPs, and that these incentives are correlated with the age and number of children.

3.2 The Structural Model

Our primary interest is in evaluating the potential crowding out of "other savings" by RESP contributions. The standard framework for such an exercise is to estimate something like:

$$A_{it} = \alpha + \beta X_{it} - \theta R_{it} + \varepsilon_{it}$$

where other assets (or debts) are given by A_{it}, and R_{it} is RESP balances. The degree of crowd-out is indicated by β: for a dollar contribution to an RESP, how much of the dollar is withdrawn from other assets (or added to debt). For well-known reasons, we do not believe that $\text{cov}(R_{it}, \varepsilon_{it}) = 0$, and therefore that estimation of the structural equation is not feasible by OLS. For example, households pre-disposed to saving would have both higher RESP and higher A_{it} balances, imparting a positive bias on the OLS-estimated β.

To address this problem, we need an instrument that shifts RESPs, R_{it}, but does not itself belong in the A_{it} equation. The instrument we plan to use is eligibility (or relative eligibility) for the CESG. The "instrument relevance" assumption is that RESP contributions for a household should be (approximately) proportional, or at least increasing, in the degree of "exposure" to the CESG program. The identifying exclusion assumption is thus that CESG eligibility or exposure (denoted ϕ_{it}) affects A_{it} ONLY through its effect on RESP balances.

The implied reduced form equations for assets and RESP balances can be expressed as:

$$A_{it} = \pi_{01} + \pi_{11} X_{it} + \beta \pi_{22} \phi_{it} + v_{it}$$
$$R_{it} = \pi_{02} + \pi_{12} X_{it} + \pi_{22} \phi_{it} + v_{it}$$

In words, by observing how ϕ_{it} shifts R_{it} relative to shifting A_{it}, we can indirectly estimate β (by 2SLS). The reduced form is of independent interest as well, as it allows estimation of the impact of CESG eligibility on both A_{it} and R_{it}.

3.3 The Quest for ϕ_{it}

Unfortunately, RESP eligibility, ϕ_{it}, is not directly observable. However, because of its relatively mechanical linkage to the age and number of children, we can use a vector of demographic variables summarizing the number and age distribution of children ("kids"), z_{it}, as a proxy for ϕ_{it}. Furthermore, as eligibility for the CESG shifted dramatically between 1999 and 2005 (the two years of our data), we thus have a "pre-" and "post-" dimension to identifying β. For now, we restrict our attention to the estimation of the reduced form equations. Note that as proxies, the z_{it} do not allow us to estimate $\pi_{12,}\pi_{22}$ exactly. Instead, we estimate:

$$A_{it} = \pi_{01} + \pi_{11}X_{it} + \tilde{\pi}_{12}\tilde{\phi}_{it}(z_{it}) + v_{it}$$
$$R_{it} = \pi_{02} + \pi_{12}X_{it} + \tilde{\pi}_{22}\tilde{\phi}_{it}(z_{it}) + v_{it}$$

We use "tildes" to note the slippage between a household's actual eligibility, and its eligibility as proxied through a summary of its age-composition and number of children. Note also that while we may be able to defend the exclusion restrictions (and thus identification) of ϕ_{it} itself, we require fresh (restated) assumptions about exclusion restrictions for $\tilde{\phi}_{it}(z_{it})$.

One very simple example of $\tilde{\phi}_{it}(z_{it})$ is the number of kid-years of "exposure" to the CESG. This can be calculated for households in 1999 and 2005. Only children aged 17 or younger are eligible for the grant, and by 1999, only those households with children under 17 (or who just turned 18) would have had any eligibility, a maximum of one year's exposure to the CESG per child. For those households in 2005, the number of kid-years of exposure depends on the ages and number of children, and the number of years between 1998 and 2005 that they have been eligible for the grant.

Instead of forcing CESG exposure through this single index ("exposure"), an alternative more flexible approximation of $\tilde{\phi}_{it}(z_{it})$ would be:

$$\tilde{\phi}_{it}(z_{it}) = \sum_{DEMS} \delta_k n_{kit} + \sum_{DEMS} \delta_{Pk} POST_{it} n_{kit}$$

Given that we will always control for the base "POST" effect (a Year 2005 dummy), this specification flexibly relates potential RESP eligibility to the number of children in different age categories, interacted with a "POST" indicator (for post-1998 when the CESG was expanded). Identification then rests on using the coefficients on $POST_{it} n_{kit}$ in the reduced form. In other words, this yields a differences-in-differences identification strategy, where the potential exposure to "treatment" is identified by changes in the effect of household child composition on household RESP and savings decisions. One advantage of this more flexible specification is that it allows us to be more agnostic about how households respond to CESG eligibility: they may or may not contribute in proportion to "kid years" of CESG eligibility, and may (for example) contribute more at the end of their children's years' of eligibility, as they get closer to university.

3.4 Threats to identification (and other issues)

We will discuss problems of identification in more detail when we present the empirical results (where they are more apparent, and less abstract). But a few issues are worth discussing in advance. We consider the various dimensions of identification involved in the "DD" strategy.

3.4a. "Pre" versus "Post"

One problem in identifying the crowd-out effect of RESPs is that even if we were reasonably comfortable in attributing the increase in RESP contributions post-1998 to the CESG, it would be nearly impossible to justify attributing changes in other assets to the introduction of the CESG. Clearly, there were significant changes in asset holdings for all Canadians that had nothing to do with changes to the RESP program.

3.4b. Comparing households with, and without, children.

To address the obvious problem in simple pre-post comparisons, we need a control group. Only households with children are allowed to open RESPs (not quite true, but reasonable).[4] To the extent that we can control for the fact that households without children may otherwise have

[4] For example, grandparents and other relatives can open RESPs on behalf of children, though the total CESG per beneficiary are strictly enforced.

different savings behavior, we could then compare the evolution of the asset holdings of these two groups of households. To ensure the best possible construction of a control group, we could also use "matching procedures" to select households that look most similar to those households with children (the "treated" households).

The pitfalls of this procedure are also well-known. We need to assume that there were no differential trends in asset holdings or savings behaviour of these households. Furthermore, as these households are generally of a different age, we need to assume that there are no cohort-effects in the evolution of asset holdings, or at least that we can control for them.

3.4c. Comparing households with different ages and numbers of children

The ideal approach is to restrict our analysis to only households that have children, and compare the changes in RESP and asset holdings of the most similar households. This has the advantage of minimizing the degree of heterogeneity between treatment and control households. For example, we can compare households with older and younger households, before and after 1998. This allows us to see whether the household child-age profile for saving for university changed with the introduction CESG.

There are also potential issues with this approach. First, there may be cohort effects (differential trends) that affected households with children growing up before and after 1998. Second, this strategy works best if there is a well-defined (and interpretable) shift in the link between child age and RESP balances that can be observed (in the opposite direction) for other assets. To the extent that the shift in the age profile is weak, this is a less powerful identification strategy. And third, the sample size falls once we start cutting the data more finely. This lowers the level of precision, and also increases the chances that outliers (or other influential observations) may swamp our analysis.

3.5 Heterogeneous Treatment Effects

From a policy evaluation perspective – did total savings increase in response to the CESG program – it makes sense to look at the overall average (or total) population holdings of assets including RESPs. The average, however, is likely to hide important detail if we wish to understand the mechanisms driving changes to asset holdings and potential crowd-out. Even if we only wish to understand the IV estimates of the structural equation, it is important to recognize the likely heterogeneity of response to the CESG program.

First, as we know from the literature on LATE, our IV estimator (once implemented) will only estimate the effect of the program on "compliers," those households whose savings behaviour was changed by the CESG program. There are two groups households that will yield little insight into the crowd-out question:

- Households that would never respond to the CESG. Such households, for example those whose children have no plans on attending university, or households with few resources to save, will not change their behaviour in response to the CESG.
- Households that are saving inside RESP's anyway. For such households, the CESG represents a pure income effect that could in theory actually reduce overall saving. Worse than being non-compliers, such households may violate the monotonicity assumption that underlies our instrument (we doubt many households would respond this way, but cannot rule it out).
- A related group of households (who are technically behind the "crowd out" story) are those households who are saving for their children's education, and cannot be induced to save more by the CESG. Such households may simply switch their asset composition into RESP's to exploit the grant.

A full treatment of crowd-out, especially from a behavioural perspective, therefore requires exploring the responses of households with different propensities to contribute to RESPs in the first place.

5.0 Empirical Results (Preliminary)

5.1 Data

We use the full RDC versions of the 1999 and 2005 *Survey of Financial Security* (SFS). Both surveys are detailed households surveys of household asset and debt holdings by finely defined categories, along with a rich set of household characteristics. The full sample sizes are approximately 16,000 households in 1999, and just over 5,000 in 2005.[5] Given the focus on wealth, the survey sample design was heavily skewed to wealthier households, yielding better information on aggregate Canadian asset holdings. As a result, it is especially important to use household weights when reporting means and coefficients designed to reflect the population, and

[5] For a detailed discussion of the 1999 SFS, and the various asset, debt, and net worth categories, see Milligan (CJE, 2005b).

we do so in all reported results. As we will note, however, the weighting of the data raises a number of substantive and practical concerns.

Given our focus on RESPs, we restrict our analysis to those households most likely to be affected by the change in policy: this includes households with children, and similar (control) households without children. Our working sample is thus composed of (1) married couples aged 20-59 with children between the ages of 0 and 17; (2) Single parents aged 20-59 with children aged 0 to 17; and (3) married couples aged 20-59 *without* children aged 0 to 17 (though they may have older children). Essentially, this means we exclude from our analysis all unattached individuals, and older couples who either never had children, or whose children have left home. Note that the survey definition of "household" is based on residence, which means that we have no information on children living away from home (most notably, those children at university). This, unfortunately, limits our ability to carefully study RESP withdrawals, or to identify households with children attending university. Finally, while we may occasionally use the language of "flows" (like "contribution" or "withdrawal"), in fact all of the key asset and debt variables in the SFS are stocks measured at a point in time (the middle of the survey year). In particular, we do not have data on RESP contributions or withdrawals.

In the results that we report in this draft of the paper, we otherwise include all sampled households available in the RDC versions of the SFS: we make no attempt at this stage to account for outliers, or to exclude influential observations. Given the skewed nature of wealth data, and the preponderance of "zeroes" for some key variables, this means our current results may be sensitive to a small number of observations. Furthermore, we use the Statistics Canada weights taken at face value, and these weights can considerably affect the results when interacted with the skewed data. With those warnings, we now turn to a more detailed examination of the asset and debt data, focusing on changes between 1999 and 2005. Note also that we adjust all nominal values to a common year, using the CPI as deflator.

5.2 What Happened to Household Wealth Between 1999 and 2005?

In Table 2 we report unconditional balances of household assets and debts for various sub-populations that pertain to our identification strategy. In Table 2A we show households with and without children (aged 0 to 17), while in Table 2B we focus only on households with children: those with older children (aged 10 to 17), and those without older children (only children 0 to 9). The purpose of Table 2B is to see the extent to which having older children (and

thus potentially more exposure to the CESG) is related to RESP and other balances. We can also evaluate how well families without children can serve as a control group. For each sub-sample we report the level of assets or debt in 1999 and 2005, as well as the change between years. For Table 2A and 2B, in the last column we also report a crude "Difference-in-Difference" ("DD") estimate of the pre-post difference in asset holdings comparing the two subsamples.

We begin with households with children (aged 0 to 17). RESP holdings increased from $1,023 in 1999 to $3,266 in 2005, an increase of $2,243. RESP holdings therefore tripled over this short time period. Much, but not all, of this increase was caused by increases in participation, which went from about 16% to 33% of households with children (more than double). Clearly, the CESG seems to have made RESPs more attractive. By comparison, households without children have only modest RESP holdings, most likely the legacy of children who have already left home. The "DD" estimated effect of the CESG (in this comparison) is the difference in RESP holdings between these groups, approximately $2,000 for RESP balances. What happened to the rest of the household balance sheet?

For example, to choose one asset class, do we see evidence that RRSP contributions declined to offset the increased RESP holdings? In fact, RRSP balances actually increased by $7,364 for families with children. While RRSP balances are much higher (by $10,000) for families without children, the *increase* between 1999 and 2005 was actually smaller than those households with kids. This yields a positive "DD" estimate of the effect of the CESG introduction. We do not wish to interpret this change causally. Instead, it points to the fact that there is no evidence that RRSP balances declined to help pay for the RESP contributions. If there is crowd-out, RRSP contributions do not seem the likely source. "Other Financial Assets" (stocks, bonds, and mutual funds) follow the same pattern. Indeed, there is an even more striking relative increase of these holdings for families with children: a "DD" estimate of over $15,000. Clearly, no evidence of crowd-out with those assets. The sub-total of all financial assets therefore shows a significantly improved balance for families with children, of which RESP improvements are less than 10% of the total improvement. The next category of assets includes housing, other real estate, vehicles, and household contents. Here we also see relative gains for families with children, especially in real estate. Combining all assets, non-pension non-business wealth increased by over $60,000 for families with children. This dwarfs the effect of RESPs by a factor of more than thirty. If we expect to find evidence of crowd-out, it will be challenging to detect it with these magnitudes.

Of course, assets may have increased at the expense of increased debt. Indeed, we find that families with children increased both their mortgage and non-mortgage debts by a significant $25,026 – an $8,000 greater increase than families without children. On its own, this may be consistent with crowd out, but the magnitude is too high to plausibly link to increased RESPs. Next, we can look at measures of "net worth." There are a variety of ways that we can combine the assets and liabilities of households to look at changes in their net worth. One way is to highlight financial variables only, and exclude housing, mortgages, and pensions. The objective here is to partial out the large share of financial activity devoted to housing and RPP retirement. To do so we create "Net Financial Wealth," which is the sum of financial assets, subtracting debt in credit cards, student loans, and other loans. The increase in net financial wealth for families with children is less dramatic than the picture that emerges when including housing. Net Financial wealth improved $25,026 for these families. This still compares favorably with families without children, who saw their net financial wealth decline by five thousand dollars. Finally, we report a "grand total" of net worth, including housing and the value of registered pension plans. Net worth increased by over $100,000 for families with children, compared to an increase of only $61,388 for families without children (an implied "DD" estimate of a $44,406 swing in favour of families with children). Why the large relative increase? The biggest elements of the increase are: "Other Real Estate," "Other Financial Assets," "Principal Residence," and "Business Equity." Of these four categories, we suspect that three of them (both housing measures and business equity) are subject to measurement error, heavily skewed, and unequally distributed. The sample means are potentially sensitive to outliers for these variables. The "Other Financial Assets" variable is probably better measured, but is still skewed.

In this table we can already anticipate the challenges faced in identifying potential crowd-out. At the bottom of the table we report sample means for some key explanatory variables. Our focus is on CESG eligibility, and a natural measure of this is the number of potential "kid years" that a household could collect the CESG. We denote this variable "exposure", and it is calculated by the number of years a child was between 0 and 17 years old, after the introduction of the CESG in 1998.[6] In 1999, the typical household with children had 1.80 "kid years" of CESG eligibility (e.g., 1.8 children eligible for 1 year each from 1998 to 1999). In 2005, after the CESG

[6] The number of children is only reported in age categories: 0 to 5, 5 to 9, 10 to 14, 15 to 17, 18 to 19, and 20 to 24 (and 5-year groups for subsequent ages). We use the mid-point of the age category to impute potential CESG eligibility for each age-group, multiplied by the number of children in each age category. We experimented with alternative imputation procedures (i.e., the min or max age in the group), and it made no difference.

had been in place six more years, exposure increase to 10.70 kid-years per household, an increase of 8.9 kid-years. RESP holdings increased by $2,243 (as already noted), for an average implied increase of RESP's of $250 per kid-year. If someone was wealthy enough to contribute the maximum RESP per year, and received the maximum CESG per year, assuming no growth in asset values, we would expect about $2750 per year in RESP contributions over the 18 years of CESG eligibility. Of course, very few households can afford to contribute at the maximum rate. Given the level of participation, the implied level of contribution in response to the CESG is completely reasonable, if a bit low. By contrast, total debt increased by $25,026 for households with children. This works out to just over $2,800 of increased debt per kid-year of CESG eligibility. Of course, we can difference-out the common increase in debt that occurred for households without kids, so that the "DD" increase in total debt is only $8,337, still almost $1,000 per kid year of CESG eligibility. It is difficult to line up as crowd out an increase in RESP contributions of $250 per kid-year with an increase in debt of $1,000 per kid-year. Similarly, the large relative increase in overall asset holdings does not square with crowd out.

Our conclusion at this point is that while the RESP results look "reasonable," the results for other assets and debt are not. Either the wealth distribution for families with young children has shifted dramatically, genuinely swamping the effect of RESPs, or the estimated averages are misleading. Perhaps both explanations are valid. In any event, in future work we will explore other quantiles of the wealth distribution, and also evaluate the extent to which the sample weights correctly adjust for the over-sampling of wealthy households.

Table 2B repeats the same exercise, except the analysis is restricted to those households with children 0 to 17, and the comparison is between households with and without "older children" 10-17 years of age. A number of findings are worth reporting. First, RESP balances increased significantly more for families with older children (a relative increase of $1,170). This lines up with these households' relative increase in exposure to the CESG (of 5.47 kid-years), and yields an estimate of about $200 in RESP contribution per kid-year. This is remarkably similar to the estimate based on comparing families with and without children. Using changes in the response of RESP holdings to the age and number of children pre- and post-1998 seems like a reasonable strategy for identifying the impact of the CESG on RESP contributions.

Some of the less than clean results for other financial variables, however, appear in this table as well. Of particular note, "Other Financial Assets" increase dramatically for families with young children – implying a "crowd out" of $16,098 investments in such assets (from only $1000

in extra RESP holdings). The change seems potentially driven by an unusually low level of holdings of financial assets for this sample in 1999, and issue that merits further research. On the other hand, the relative increase in "other real estate" of $44,000 is also very high (in favour of families with older children). Business Equity also increases a large amount for families with older children. The results for debt, on the other hand, are much more reasonable. Indeed, if this was our only other financial variable, we would see an increase of RESP holdings for families with older children of $1,000, almost exactly offset by an increase in debt of $1,000: Perfectly plausible crowd-out.

In summary, Tables 2A and 2B show the potential that our identification strategy holds. On the other hand, they demonstrate the fragility of our results given the skewed nature of the data on wealth and debts. We now turn to a slightly more formal presentation of these results, based on regressions.

5.3 Regression Results

In this section, we implement the more formal "difference-in-differences" procedure for estimating the reduced form equations described previously. Our objective is estimating the population regression function:

$$E\left[y_{ik} \left| \tilde{\phi}(z_i), X_i \right. \right]$$

where y_{ik} is the household *i* balance of asset or debt of type *k*, $\tilde{\phi}(z_i)$ is our estimate of household exposure to the CESG (based on the number age composition of children, pre- and post-1998), and X_i is a vector of household controls. As we are interested in population means (and the effect of the policy on the population mean), we include all observations (including zeroes), and we also employ the sample weights.

We have two variations of our regression model. The most flexible is:

$$y_i = \beta_0 + \beta_1 D2005 + \sum_{j=1}^{J-1} \delta_j DEMS_{ji} + \sum_{j \in KIDS} \phi_j D2005 \times DEMS_{ji} + \gamma' X_i + u_i$$

Our "DD" estimates come from the estimated ϕ_j, the interactions between the "post" indicator (D2005, a dummy for year 2005) and the demographic variables capturing the number of children in each age group (0-4, 5-9, 10-14, and 15-17). We also include interactions between D2005 and "children" aged 18-19, and 20-24, but do not use these coefficients to estimate the impact of the CESG: households with these ages of children may be drawing down RESP balances. Note that

we include the D2005 indicator in the base specification: we do not attribute any simple "pre-" and "post" changes in asset/debt holdings to the CESG, but allow a general D2005 effect. Similarly, we include all the children demographic variables in our base specification: identification of the DD is based entirely on the interactions, or changes in the asset-children profile between 1999 and 2005. As covariates we include a set of variables designed as much as possible to control for differences across households that may be correlated with the 2005 time dummy interacted with the number of children. These variables include the age and age-squared of the household head and spouse, the education level of the head and spouse, household income, an indicator of home ownership, immigrant status, region, and urban status.

The second specification is based on the "exposure" variable, but is otherwise similar:

$$y_i = \beta_0 + \beta_1 D2005 + \sum_{j=1}^{J-1} \delta_j DEMS_{ji} + \phi EXPOSURE_i + \gamma' X_i + u_i$$

Recall that exposure is the number of "kid years" that the children in the family were eligible for the CESG (post 1998). This variable builds in the interaction between D2005 and child-age and composition. Results are reported in Table 3 for a selection of financial variables.

In the top panel we report estimated coefficients on the "DD" variables based on the most flexible model. Turning first to RESP balances, we see significant estimated coefficients for children in the older age categories (10 to 14 and 15 to 17). This is what we would expect. In the second panel, we pool the age categories to obtain more precision, estimate that the CESG induced about $1261 of RESPs for children aged 10-17, and just under half of that for children 0-9. In the bottom panel, we present the most restrictive specification, with the demographic interactions channeled through the exposure variable. Similar to the back-of-the-envelope results from Table 2A, we estimate RESP balances of about $241 per kid-year of CESG eligibility. In the second column, we report results for RESP participation, and find that RESP participation is also highly correlated with the number of children, and the CESG exposure variable. In summary, the RESP "DD" results seem quite reasonable.

Before turning to the other assets, it is worth considering the implied economic significance of these coefficients. They suggest that for the average household, 18 years of CESG eligibility would yield approximately $4,500 of additional savings. If we adjust for the number of RESP participants (33% of households), this increases to *approximately* $13,600 of additional savings conditional on being positive (and presumably, conditional on potentially attending university). This is an economically significant number. Note, however, that it overstates the

extent of actual new savings, as part of this balance includes the CESG (so that only about $11,300 is from the household, the remainder from the government – ignoring asset growth). This also ignores possible crowd-out, and is thus an upper bound on the impact of the CESG.

Even taken as an upper-bound, however, in looking for crowd out we are looking for the "offset" of $1,200 per (older) child, where household non-pension wealth is over $300,000 in 2005, and household debt is $86,500 in 2005. This will be challenging, especially with noisy, skewed data.

In the next column, we explore the potential impact on RRSPs. RRSP's would seem an obvious margin for households to adjust as they shift funds between registered accounts. However, we find no significant link between "CESG Exposure" and RESP balances – there does not seem to have been any response by households to their RRSP contributions. The coefficients, while imprecisely estimated, are also of reasonable magnitude, sufficient for us to tentatively conclude that there is little evidence of RESPs crowding out RRSPs. The results for other assets are muddier, imprecisely estimated, and occasionally implausibly large. At this point we are not willing to draw strong conclusions either way, even though some of the coefficients are economically large. As we noted in our discussion of Table 2, we believe that there are some large swings in asset/debt holdings that are correlated with household child ages that may not be genuine, or may be driven by outliers. At the most for now, we are willing to conclude that there is no evidence that RESP contributions (proxied by CESG eligibility) had a detectable and reliable effect on overall net worth balances.

6.0 Intermediate Conclusions and Next Steps

While our reported results come with caveats, a number of substantive conclusions emerge, and serve as a starting point for the remainder of this project:

- Our first-stage "reduced form" equation is estimated reliably, and yields reasonable results: The introduction of the CESG appears to have significantly encouraged Canadians to open and contribute to RESPs. The effect of the CESG on RESP behaviour is well reflected in a distinct shift of the link between the age and number of children and RESP holdings after the introduction of the CESG in 1998.
- As a potential instrument for RESP holdings, CESG exposure, or more specifically interactions between post-1998 and the age and number of children, therefore seems to shift

RESP holdings sufficiently to yield a useful source of identification of the impact of RESP balances on other asset holdings.

- In principle, these instruments should also satisfy the exclusion restrictions necessary for identification of the structural crowd-out equation.
- Estimation of the remaining equations of the Reduced Form yield mixed results. For RRSPs, an "obvious" alternative savings vehicle for Canadians, we find no evidence of crowd-out: The well-defined exposure to RESP ("DD") variables are unrelated to RRSP balances, and the coefficients are reasonable. For other assets and debt measures, however, the estimated coefficients are implausibly large. Given the skewness of the data, and the oversampling of rich households that may only imperfectly be addressed by re-weighting, this lack of robustness should come as no surprise.
- Even with the large conceptual and empirical standard errors around the other asset and debt variables, however, the changes in wealth holdings between 1999 and 2005 suggest that the impact of RESPs on the overall savings position of Canadians is likely to be small, at least in aggregate.

From these intermediate conclusions, a few obvious next steps are clear:

- Wealth data are notoriously difficult to work with. In this draft, we have taken the data "as is" from the raw RDC files. We have spotted a few important anomalies that need further investigation, but more generally, we need to explore the wealth data in more detail to address issues of empirical robustness.
- While the population mean is a useful starting point in the wealth distribution, we need to broaden our focus. Most obviously, it makes sense to look at quantiles that are more robust to outliers, and to also consider transformations of the level of wealth (e.g., to logs) that will yield distributions more amenable to regression analysis.
- In a similar vein, we believe that a quantile-based approach will allow us to address issues concerning heterogeneous responses to the CESG: most obviously, higher income households may be better positioned to take advantage of the program. Indeed, as underscored by Milligan (2005a), participation is concentrated in the upper part of the wealth distribution. Pursuing this angle also allows us to update Milligan's analysis of the distributional features of the RESP program: Is it primarily the rich that benefit form the CESG?

- That said, it is not straightforward to simply switch from "means" to "medians" for estimating our structural crowd-out model. The quantile approach will be most suited to estimating the "DD" reduced forms.
- We also expect heterogeneous responses in other dimensions. For example, the whole point of the RESP program is to help households save for their children's post-secondary education. This will only be relevant for parents who expect their children to go to university or college. Preliminary results suggest that the response to the CESG varies with parental education (one predictor of children's educational attainment).
- Why is RESP take-up so low? It may also be the case that RESPs are simply not a very good investment, especially in the presence (now) of TFSAs. We also plan to provide more background analysis on the potential optimal responses to the CESG and RESP programs. This may also better allow us to interpret what be a modest impact of the RESP program on household savings. If that is the case, the obvious follow-up question is how or whether the RESP program could be changed to better meet its objectives.

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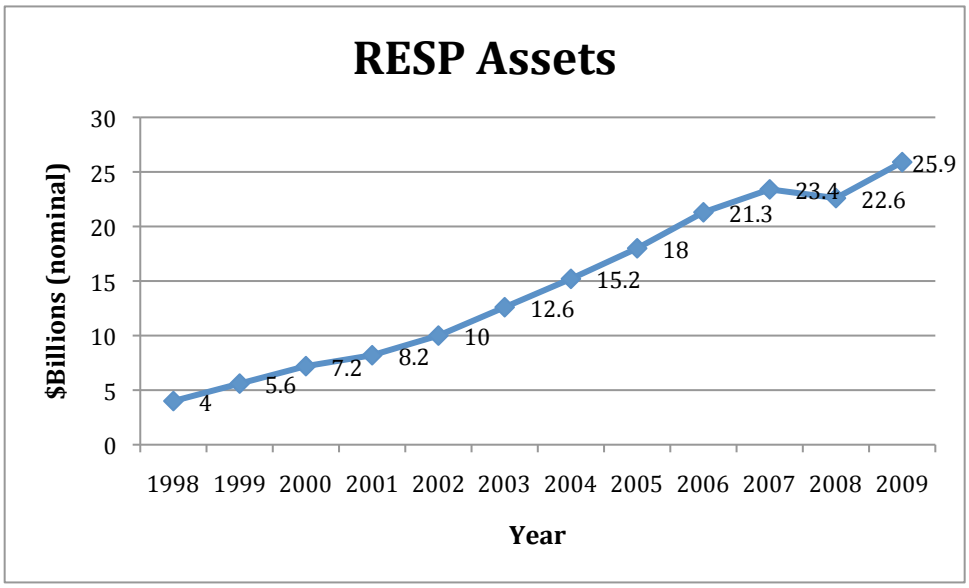
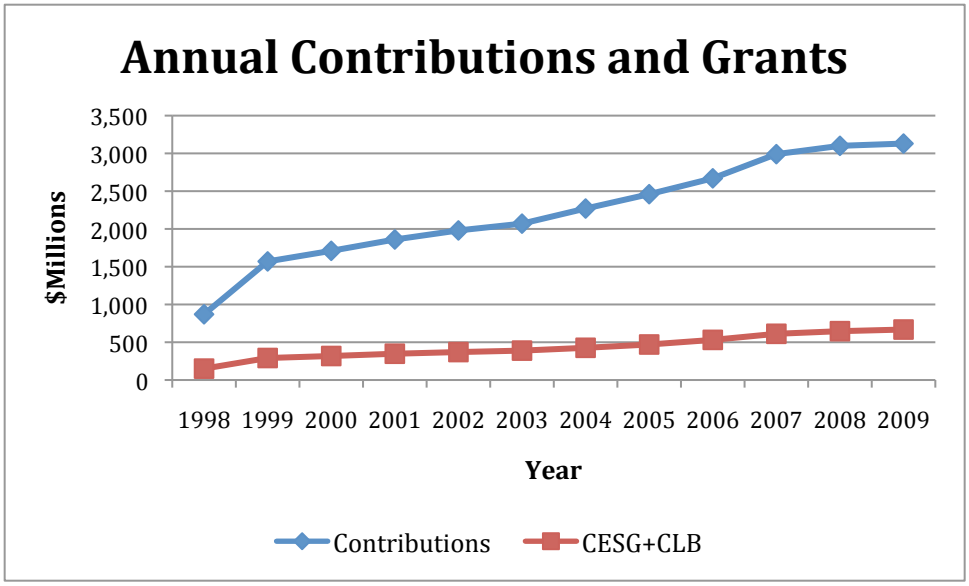
Figure 1: Evolution of Aggregate RESP Assets and Contributions





Source: Based on statistics reported in HRSDC (2010)

Table 1
Evolution of RESP Program (Key Parameters)

Year	Changes/Features of Plan

1974-1995	• Annual contribution limit of $1,500 per year, to a cumulative maximum of $31,500 per beneficiary.
	  ○ Contributions (e.g., made by parent), withdrawn by beneficiary (student) are not taxable.
	  ○ Accumulated income is taxable in the hands of the beneficiary (student).
	• *Advantage*: Investment earnings taxed at the (presumably) lower rate of the beneficiary (student).

1996	• Annual contribution limit increased to $4,000 per year, and a cumulative maximum of $42,000 per beneficiary.

1998	• Introduction of the CESG (Canada Education Study Grant)
	  ○ Annual matching grant of 20% on the first $2,000 of contribution (yielding a maximum annual CESG of $400).
	  ○ Only applies to children aged 0 to 17.
	  ○ Lifetime maximum CESG of $7,200 dollars per beneficiary.
	  ○ Taxable in hands of beneficiary(student)
	  ○ Carry forward of unused grant eligibility through to age 17
	  ▪ Catch up of unused CESG room is based on 20% of contributions to a maximum annual CESG of $1,000 per beneficiary.
	  ▪ Beneficiaries aged 16 or 17 can only receive CESG grants if they had participated before age 16 (either $2,000 in total contributions, or a minimum of $400 in contributions in at least four years prior to turning 16).

2004	• Introduction of Canada Learning Bond (CLB)
	  ○ For low-income families eligible for the National Child Benefit supplement (NCBS).
	  ○ A one-time grant of $525 for a child born after January 1, 2004, contingent on opening an RESP (no contribution otherwise required)
	  ○ An additional contribution of $100 per year, up to 15 years.
	  ○ If the child does not attend post-secondary institution, the CLB must be returned.

2005	• Introduction of Additional CESG
	  ○ Extra 20%, for a combined “Basic” + “Additional” CESG of 40%, for those families with less than $40,970 income (in current 2011 dollars).
	  ○ Extra 10%, for a combined “Basic” + “Additional” CESG of 30%, for those families with $40,970 to $81,941 income (in current 2011 dollars).
	  ○ This applies only to the first $500 contributed to an RESP
	  ○ Income brackets are the same as the Canada Child Tax Benefit (CCTB)
	  ○ The Additional CESG is made over and above the Basic CESG.
	• Increased Value of CESG for everyone
	  ○ Maximum annual CESG increased to $500 (still at the rate of 20%, though on the first $2,500 of RESP contributions)
	  ○ Lifetime limit of $7,200 unchanged.

2007	• Elimination of annual limit on RESP contributions (NO change to CESG limits: they stay the same). • Lifetime cumulative contribution limit increased to $50,000

Table 2A: Mean Household Assets and Liabilities, 2005 versus 1999

	With Kids 0 to 17			Without Kids 0 to 17			
	1999	2005	DELTA	1999	2005	DELTA	"DD"
RESP Participation	16.3%	33.2%	16.9%	1.3%	5.8%	4.5%	12.4%
Bank Accounts	$3,901	$5,689	$1,788	$5,973	$7,747	$1,774	$14
Other Financial Assets	$20,405	$26,497	$6,093	$31,468	$22,449	-$9,019	$15,111
RESP	$1,023	$3,266	$2,243	$94	$499	$405	$1,838
RRSP	$27,662	$35,026	$7,364	$44,804	$48,879	$4,076	$3,289
RRIF	$333	$236	-$98	$796	$494	-$302	$204
Financial Assets (subtotal)	$53,324	$70,714	$17,390	$83,134	$80,068	-$3,066	$20,456
Principal Residence	$109,774	$158,118	$48,343	$116,904	$156,381	$39,477	$8,866
Other Real Estate	$20,002	$51,734	$31,732	$27,841	$28,236	$396	$31,336
Vehicles and Contents	$34,838	$36,038	$1,201	$40,845	$40,087	-$758	$1,958
Non-Pension, Non-Bus Wealth	$217,938	$316,604	$98,666	$268,723	$304,773	$36,049	$62,617
RPP (Going Concern)	$44,514	$43,005	-$1,510	$86,173	$100,245	$14,073	-$15,582
Other Pension	$1,175	$1,175	$0	$1,260	$3,925	$2,664	-$2,664
Business Equity	$38,553	$72,216	$33,663	$54,433	$79,724	$25,291	$8,372
Total Wealth (Going Concern)	$302,180	$433,000	$130,820	$410,589	$488,667	$78,078	$52,742
Mortgage (Principal Res)	$43,822	$59,620	$15,798	$36,195	$46,840	$10,644	$5,154
Other Mortgages	$5,767	$9,636	$3,869	$6,737	$6,130	-$608	$4,477
Credit Cards	$1,648	$2,356	$707	$1,556	$2,065	$509	$198
Student Loans	$1,218	$1,459	$241	$2,083	$2,266	$183	$58
Car Loans	$3,337	$4,390	$1,053	$3,942	$4,802	$861	$192
Lines of Credit	$3,183	$6,462	$3,279	$3,268	$7,117	$3,849	-$570
Other Loans	$2,519	$2,598	$79	$1,813	$3,064	$1,251	-$1,172
Total Debt (non-mortgage)	$17,673	$26,901	$9,228	$19,399	$25,444	$6,045	$3,183
Total Debt	$61,494	$86,520	$25,026	$55,594	$72,283	$16,690	$8,337
Net Financial Wealth	$47,938	$64,302	$16,363	$77,682	$72,673	-$5,009	$21,373
Networth (Going concern)	$240,686	$346,480	$105,794	$354,995	$416,383	$61,388	$44,406
Exposure to CESG (kid-years)	1.80	10.70	8.90	0.00	1.35	1.35	7.55
Household Income	$61,691	$67,373	$5,682	$71,096	$76,097	$5,001	$681
Own a house?	70.3%	73.3%	3.0%	73.9%	76.5%	2.6%	0.4%
Age of Reference Person	38.99	39.69	0.70	44.54	44.46	-0.08	0.78
Sample Size	5255	1547		2928	1021		

Notes:

Table 2B: Mean Household Assets and Liabilities, 2005 versus 1999

	With Kids 10 to 17 (older kids)			With Kids only under 10 (younger kids)			
	1999	2005	DELTA	1999	2005	DELTA	"DD"
RESP Participation	13.9%	31.0%	17.1%	19.5%	36.3%	16.8%	0.4%
Bank Accounts	$4,077	$5,722	$1,646	$3,665	$5,641	$1,977	-$331
Other Financial Assets	$27,649	$26,848	-$801	$10,709	$26,007	$15,298	-$16,098
RESP	$1,019	$3,750	$2,731	$1,028	$2,589	$1,561	$1,170
RRSP	$33,461	$38,442	$4,981	$19,901	$30,253	$10,352	-$5,372
RRIF	$580	$197	-$383	$3	$290	$287	-$670
Financial Assets (subtotal)	$66,786	$74,960	$8,173	$35,306	$64,780	$29,474	-$21,301
Principal Residence	$119,143	$165,543	$46,401	$97,235	$147,739	$50,503	-$4,103
Other Real Estate	$23,890	$72,810	$48,919	$14,797	$22,277	$7,479	$41,440
Vehicles and Contents	$38,183	$37,836	-$347	$30,360	$33,526	$3,166	-$3,514
Non-Pension, Non-Bus Wealth	$248,003	$351,149	$103,146	$177,698	$268,321	$90,623	$12,523
RPP (Going Concern)	$58,064	$57,694	-$371	$26,379	$22,474	-$3,904	$3,534
Other Pension	$1,565	$1,061	-$504	$653	$1,335	$682	-$1,185
Business Equity	$47,420	$99,415	$51,995	$26,685	$34,201	$7,516	$44,479
Total Wealth (Going Concern)	$355,052	$509,318	$154,266	$231,416	$326,332	$94,916	$59,350
Mortgage (Principal Res)	$40,151	$53,516	$13,364	$48,734	$68,151	$19,417	-$6,053
Other Mortgages	$6,155	$10,905	$4,750	$5,246	$7,861	$2,615	$2,135
Credit Cards	$1,660	$2,714	$1,054	$1,633	$1,855	$222	$833
Student Loans	$967	$1,314	$346	$1,554	$1,662	$108	$239
Car Loans	$3,376	$4,826	$1,450	$3,285	$3,782	$497	$953
Lines of Credit	$3,907	$7,633	$3,726	$2,215	$4,826	$2,611	$1,116
Other Loans	$2,494	$3,340	$846	$2,553	$1,561	-$992	$1,838
Total Debt (non-mortgage)	$18,559	$30,732	$12,173	$16,486	$21,546	$5,060	$7,113
Total Debt	$58,710	$84,247	$25,537	$65,220	$89,697	$24,477	$1,060
Net Financial Wealth	$61,665	$67,592	$5,927	$29,566	$59,702	$30,136	-$24,210
Networth (Going concern)	$296,342	$425,071	$128,729	$166,196	$236,634	$70,439	$58,290
Exposure to CESG (kid-years)	1.90	13.08	11.18	1.67	7.38	5.71	5.47
Household Income	$65,031	$69,981	$4,950	$57,221	$63,727	$6,506	-$1,555
Own a house?	74.5%	78.3%	3.8%	64.7%	66.4%	1.7%	2.1%
Age of Reference Person	42.58	43.21	0.63	34.19	34.76	0.58	0.05
Sample Size	3041	939		2214	608		

Notes:

Table 3: Reduced Form Estimates of Changes in Grant Eligibility, as Reflected in Children-Years post-1998

	Wealth						Debt			Net Worth
	RESP		RRSP	Other Fin.	Tot. Financial	Assets	Mortgage	Non-mort	Tot. Debt	Net Worth
	Balance	Participation	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance
Unrestricted Kid Counts:										
2005 Indicator	***341****	***0.057****	-3,861	***-13,169****	***-16,148****	-25,820	***8,325****	***5,768****	***14,093****	-22,763
	(172)	0.015	(2,894)	(5,450)	(6,802)	(24,479)	(2,628)	(2,413)	(3,633)	(32,539)
N Kids 0 to 4 (X 2005)	626	0.034	10,868	7,919	19,770	***74,672****	5,136	1,302	6,438	63,897
	(391)	0.023	(7,428)	(5,348)	(11,895)	(36,952)	(3,456)	(4,343)	(6,064)	(40,897)
N Kids 5 to 9 (X 2005)	425	***0.055****	-3,069	7,435	5,502	34,288	5,807	-1,797	4,010	7,485
	(351)	0.020	(3,053)	(5,893)	(7,972)	(24,287)	(3,222)	(2,351)	(4,031)	(30,813)
N Kids 10 to 14 (X 2005)	***1,285****	0.031	3,063	4,433	8,815	40,621	-2,496	-1,034	-3,530	37,496
	(431)	0.020	(4,577)	(5,998)	(9,113)	(22,043)	(2,974)	(3,643)	(4,652)	(33,230)
N Kids 15 to 17 (X 2005)	***1,255****	***0.088****	2,009	-8,734	-6,648	56,871	4,177	***10,529****	***14,706****	72,447
	(468)	0.030	(5,123)	(8,864)	(12,061)	(39,207)	(3,438)	(4,400)	(5,869)	(54,427)
Grouped Kid Counts:										
2005 Indicator	***348****	***0.057****	-3,384	***-13,342****	***-15,867****	-24,163	***8,397****	***6,043****	***14,440****	-20,272
	(166)	0.015	(2,904)	(5,444)	(6,815)	(23,839)	(2,617)	(2,429)	(3,640)	(32,096)
Kids 0 to 9 (X 2005)	***517****	***0.043****	3,290	***8,212****	***12,621****	51,896	***5,221****	-883	4,338	31,563
	(255)	0.014	(2,956)	(3,515)	(5,707)	(26,929)	(2,244)	(1,959)	(3,086)	(29,639)
Kids 10 to 17 (X 2005)	***1,261****	***0.053****	1,802	-359	2,323	43,948	-41	2,951	2,911	46,573
	(284)	0.013	(3,517)	(5,156)	(7,559)	(24,301)	(2,027)	(2,294)	(3,110)	(29,801)
Kids summarized by "exposure":										
2005 Indicator	51	***0.048****	-798	-9,000	-9,027	14,764	***9,320****	***5,934****	***15,254****	8,754
	(157)	0.015	(3,521)	(4,602)	(6,724)	(11,081)	(2,546)	(2,386)	(3,587)	(23,098)
Exposure to Grant	***241****	***0.013****	3	-101	148	2,222	356	191	547	3,355
	(37)	0.002	(408)	(592)	(871)	(1,603)	(326)	(306)	(450)	(2,732)

Notes:

1) All specifications include the following controls: A vector of demographic variables (number of hh members in each of 20 age-categories), marital status of the hh head, household head and spouse age and age-squared, education of the household head and spouse, household income, an indicator of home ownership, immigrant status, region, and urban status.

2) Robust standard errors in parentheses; Statistically significant coefficients (5%) highlighted in bold color

3) Sample size is 10,751 in all specifications

4) "Other Fin" are other financial assets: stocks, bonds, mutual funds, etc, outside of RESP and RRSPs

5) Tot. Financial Balance is the sum of: Bank accounts, RESP, RRSP, RRIF, and "Other Financial Assets"

6) "Assets" is defined as non-pension, non-business wealth (Financial wealth, real estate, contents, and vehicles)

7) "Non-Mort Debt" includes: all debt with the exception of the mortgage on the principal residence; Mortgage debt refers only to the mortage on the principal residence

8) Net worth is defined as non-pension, non-business wealth minus all debt