Parental Saving Behaviour: An Analysis of Parent's Decision to save and the Methods Used to Accumulate Savings

by

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Abstract

With increasing tuition fees and a higher demand for a post-secondary education, have parents begun to save for their children's education and how do parents plan on countering increases in post-secondary costs? Using the Survey of Approaches to Educational Planning, we test for factors that affect parent's decision to save. We analyze saving methods used by household who have decide to save. Saving methods analyzed include Registered Education Saving Plan (RESP), mutual funds and savings bonds. Our final test examines Cudmore's (2005) theory stating that investment in RESPs should be complementary to investment in child's human capital. Our results add to parental investment theories such as human capital framework, the status attainment model and the resource dilution hypothesis. Overall, we find that parental income and children's age are the primary factors affecting parental savings and saving instruments.

1. Introduction

The demand for a post-secondary education has increased over the past years and therefore so has the demand for savings. Results from the Post-Secondary Education Participation Survey indicate that families play an important role in meeting these postsecondary costs. The survey suggests that 58% of full-time post-secondary students are being funded through family members to help cover their educational expenses.[1]

Family members, more importantly parents, realize the importance of a post-secondary education and develop high hopes for their children educational attainment. This is evident in the 2003 Survey of Approaches to Educational Planning which discovers that 80% of parents expect their

[1] "Survey of Approaches to Educational Planning 1999" The Daily, April 10, 2001 and Shipley, Lisa, Sylvie Ouellette, and Fernando Cartwright. 2003. Planning and preparation: . Catalogue number 81-595-MIE — Number 010. page 39.

children to pursue a post-secondary education.[2] Shipley et al. (2003) discovered that post-secondary savings has increased from 41% in 1999 to 50% in 2002 amongst children under 19 years of age. Although, the decision to save has increased over the past years the amounts being saved falls substantially short of the estimated average cost of attending a post-secondary institution. The median accumulated value of educational savings reported in 1999 for children 18 and under was $3,000 (Shipley et al 2003, see Graph 2).[3] Meanwhile, a year at university for those living at home costs around $10,000 and attending an out-of-town institution adds an extra $5,000 (Finnie, 2002).[4]

A reason for such lack in parental savings could be such that financial priorities may no longer be focused on post-secondary education. The 2002 Survey of Approaches to Educational Planning, we discover that financial priority to save for post-secondary education ranks last amongst Canadian families behind every day budgeting, retirement savings and other savings (vacation, cars, etc.) (Statistics Canada. 2002). Children rely on parental support and parent's lack of priority in terms of savings may lead to lower enrolment in Canadian Universities.

This research paper examines parent's choice to save and the methods used to save for their children's post-secondary education. First, our paper adds to past studies such as Steelman and Powell (1991) and Vesper and Hossler (1993) by including a more complete set of independent variables. Using the 1999 and 2002 years of the Survey of Approaches to Educational Planning, we include parental and child characteristic variables, human capital investment variables and

[2] Shipley, Lisa, Sylvie Ouellette, and Fernando Cartwright. 2003. Planning and preparation:. Catalogue number 81-595-MIE — Number 010.page 39.
[3] This saving value is not including students attending a post-secondary institution in Quebec.
[4] This is an average cost which includes books, tuition and other expenses of attending a post-secondary institution. This cost is not including students attending a post-secondary institution in Quebec.

communication proxies.[5] As our second contribution, we add to the literature on parental investment theory with particular attention to the human capital theory, the status attainment model and resource dilution hypothesis. Using key variables, we observe differences in parental investment behaviour which help explain the core concepts of the parental investment theories. Our third contribution is the examination of specific saving instruments. These Canadian instruments include the utilization of RESPs, Mutual Funds Investment and Savings bonds. We test for factors that influence the utilization of these instruments with specific detail to factors affecting the amounts invested in RESP accounts.

Our final contribution is the analysis of an unpublished theory proposed by Cudmore (2005). Cudmore's theory suggests that parental savings should be complimentary to investment in children's human capital. Cudmore (2005) believed that saving instruments, specifically RESPs, are risky assets because they might not used by the beneficiary. In order to assure the utilization of savings, parents must invest in their child's human capital in order to increase the probability of post-secondary attendance and increase the probability of utilizing savings. We test this theory using proxies for ability enhancement in children that lead to post-secondary attendance.

The paper is structured starting with a discussion analyzing the most common saving instruments used in Canada, followed by a literature review which analyzes parental investment theories and an examination of past research in the field of parental investment. The paper then details our data set and the methods used to undertake the analyses. We state our hypothesis of main theories and finally conclude with a discussion of our results and the limitations to our study.

[5] Communication proxies represent the amount of time spent by parents discussing educational plans with their children.

2. Saving Instruments

The majority of studies e.g. Steelman and Powell 1991 & Hossler and Vesper 1993 conducted in the field of parental investment focus on whether parents save or not. Our study adds another dimension to savings as we examine specific saving instruments: RESPs, mutual funds and savings bonds. This study examines these three instruments because they differ in risk. Mutual funds are most risky, but most likely to yield higher returns, followed by RESPs with savings bonds as the least risky. When examining these three instruments we are interested in analyzing the effect of risk on parental savings decisions.

2.1 RESP

The Registered Educational Savings Plan was introduced in 1972 under the Canadian Income tax Act seeking to promote parental educational savings in order to cover the cost of a child's post-secondary degree and increase enrolment. An RESP is opened by a contributor (parent or guardian) who invests amounts into the account allowing the interest to accrue tax free.[6] Once, time comes for the beneficiary (child) to attend post-secondary schooling, the account is taxed under the beneficiary at a lower tax rate.[7]

The RESP account has been modified since its introduction to include several new grant components. The most popular grand includes the Canadian Education Savings Grant (CESG) which was introduced in 1998 giving a 20% rebate (up to $400 a year) on the first $2,000

[6] "RESP: Registered Educational Saving Plan". 2010. Human Resource and Skills Development Department of Canada. Retrieved on Nov 9th, 2010. http://www.hrsdc.gc.ca/eng/learning/education_savings/public/resp.shtml

[7] "RESP: Registered Educational Saving Plan". 2010. Human Resource and Skills Development Department of Canada. Retrieved on Nov 9th, 2010. http://www.hrsdc.gc.ca/eng/learning/education_savings/public/resp.shtml

contributed to an RESP.[8] In 2004, the CESG was modified for low income families providing returns of 30% to 40% on the first $500 contributed to an RESP.[9]

If the contributor (parent) invested a minimum of $2,000 each for 17 years of the child life, the interest payments for such consistent investment could reach as high as to $7,200.[10] Among those who saved in 1999, 46.9% utilized RESPs as their primary saving method. In 2002, this saving method increased 11.5 percentage points to 58.4% (Statistics Canada 2002) (see Graph 4).

Although, the RESP seems profitable it can be viewed as a poor investment for children who do not pursue a post-secondary education. If funds are not utilized, the contributions from governmental grants are paid back to government with the interest accrued being taxed at an additional rate of 20%.[11] This leads to Cudmore (2005) theory which promotes investment in human capital to increase the probability of post-secondary attendance and avoid the loss of saved funds.

2.2 Mutual Fund Investment and Savings Bonds

Two other saving instruments used for post-secondary education are mutual funds and Canada Savings Bonds. Mutual fund investments offer parents potentially higher returns at a greater risk than Saving Bonds. Using this method, parents have the option of a diversified comfort portfolio containing a variety of domestic and foreign mutual funds.[12]

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[8] "RESP: Registered Educational Saving Plan". 2010. Human Resource and Skills Development Department of Canada. Retrieved on Nov 9th, 2010. http://www.hrsdc.gc.ca/eng/learning/education_savings/public/resp.shtml
[9] "RESP: Registered Educational Saving Plan". 2010. Human Resource and Skills Development Department of Canada. Retrieved on Nov 9th, 2010. http://www.hrsdc.gc.ca/eng/learning/education_savings/public/resp.shtml
[10] "RESP: Registered Educational Saving Plan". 2010. Human Resource and Skills Development Department of Canada. Retrieved on Nov 9th, 2010. http://www.hrsdc.gc.ca/eng/learning/education_savings/public/resp.shtml
[11] "Student Financial Aid Information Center". 2010. RESP Information. http://www.su.ualberta.ca/services_and_businesses/services/sfaic/forms_and_reports/RESP%20Tip%20Sheet%202008-2009
[12] "Mutual Fund Investment Information". 2010. TD Canada Trust. http://www.tdcanadatrust.com/mutualfunds/

Canada Savings Bonds (CSB) is viewed as safer investment product than RESPs or mutual funds. They are issued and fully backed by the Government of Canada, available to all Canadians to achieve personal financial goals.[13] In 2004, the federal government introduced the Canada Learning Bond as a way to encourage low-income families to save money for their child's post-secondary education.[14] Unfortunately, we are limited to 2002 data but future studies could examine the effectiveness of such a saving instrument.

3. Literature Review

In this section, we begin with an analysis of past studies and their contributions to the field of parental savings. We also include an analysis of past economic theories linked to parental investment discussed in Steelman and Powell (1991;1993) studies.

3.1 Contributions to the Field of Parental Savings

The studies in the field of parental savings are unique and allow ample opportunity for new research to add to past contributions. We examine past research of parental savings on college progress, differential savings behaviour amongst immigrant parents and specific portfolio holdings when saving for a child's education.

Elliot and Beverly (2010) examined parental savings as an indirect link to college progress. Using Panel Study from Income Dynamics and its supplements, Elliot and Beverly (2010) found that 68% of children who had savings put aside by their parents will experience economic mobility and success. Through their results they conclude that parents who save for their children's education have higher expectation for college progress. They conclude that parental savings indirectly affects college progress through parental expectation.

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[13] "Canada Savings Bond". 2010. Government of Canada. http://csb.gc.ca/about/our-products/
[14] "Canada Savings Bond". 2010. Government of Canada. http://csb.gc.ca/about/our-products/

Further studies analyzed racial differences in the decision to save for a child's post-secondary education. Steelman and Powell (1993) examined differences in savings patterns between ethnic and white families in America. Using National Center for Education Statistics, this study found that ethnic parents are more likely to save, and save greater amounts then their white counterparts. Steelman and Powell (1993) finding add to the theory human capital suggesting that ethnic parents have a greater returns for investment in their children. This finding is also supported by Mickelson (1990) study that discovered that parental savings for education can be seen as ticket out of impoverishment or a chance to escape discrimination.

Churaman (1992b) differentiated from Steelman and Powell work by conducted a study comparing the post-secondary saving decisions for five different racial groups. Using the NPSSA consisting of a sample of 7,259 of aided and unaided students, Churaman (1992b) discovered that White and Asian parents are most likely to save and save greater amounts then their black parent counterparts. Churaman (1992b) associated higher levels of savings with higher earned income giving white parents an advantage.

One study links its findings to past economic theories. Steelman and Powell (1991) uses the Parent Survey of the High School and Beyond to analyze the factors that affect parental savings and how these factors are linked to parental investment theories. Their results add to the human capital theory discovering that parents with most to gain from investment in children's education are more likely to invest. The results also add to the status attainment model suggesting that family income and background affect the probability of saving and pursuing a post-secondary education. Finally, the paper adds to the resource dilution hypothesis discovering that as the number of children increases the probability of savings decreases.

Other studies began to examine cost-awareness and communication amongst parents and children. Hossler and Vesper (1993) used longitudinal data set of 4,923 students and their parents to analyze the factors associated with parental savings. They discovered that parents with knowledge regarding post-secondary costs are more likely to save. They also discovered that parents who consistently communicate with their children regarding the pursuit of a post-secondary degree were more likely to save.

Zainal et al. (2009) confirmed Hossler and Vesper (1993) by analyzing parent's income, background and attitudes towards savings for their children's post-secondary education. Using 371 parents of students surveyed at the Universiti of technologi MARA (UiTM), Zainal et al. (2009) discovered that cost awareness and socioeconomic status are the main reasons for the lack of parental savings for post-secondary education.

More general findings found sex, marital status age and education to greatly influence parent's decision to save. Hossler and Stage (1989) examined a sample from the Indiana College Placement and Assessment Center containing 703 male and 718 female students in order to uncover differences in parental saving behaviour towards a child's sex. Hossler and Stage (1989) found that the number of children had a more significant negative effect on females then males. They also found that father's education and parent's marital status were only positively affecting parental savings for male children and not female.

Using the National Post-Secondary Student Aid survey (NPSSA) consisting of 165 male single parent families, 623 female single parent families and 5,296 two parent families, Churaman (1992a) compares saving patterns on the basis of marital status and sex. Churaman (1992a) discovered that parent's net income is positively correlated with savings and therefore female

single parents were at a disadvantage in their ability to save due to lower earnings. Male single parent accumulate 93% more income than two parent families providing them greater abilities to save then all other types of families.

Cooney and Uhlenberg (1992) were the first to examine how financial support changes as child and parent become older. Using the 1987 and 1988 National Survey of Families and Households, they discovered parental supportive is higher at times when children are pursuing post-secondary education. Cooney and Uhlenberg (1992) also discover that parental support is higher amongst older parents concluding that perhaps older parents have less need for money.

Lee et al. (1997) used the 1992 Survey of Consumer Finances (SCF) analyzing 1,124 households with at least one child under the age of 18. Lee et al. (1997) found that more educated parents and Asian and Hispanic parents are the most likely to begin saving for their child's post-secondary education.

The most complete examination of parental savings in the late 1980s was conducted by Hossler, et al. (1990). They discovered that parental education indirectly affects parent's decision to save through parental expectation. They believed that parental education shapes parent's expectations of their children which induce savings. More educated parents result in higher expectations which lead to higher probability of savings. Hossler and Braxton and Coppersmith (1990) also found student ability and involvement in school activities to positively affect plans to attend a post-secondary institution.

Encouragement and support have been found to greatly affect parent's decision to save. Conklin and Daily (1981) analyzed 2,700 high school students from data collected at the State University of New York Research foundation. They discovered that parental encouragement positively

affects college attendance and type of college. They also discovered that parental encouragement in the form of financial support is the most influential factor affecting post-secondary attendance.

Past studies have focused on the decisions to save for a child's post-secondary education but what are the methods and portfolios used to generate such savings? Hanna and Chen (1996) analyzed investment in six financial asset categories in order to uncover the best saving methods for post-secondary education. Using Ibbotson Associates (1995) data for six financial asset categories from January 1, 1926 to December, 1994, Hanna and Chen (1996) discovered that in a 15 year time frame, the safest investment portfolio consisted of 89% intermediate Government Bonds and 11% small stock. They also discovered the investment portfolio that resulted in the greatest form of savings for post-secondary education is investment in 100% small stocks for the entire 15 year period.

Avery and Elliehausen (1986) analyzed specific characteristics of high income families and their financial asset portfolios. Using the 1983 Survey of Consumer Finances and focusing on risk, Avery and Elliehausen (1986) found that high income families are more likely to take on greater risk in their portfolio in order to earn greater returns for college savings. They also discovered that high income families are more likely to seek advice and have stock transactions throughout the year.

Weagley (1995) analyzed household savings portfolios at different points in children age prior to attending a post-secondary institution. He believed that at younger ages of a child's life, aggressive investment in risky assets are more favourable because there is more room for loss. As the child ages, growth is still necessary but a moderate risk investment would be sufficient.

Cudmore (2005) analyzed parent's willingness to use RESPs as their primary savings method. He theorized that investment in children's human capital should be complimentary to investment in RESPs. Cudmore (2005) reasoning was that parents should invest in activities for their children that will increase the probability of post-secondary attendance and increase the probability of utilizing RESP funds. If the funds were not utilized they were subject to extra taxation and would results in the removal of accumulated bursaries and grants.

3.2 Parental Investment Theories

Steelman and Powell (1991 & 1993) analyzed factors that affected the probability of parental savings which led to significant contribution towards the human capital theory, the status attainment model and the resource dilution hypothesis.

3.2.1 Human capital Theory

Becker (1993) examines human capital theory from the perspective of parental investments. Becker (1993) state that human capital model sees the child as an investment in which parents can make monetary and time investment in order to yield pecuniary and non-pecuniary returns. Becker (1993) concludes that resources will be invested into children in a way that will maximum future returns.

Becker's (1981) novel the Treaties of Family analyzes the rate of return for human capital investment in children. He discovers that rate of return for investment in children is dependent upon family background and child characteristics. Becker (1981) states family background such as ethnicity; values, expectation and income affect future returns on investments children. Becker (1981) also adds child characteristics such as sex, age, ability and race are factors that could potentially affect returns from child investments.

Becker and Tomes (1976) analyze parental expenditures on children differing in the level of endowment. They find that an increase in parent's income results in an increase in parental expenditure on all children regardless of level of endowment. Becker and Tomes (1976) also suggets that parents are more likely to invest and invest greater amounts in children in which they believe to be more endowed. The level of a child's endowment plays a critical role in investment decisions.

3.2.2 Status Attainment

Blau and Duncan (1967) conducted a study to discover how status is achieved in our society. At first the belief was that those of lower levels were most likely to achieve higher status simply because many more occupational destinations entailed higher status for lower level individuals. After careful examination, Blau and Duncan (1967) realized that it was better to start at the top of the stratification then at the bottom. This study focused on men and discovered that men whose fathers were highly educated and held high status position were more likely to become highly educated hold higher status position in society similar to their fathers. The need to attain or maintain high status leads to a higher probability of saving to ensure such status is achieved.

Sewell and Hauser (1976) further examined Blau and Duncan theory from perspective of socioeconomic status. Using data from Wisconsin's high school seniors and parental financial information from the Wisconsin Department of Revenue, Sewell and Hauser (1976) discovered that student in high socioeconomic status category are 2.5 times more likely to pursue a post-secondary education compared to a low socioeconomic status student. Sewell and Hauser (1976) conclude that the members of this study found it difficult to escape the effect of their socioeconomic origins.

Featherman and Hauser (1978) examined social statuses amongst black and white parents. They discovered that black parents, on average, were of lower socioeconomic status, lower educational status and lower occupational status compared to white parents. Featherman and Hauser (1978) conclude that black children are greatly disadvantaged due to their parent's low social status and face greater adversity in achieving higher educational and socioeconomic status compared to white children.

3.2.3 Resource Dilution Hypothesis

The resource dilution hypothesis introduced by Blake (1989) contends that family resources are finite therefore as the number of children increases, fewer resources become available for distribution. Blake (1989) adds by stating that fewer resources could have severe impacts on a child's educational attainment. Blake (1989) theory proposes that the number of children in a household negatively affects the educational outcome of all children.

Steelman and Powell (1991) results demonstrate the number of children's negative effect on educational attainment. They found that as the number of children increases, parent's ability to pay post-secondary costs decreases by 14.8%. There results coincided with the resource dilution hypothesis demonstrating that as the number of children increases, parental investment decreases.

Strohschein et al. (2008) tested directly the resource dilution hypothesis using 1994 National Longitudinal Survey of Child and Youth which assessed parents in four waves asking identical questions in each wave and directly linking child to parent. Strohschein et al. (2008) discovers that the addition of new siblings does not result in fewer resources amongst children. He

discovers that the addition forces resources to be more efficiently managed in order to provide for all children in the family.

4. Data and Methodology

Our analysis utilizes the 1999 and 2002 Survey of Approaches to Educational Planning (SAEP). The SAEP is a cross sectional survey conducted to improve our understanding of the processes by which the parents/guardians of children aged 0-18 organizes the monetary and non-monetary resources needed to successfully pursue post-secondary education (Statistics Canada, 2002). The surveys contain information on financial saving strategies, parents/guardians' attitudes and values in respect to post-secondary education, the child's demonstration of commitment to education through academic performance and extra-curricular involvement (Statistics Canada. 2002)

In order for estimates produced from survey data to be representative of the target population, and not just of the sample itself, we must incorporate the survey weights into our calculations. We recalibrated the weights for each data set to sum up to 1 to ensure that the sample size is preserved but the importance of each observation is scaled by the appropriate given weights.

Our first test focuses on factors that affect parent's decision to save for their child's education. Our dependent variable is represented by the survey question that asks respondents "*Have you or anyone else living in your household saved money for ...'s postsecondary education?*". Our answer consists of two choices enabling the use of Probit regression techniques.

In order to make contributions towards specific saving instruments, we analyze factors that influence the utilization of RESPs, Mutual funds investment and Savings bonds. Since saving instruments are only utilized by parents who are saving, our sample size is reduced to only those savers consisting of 14,021 observations.

When analyzing our first saving instrument, our dependent variable will be examining the utilization of RESP accounts. The dependent variable will represent the survey question that asks respondents *"Are you (and/or your spouse) using: ... Registered Education Savings Plan(s) (RESPs)?"*. For our second instrument, our dependent variable will be changed to examine the utilization of mutual fund accounts. The survey questions will asks respondents "*Are you (and/or your spouse) using: ... mutual funds, investment funds, publicly traded stocks (not in an RESP or RRS?* Our final instrument will examine the utilization of savings bonds taking information from the survey question that ask respondents "*Are you (and/or your spouse) using: ... other types of bank accounts incorporating savings bonds?"*. Since all questions yield yes/no answers, we are able to use probit regression techniques for all three instruments.

To test for factors that affect parental decision to save and saving methods, we use a probit model:

$$\boldsymbol{Savings_i = \beta_0 + \beta_1 X_i + \beta_2 Y_i + \beta_3 Per_i + \delta_p + \theta_t + \varepsilon_i}$$

The variable $Savings_{ij}$ represents the binary dependent variable. The subscript i represents the individual, while j represents the type of saving instrument being tested. Our X_{ij} describes parental characteristics including parental education, type of economic family, type of employment, parent's age, marital status, ethnicity, educational expectation of child and household income. Our Y_{ij} variable represents student characteristics such as gender, child's age, child's level of activity and a talk variable representing frequency of communication between parent and child regarding post-secondary education. Our Per_{ij} variable represent parental perception of child's ability. In this variable we include parent's perceived school performance

of child and parental expectation of attaining bursaries and scholarships. Our δ_p and θ_t variables represent provincial and time dummies.[15]

We conduct a deeper analysis of RESP accounts examining factors that influence the amounts accruing in RESPs. We are only able to analyze RESP users reduing our sample size to 6,058 observations. Our dependent variable will be represented by the survey question that asks respondents "*For the RESP only, how much money in total has been contributed to RESPs for ... by people living in your household?*". For this analysis we utilize Ordinary Least Squares Regression techniques.

We look for factors that influence the amounts invested in RESPs using an Ordinary Least Squares model:

$$\boldsymbol{Resp\_amt_i = \beta_0 + \beta_1 X_i + \beta_2 Y_i + \beta_3 Per_i + \delta_p + \theta_t + \varepsilon_i}$$

The variable $Resp\_amt_i$ is a continuous variable representing amounts saved in RESP accounts.

Finally, we analyze Cudmore (2005) theory which states that investment in early childhood education should be complementary to investment in savings. We test this hypothesis by using human capital proxies such as enrolment sports (hockey leagues, little leagues), cultural clubs (music, art, dance lessons etc) and social clubs (scouts, girl guides, etc) outside of school. We also include a help with homework variable as this is also a form of parental time investment.

Our probit and OLS models are extended to include these human capital measures:

$$\boldsymbol{Savings_{ij} = \beta_0 + \beta_1 X_{ij} + \beta_2 Y_{ij} + \beta_3 Per_{ij} + \beta_4 HC + \delta p + \theta_t + \varepsilon_i}$$

[15] For greater detail regarding variable definitions and characteristics, consult tables 2, 3 and 4.

$$Resp\_amt_{ipt} = \beta_0 + \beta_1 X_{ipt} + \beta_2 Y_{ipt} + \beta_3 Per_{ipt} + \beta_4 HC + \delta_p + \theta_t + \varepsilon_i$$

We correct for heteroskedasticity by using robust standard errors in all of our regressions. We also have examined the possibility of utilizing the Heckman selection model when examining the RESP amounts but found the inverse mills ratio to be insignificant when included in our unrestricted OLS model. Finally we test whether the estimated coefficients are the same across both years. We perform this test by creating a year dummy in order to capture the effect through time and creating interaction variable with all independent variable. The estimated coefficients on all of the interaction variables were found to be statistically insignificant which led to the conclusion that the impact of the independent variables on the decision to save was the same across both data sets.

6. Main Hypotheses

In this section, we provide hypotheses regarding the theories tested in our paper. We discuss expectation of signs and level of significant amongst tested variables supporting our suggested hypotheses.

6.1 Human Capital Theory

In order to test the core concepts of the human capital theory we examine parental investments in children and the potential returns from these investments. We expect parents to make larger investments in situation where parents can accrue greater expected returns. We expect ethical parents to have the most to gain from investment in their children therefore we expect a greater probability of savings. We expect younger parents to have a greater probability of savings as they can accrue interest payments for longer periods of time therefore achieving greater returns

on their investment. We expect that higher income parents are more likely to invest and invest greater amounts in their children as they realize the potential returns from larger investments.

6.2 Social Attainment Model

When examining the status attainment model, we analyze variables that are proxies for social status. Parental investment is made in order to attain a higher status or maintain a current status. Socioeconomic condition is the most common proxy of social status. Another predictor of status is parent's level of education. We expect higher income parents and highly education parent to be more likely to invest and invest greater amounts in their children in order to maintain or improve socioeconomic and educational status. Occupation is also a significant contributor to status attainment. We examine occupation comparing unemployed to private and public sector workers. We expect all employed workers to invest in their children's education with private workers having the strongest positive effect.

6.3 Resource Dilution Hypothesis

In order to test the resources dilution hypothesis we focus on the number of children in the household. We expect that as the number of children increases parental savings decreases. We expect the number of children to be negatively correlated with probability of savings. We also add another dimension to this hypothesis by testing the spouse's involvement as a resource consumer.[16] We expect that a husband and wife single earner household are less likely to save for their children education compared to a single parent earner household.[17] This is expected because the addition of an extra resource consumer (the spouse) results in fewer resources to be

[16] In this case, the wife or husband who is not bringing income into the household is viewed as an extra consumer of resources similar to his/her children. We examine this by looking at two key variables HWsingleearner and SPemployed.

[17] This hypothesis is stated by assuming that both household make identical income.

available. We expect both variables husband and wife single earner and single earner parent to be positively correlated with parental savings but the effect to be larger for single earner parents.

6.4 RESP, Mutual Funds and Savings Bonds

When examining saving instruments we assume that Savings bonds are least risky followed by RESPs and Mutual Funds being the most risky. The variables of interest when comparing different risk investment are wealth, children age, parental education and parental age. We expect higher income parents to take greater risks and invest in mutual funds while low income parents to focus on lesser risky assets such as RESPs and saving bond investments. We also expect that as children get older, the likelihood of utilizing all accounts, especially RESPs, decreases. This is expected because the rate of return from investment would decrease the later the investment is made due to the losses in compounded interest. We would also expect parents with higher levels of education to take on more risk and invest in mutual funds and RESPs as they are aware of the greater returns from such investments.

6.5 Cudmore's Hypothesis of Human Capital Investment

Cudmore (2005) suggested that human capital investment in offspring should be complementary to investment in savings. We test this hypothesis by using a set proxy variables for human capital investment. These proxy variables include enrolment in sports (hockey leagues, little leagues), cultural clubs (music, art, dance lessons etc) and social clubs (scouts, girl guides, etc) outside of school. Our analysis will also include a help with homework variables as this is also an investment of parent's time into strengthening their child's skills. We expect our human capital measures to be positively correlated with parental savings. We also expect our human capital measures to be positively correlated with all saving instruments, particularly RESPs, which was the focus of Cudmore's hypothesis.

7. Results

We begin this section by reporting results found in our analysis of parent's decision to save followed by results from utilizing savings instruments. We also report the results on factors that affect RESP amounts. Finally, we report results regarding our human capital proxies and discuss its contribution to the Cudmore (2005) hypothesis.

7.1 Factors that Influence Parental Savings

We first consider what factors influence whether parents are saving for their child's education. Utilizing probit regression techniques, we test for factors that affect parent's decision to save and present the marginal effects in table 4. The analysis yields interesting results with the most notable effects occurring in parental characteristics variables.

The parental characteristic variables that proved most significant were father and mother's highest level of education, the type of economic family, mother's type of employment, father's age, race and income.

Examining our results for father and mother's level of education, we discovered that parental education level is positively correlated with the decision to save. A father with a university degree would be 3.63 percentage points more likely to save relative to a father with a below high school education level. Meanwhile, a mother with a university degree is 2.78 percentage points more likely to save relative to a below high school education level. This result is consistent with Hossler, Braxton, and Coopersmith (1990) and Hossler and Stage (1989) papers which also found parent's level of education to be positively correlated with savings. Our results are significant at the 95% level discoverig that father's education level has a greater impact on the likelihood to save compared to mothers education level.

The findings on parental education demonstrate that educated parents favour investment in their child's education. This finding can be expected as parents who have attended post-secondary institutions realize the cost for education and the importance of savings. These results add to the status attainment model (Featherman and Hauser 1978) confirming that parent's educational status is reflected in their children pursuit for higher education. Therefore, greater measures are taken, in the form of savings, by parent's with higher education to maintain a well educated family status and ensure there are no financial barriers.

Another interesting variable that proved to show significance is the type of economic family. We discover that the estimated coefficient on the variable *HWdualearner* (husband and wife dual earner) had a significant impact at the 95% level on parent's decision to save. A husband and wife that both earn income are 4.21 percentage points more likely to save then a single unemployed parent. Meanwhile, a single employed parent was also found significant at the 95% level but was only 2.97 percentage points more likely to save relative to a single unemployed parent. Although a single employed parent is less likely to save then a husband and wife dual earner household, its probability of saving is still greater then a husband and wife single earner household (see Table 4).[18] We can suggest from these findings that perhaps a single employed parent has one less individual that he/she needs to support compared to a husband and wife single earner household which needs to support their children and their non-working spouse reducing the amount of resources available to be distributed amongst children.[19] Churaman (1992a) discovers similar results, discussing marital status being the primary disadvantage for

[18] The probability of saving for husband and wife single earner household is 0.0254 while that probability is 0.0297 for a single employed parent household.

[19] Assuming that both types of families earn similar income and have the same number of children then less resources will be available to children living in a husband and wife single earner household because of the wife or husband need for consumption as well

single parent household because less income is earned amongst the household leading to fewer savings.

We look deeper into the argument of the economic family to analyze specifically the type of employment by each parent. We discover that only mother's type of occupation appears to have a statistically significant impact on savings with public and private working mothers having a negative effect on the likelihood of savings. The largest effect amongst the employed was found for mother's working in the private sector as they were 2.21 percentage points less likely to save for their child's education then their unemployed counterparts.

Father's age was found to be a significant factor in determining whether parents choose to save. The results in table 4 show that as fathers become older they become less likely to save for their child's education. This result contradicts Cooney and Uhlenberg's (1992) findings which believed that father's have less need for money as they aged and therefore were more likely to save for their children education.

The results on ethnicity were found to be important factors in determining parent's choice to save for their child's education. British and other ethnic parents were found to have a statistically significant and positive impact on savings while French parents did not. We discovered that British parents are 2.3 percentage points more likely to save for their child's education than Canadian parents. We also found that other ethnic parents were 0.876 percentage points more likely to save than their Canadian counterparts. These results are similar to the study conducted by Steelman and Powell (1993) which found that non-white (British, French, African American) parents are more likely to save compared to their white counterparts. A rational for racial effects

on parental savings could be that a college degree may be seen as the ticket out of impoverishment or the primary means to escape discrimination (Mickelson 1990).

Our income variable was found to be highly significant in influencing parental saving decisions. We discover that greater household income results in a greater probability of savings. A household making between $20,000 and $50,000 are 4.21 percentage points more likely to save compared to a household making fewer than $20,000. A household making over 80,000 are 12.4 percentage points more likely to save then their reference group making fewer than 20,000. In this analysis, we discover that income is the most important determinant on parent's decision to save. As parental income increases, we witness sizable increasing effects in the probability of saving. These results are linear to past studies such as Steelman and Powell (1991) and Vesper and Hossler (1993) who all found income to be positively correlated with parental saving decisions and also found income to be the most important indicator of savings.

Our *talk* variable, which represents the volume of communication between children and parents regarding post-secondary education, displays somewhat significance with *lowtalk* showing significant at the 95% level and *hightalk* showing significance at the 90% level. Similar to Vesper and Hossler (1993), our *talk* variable is positively correlated with savings but the effect is similar throughout the different levels of talking. The talk variable suggests that communication between children and parents regarding post-secondary education is an important factor in increasing the probability that parents save. Perhaps parents who engage in communication with their children regarding post-secondary education realize their children's interest in schooling and take action to ensure there are no financial barriers.

Similar to our *talk* variable, our *activity* variable which represents child involvement in school activities displays somewhat significance with *medactivity* showing significance at the 95% level and *highactivity* showing significance at the 90% level. We discover that parents who perceive their children involved in a medium number of school activities will be 2.53 percentage points more likely to save relative no activity levels.[20] Similarly, a parent who perceives high levels of child activity will be 0.968 percentage points more likely to save. A high level of activity does result in lower probability of savings perhaps because parents who perceive their children engaging in high levels of activities might expect their child not to be focussed academically and potentially lack the discipline to attend post-secondary education. Parents who perceive their children engaging in medium and low levels of activity would expect a perfect mix of academic and school involvement and would want to save for future education. Our results for school activities coincide with the findings of Hossler, Braxton and Coppersmith (1990) which showed that all levels of activity had a positive effect on parent's decision to save.

The estimated coefficients on the variables *threechild* and *fourormore* are statistically significant at the 95% level. Examining only the significant estimated coefficients, we discover that as the number of children increases the likelihood of parental savings decreases. A parent with four or more children will be 3.02 percentage points less likely to save compared to parents with one child. Meanwhile a parent with three children will be 2.25 less likely to save. The result is consistent with Steelman and Powell (1991) and Hossler et al. (1989) which discovered that family size is negatively associated with the likelihood of parental savings and attendance of post-secondary institutions.

[20] A medium level involvement in school activities can be seen as engaging in activities at least one time a week

When analyzing academic characteristics, we discover that only above average academic performance which is represented by *peraboveavg* is significant at the 95% level and *scholarship* is significant at the 90% level. It is important to note that our *peraboveag* variable represents parental perceived performance above average and not a standardized test score above average. For this variable, we obtain a positive correlation with parental savings. This is not a surprising result as parents who perceive their child to be above average academically will begin saving for post-secondary education. This result is consistent but slightly different then past studies such as Hossler, Braxton and Coppersmith (1989) which have analyzed student ability from the perspective of standardized test scores meanwhile our analysis examines parental perception of student ability.[21]

Examining variation through time, we discover that *year1999* is highly significant and has negative effects on parental savings. Our findings explain that parents were more likely to save in 2002 than in 1999 meaning that perhaps the importance of savings is growing through time.

Our regional variables show significance in certain areas such as Maritimes, Quebec, Manitoba and Saskatchewan. Parents in Maritimes, Manitoba, Saskatchewan are more likely to save for their children education compared to parents in Ontario. The parents in Quebec were found to be the least likeliest to save for their child's education compared to Ontario parents.[22]

The variables in our analysis that were insignificant to parental saving were mother's age, marital status, educational expectation of child, gender, child's age and child working. These variables, although insignificant, will help add to our discussion later in the paper.

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[21]Our results may be overstating the true effect of performance on parental savings because parental attitudes towards their children's academic ability tend to be higher than their true ability.

[22] This is perhaps due to lower tuition fees and expenses in the Quebec regions

7.2 Factors that Influence Parental Saving Instruments such as RESP, Mutual Funds and Saving Bonds

We use a Probit model to investigate factors that affect the utilization of RESP accounts, mutual fund investment and savings bonds. The results vary with each savings instruments and will aid in providing greater detail on parental saving behaviour. The marginal impacts of these three models are found in table 5.

Our findings first discover that father's with diplomas and university degrees are more likely to utilize RESP and Mutual funds investment but are less likely to utilize saving bond techniques. A father with a university degree is 14.8 percentage points more likely to utilize an RESP account and 6.87 percentage points more likely to utilize mutual fund investment. But they are 10.7 percentage points less likely to utilize savings bonds as their primary source of savings for education.

The result for mother's education seemed to only affect RESP and Mutual fund investments. Mother's with a university degree are 10.8 percentage points more likely to invest in RESPs and 9.71 percentage points more likely to invest in mutual funds. Highly educated mothers also tend to avoid using savings bond but these results were reported insignificant.

The findings on parental education are suggests that educated parents favour investment in RESP and Mutual funds and avoid investment in savings bonds. This finding is reasonable as parents who have attended post-secondary institution realize the cost of post-secondary schooling and the need to utilize investment opportunities that have the ability to accrue greater returns. With enhanced knowledge of the markets, it no surprise that highly educated parents chooses to invest in higher return saving plans such as the RESP and Mutual fund investment. These findings add

to Hanna and Chen (1995) study which found that small investment in long-term plans resulted in the greatest form of savings for post-secondary education. Our study discovers that highly educated parents utilize these types of long-term small investment plans represented in Canada by RESPs.

The findings on parental occupation were only significant for mutual fund investment and RESPs. There was not much variation in these results but findings show that self-employed fathers and mothers working in the private sector were less likely to utilizing mutual funds or RESP investment as their primary saving methods. The results also suggested that mothers in the public sector were 4.64 percentage points less likely to use RESP account. A summary of the findings on employed mothers suggests that all employed parents, regardless if father, mother, private, or public, are less likely to utilize RESP or mutual fund investment compared to those unemployed parents. The rational is that perhaps working mothers and fathers are less concentrated on saving and more concentrated on simply increasing household wealth. Therefore, working mothers and fathers save less but try to generate greater wealth through their career.

Further findings discover that father's age affects utilization of mutual fund investment and savings bond. The analysis shows that as father's become older they have a greater probability of utilizing mutual fund investment but a lower probability of utilizing savings bonds. These results are only significant at the 90% level and are not statistically significant for RESP investment.

The results for mother's age were only significant when analyzing savings bonds. We discovered that the coefficients on all mothers age variables are positive and younger mothers are more likely to utilize savings bond as their primary saving method.

The results on father's and mother's age are mixed and suggest that older fathers prefer the utilization of mutual fund investment and avoid saving bonds while older mothers prefer the utilization of savings bond investment.

Further analysis of our results discovers marital status to be significant when analyzing RESP investment. We notice that married parents are 11.4 percentage points less likely to utilize RESP investment. This finding supports our hypothesis regarding the spouses acting as an extra resource consumer in the household. Without the spouse there are more resources that can be utilized to open up an RESP accounts for their children.

We get insignificant results when examining ethnicity and its affect on RESP, mutual funds and saving bond investment. This result is important when compared to our first test in table 4 which discovered that British and ethnic parents to be more likely to save then their Canadian counterparts. This test adds to our previous findings by suggesting that British and ethnic parents are more likely to save for their children education but are unaware of the different saving methods in Canada. British and Ethnic parents lack the knowledge to utilize RESP, mutual funds and saving bonds technique as tools for saving for their children's education. The Canadian government should promote these tools to foreigners and strengthen awareness of these methods.

Our findings for income were positive and statistically significant for RESP and mutual fund investment. We discover that households in higher income brackets are more likely to utilize RESP and mutual fund accounts. The effect is greater when analyzing mutual fund investment. Parents making over $80,000 are 25.9 percentage points more likely to invest in mutual funds compared to parents earning fewer than $20,000. The effect is smaller for RESP investment as parents making over $80,000 are 10.9 percentage points more likely to invest for RESPs. Income

was not significant when analyzing saving bonds. Our result is consistent with Avery and Eilliehausen (1986) and is not surprising as parents with greater income have more freedom to invest and accept more risk. This gives higher income parents the opportunity to pursue mutual fund and RESP investments in order to accrue greater returns for their risk.

The estimated coefficients on our age variables when analyzing RESP utilization are all negative and statistically significant compared to our reference group *age0to4*. We discover that as the child becomes older parents are less likely to invest in RESP accounts. Examining magnitudes, parents with children between 5 and 8 years old are 6.84 percentage points less likely to invest in RESP then their reference group *age0to4*. In comparison, parents with children between the ages of 17 and 18 are 29.2 percentage points less likely to invest in RESP accounts. The effect increases at a negative rate as the child becomes older and the probability of utilizing mutual funds decreases.

We find the opposite effect for savings bond investments. As the child becomes older, parents are more likely to utilize saving bonds. This finding is likely to stem from the fact that savings bonds are a general method of savings, not necessarily tied to children's education. Examining the same coefficients, we discover that parents with children between 5 and 8 years old are 5.11 percentage points more likely to invest in saving bonds then their reference group age0to4. In comparison, parents with children between the ages of 17 and 18 are 9.97 percentage points more likely to invest in saving bonds. These results agree with Weagley (2005) study which discovered that less risky investments are to be undertaken later in the child's life.

Age seems to be the most significant determinant in RESP investment. This is not surprising as the returns of an RESP accounts are greater for parents who invest early in their child's life. We

believe this finding to be more important than income when parents make decisions to utilize RESP accounts. Age is hypothesized to be of greater importance because there is a cap to the amount of RESP investment parents can make each year. Therefore, the number of years is more crucial than the amount income when deciding to utilize this type of investment.

Age is also the most important determinant for saving bonds investment. The rationale is that as the child gets older, parents seek secure investments in which they hope to make a small premium. If they are not certain of post-secondary enrolment they avoid RESPs and choose savings bonds. They avoid taking great risk late in their child's life and seek to make small returns in case of post-secondary attendance (Weagley 2005).

Examining the year variable we discover that *year1999* is highly significant for RESPs, Mutual funds and saving bonds. The *year1999* variable has negative effects on RESP and Saving bonds investment but a positive effect on Mutual fund investment. Our finding suggests that individual seem to be moving away from mutual fund investment as their primary saving method and moving towards RESP and saving bond investment. This suggests that parental savers could potentially be become much more risk adverse in terms of saving method for post-secondary education.

When analyzing our regional variables, we discover that parents living in Quebec are less likely to save using RESP and Mutual fund investment compared to parents in Ontario. We also discover that parents living in Saskatchewan, Manitoba and Alberta are more likely to utilize saving bonds and less likely to utilize RESP accounts as their primary saving method.

7.3 Factors that Influence the amount of RESP investment

Table 6 reports results regarding the amounts invested in RESP accounts. Our results are not completely consistent with our findings from our second test (table 5) which examined utilization of RESPs. In this Ordinary Least Squares regression we analyze which factors affect the amounts deposited in RESP accounts. We compare this result to our results on the utilization of RESPs to capture a complete understand of how Canadians utilize RESPs.

Our first sets of results discover that income is highly significant when analyzing amounts accruing in RESP accounts. Our results explain that higher income families will invest more money in their RESP accounts. A family making over $80,000 will invest $1,827.91 more than a family making under $20,000. This positive relationship between income and amount of RESP investment is consistent with our previous finding which discovered that income is positively correlated with the opening of an RESP account. Both sets of results (Table 5 and 6) suggest that higher income families are more likely to open RESP accounts and are more likely to invest greater amounts into these accounts.

Further results found that child's age is a significant factor in determining the amounts invested in RESP accounts. Our findings show that as children get older, parents tend to invest more money in their RESPs with investment being the largest for children between the ages of 15 and 16. This result is expected as children approaching post-secondary education need greater investment in RESPs in order to save enough funds to attend their choice of institution. The problem with late investments in RESPs is that parents are not able to capture the full return for their deposit as they lose the full amount of compounded interested in the early stages of their child's life.

In our previous test, we discovered that a child's age is negatively correlated with the opening of an RESP account meaning that as the child got older parents became less likely to utilize RESP accounts. The result suggests that returns from an RESP account are greater for parents who invest early in their child's life. But in this test, a child's age is positively correlated with the amounts invested in RESP accounts meaning that as the child got older parents became more likely to invest greater amounts into RESPs. When combining both results we are able to fully understand a child's age effect on RESPs and realize that Canadian parents are not taken full advantage of their RESP accounts. Parents should invest in RESP accounts at earlier stages of their child life making average size investments each year instead of large investment late in the child's life. This will ensure more compounded interest and a greater return for their investment resulting in less money spent on education. These results have helped us realize that Canadian parents are misusing RESP accounts and more guidance is necessary in order to stimulate greater RESP savings.

Another interesting result found that parents expecting their children to work during their post-secondary education will save $672.90 less in their RESP accounts. We would generally expect working children to need fewer resources from their parents but we also expect that their savings from working would not be sufficient to cover the cost of post-secondary schooling still depending on parental support.

Examining the year variable, we discover that *year1999* is highly significant for amounts deposited in RESP accounts. Our findings show that the amount of RESP investment in 1999 was $1,439.20 less than the amount invested in 2002. The result suggests that parents are contributing greater amounts into their RESPs.

When analyzing our regional variables we discover that parents living in the Maritimes, Quebec, Manitoba and Alberta invest lower amounts into their RESPs compared to parents living in Ontario. The smallest investors in RESPs are found to be parents living in Manitoba and Quebec while Alberta and the Maritimes parents invest significantly larger amounts.

7.4 Cudmore's Hypothesis of Human Capital investment

Our final test examines Cudmore's (2005) theory stating that investment in early childhood education is complementary to investment in RESPs. The rationale is that RESPs are risky assets that have high returns only if the child beneficiary attends a post-secondary institution.

Using proxies for human capital such as enrolment in sports, social and cultural clubs, our first test generates results on the effect of human capital investment on the parent's decision to save (Table 7). We discover that parents who enrol their children in sports at any level (high, medium or low) are more likely to save for their child's education (Table 7).[23] Parents who enrol their children in high levels of sporting activity are 3.02 percentage points more likely to save for their child's education in comparison to 1.48 percentage points for children enrolled in lower levels of sporting activities.

Another human capital measure that proves to be significant when analyzing parental decision to save is the level of cultural investment in offspring. We discover that parents who enrol their children in cultural clubs (music, art, dance, etc) are more likely to save for their child's education. Parents who engage their children in high levels of cultural activities are 2.2 percentage points more likely to save for their child's education compared to 1.65 percentage points for low levels of cultural involvement.

[23] High, medium and low levels refer to the amount of times per week a child engages in the activity.

From the perspective of savings, our results suggest that investment in sporting activities and cultural clubs will lead to higher probabilities of saving. These findings are consistent with Cudmore's (2005) theory suggesting parents who save for their child's education want to also invest in their child's human capital through sporting activities and cultural clubs in order increase the probability of post-secondary attendance and ensure the utilization of saved funds.

Next we analyze human capital investment from the perspective of savings instruments: RESPs, mutual funds and savings bonds. Our results suggest that human capital investment is not complimentary to the utilization of RESPs and savings bonds but displays strong significance when analysing Mutual Fund investment (Table 8).

Sports enrolment and social club involvement did have a significant impact on the probability of utilizing mutual fund investment. Parents who enrol their children in low level of sporting activity are 6.95 percentage points more likely to utilize mutual fund investment. Parents who engage their children in low levels of social clubs involvement are 8.12 percentage points more likely to utilize mutual fund investment. The effects do not vary with the level of sports activities or the level of social club involvement meaning that as long as parents engage their children in either activity, regardless how frequent, they are going to be more likely to utilize mutual fund investment as their primary saving method.

We also discover that although the utilization of RESPs found all human capital measures to be insignificant, we observe slight significant in our study of RESP amounts. In this test, we observe mix results in our analysis of human capital investment. For our social club measures, we observe high and medium levels of social club involvement to be negatively correlated with the amount of RESP investment. We then observe parents who enrol their children in high levels

of cultural activities to be positively correlated with the amount of RESP investment having a $2,251.80 increase in amount invested.

When testing Cudmore's (2005) theory we discover that our results on RESP and savings bonds disagrees with Cudmore's hypothesis suggesting that human capital investment does not need to be complimentary to RESPs or saving bond investment. Our results suggest parents who utilize RESPs and Savings bonds as their primary source of saving do not invest in their child early development.

The results on mutual funds strengthen Cudmore's (2005) theory as parents utilizing mutual funds as their primary source of savings are also choosing to invest in their children's human capital through sports and social clubs enrolment. Through these investments, parents hope to increase the probability of post-secondary attendance and ensure the utilization of their savings.

When analyzing Cudmore's (2005) theory from the perspective of risk, our results suggests that as risk of saving method increases the probability of investing in the development of children also increases.[24]

When analysing RESP amounts we discover that our social club variables disagree with Cudmore's (2005) theory proposing that those who enrol their children in social activities deposit smaller amounts in their RESP accounts. A rationale for this result is that excess amounts of social activity can be viewed by parents as a decrease in the probability of post-secondary attendance and therefore reducing the amounts being saved in RESP accounts when the account has already been opened. Our cultural club variables strengthen Cudmore's argument proposing that those who enrol their children in cultural clubs deposit larger amounts into their RESP

[24] Mutual fund is viewed as a more riskier asset compared to RESP and Saving Bonds.

accounts. Investment in cultural programs is viewed as opposite to social investment as it has the potential to increase the probability of post-secondary attendance.

8. Discussion

We begin by examining the core concepts of the three theories on parental investment followed by an analysis of risk and its affect on parental saving behaviour. We continue with an extensive analysis of RESP accounts examining utilization and amounts. We conclude the section with an analysis of the significance of our human capital measures and there use as valid proxies.

8.1 Three Theories of Parental Investment

The results in table 4 help add to the three theories on parental investment discussed in the Steelman and Powell (1991; 1993) study. The human capital hypothesis is tested using parental age, ethnicity, income and number of children. The results of these variables are consistent with the human capital framework. We discovered that as father's become older they become less likely to save for their children's education. This finding adds to the human capital model and reveals that fathers look to take advantage of early investment in their child's life in order accrue higher returns in the future. Our results on ethnicity reveal that British and ethnic parents are more likely to save for their child's education relative to Canadian parents. This suggestion is levied by Mickelson's (1990) theory explaining that ethic parents have the greatest to gain from their children's post-secondary education. as a college degree can be viewed as the ticket out of impoverishment or the primary means to escape discrimination. Our results on income show that higher income household are more likely to invest and invest greater amounts in their children. This result is consistent with human capital framework as higher income parents realize the potential returns from larger investments.

Our second hypothesis examines the concepts of status attainment. Variable such as parent's education and income have added to the studies of the status attainment model. The findings on parent's level of education proved to significantly affect the likelihood of savings suggesting that higher educated parents are more likely to save to assure access for their children to attain similar levels of education. This result adds to the status attainment model (Featherman and Hauser 1978) confirming that parent's educational status is maintained throughout generations. Therefore, greater measures are taken, in the form of savings, by parent's with higher education levels to maintain that status and ensure there are no financial barriers. The results on income also add to the status attainment model as higher income parents invest and invest greater amounts in their children in order to maintain or improve socioeconomic status. Saving for their children's post-secondary education ensures there are no financial barriers in terms of attendance and increases the probability of maintaining or improving their children's future socioeconomic status.

Contributions to the resource dilution models were also made by examining such variables as type of economic family and number of children. Our findings regarding the type of earner household help to add another dimension to the resource dilution model as the spouse was never taken into considered as a resources consumer in past studies (Stroschein et al. 2008; Steelman and Powell 1991). Children were the only once assumed to share the resources of the family. The results suggest that a husband and wife single earner household is less likely to save then a single parent earner household. The addition of a non-working spouse is viewed similar to his/her children; a consumer of resources. This addition will result in fewer resources to be distributed to children because the spouse has now become an extra consumer. A single parent earner household does not support a non-working spouse and posses more resources to be distributed to

his/her child.[25] The findings on the number of children confirm the resource dilution hypothesis showing that as the number of children increases there are fewer resources that can accrue to any given child therefore decreasing the probability of savings.

8.2 Parent's Choices in saving instruments

When examining the factors that influence RESPs, mutual fund investment and savings bonds, our three largest findings were in parental education, income and children's age. We study these variables from the perspective of risky saving instruments chosen by parents.

We first discover that parental education affects all three savings methods. Our results suggest that more educated parents utilize RESPs and mutual fund investment as their primary source of savings and avoid saving bond investment. When analyzing this result from the perspective of risk, we realize that more educated parents adopt greater risk in terms of saving methods. This can be rationalized by stating that more educated parents understand how to utilize and control a more risky portfolio of investments and have the ability to accrue greater returns from these investments.

Our second finding discovers that households in higher income brackets are more likely to utilize RESP and mutual fund accounts. The effect of income is smaller for RESP investment as parents making over $80,000 are 10.9 percentage points more likely to save using RESPs compared to 25.9 for mutual fund investment. From a risk perspective, parents with greater income have more freedom to invest and accept more risk. A loss suffered by higher income families is less detrimental then a loss faced by lower income families. This gives higher income families the opportunity to pursue more risky saving methods such mutual fund and RESP investments in order to attain those larger payoffs.

[25] This theory is propose with the assumption that income in both families are exactly equal

Our finding on *age* is discovered to be the most significant determinant of RESP and saving bond investment. As children get older, parents are less likely to invest in RESP accounts and more likely to invest in saving bonds. From the perspective of risk, we discover that as children get older, parents are less likely to adopt risky saving methods because the loss from such investment cannot be recovered in time for post-secondary attendance. Parents seek secure investment in which they hope to make a small premium. Also, if they are uncertain of post-secondary enrolment as the child gets older they avoid RESPs and choose savings bonds to increase the probability of utilizing saved funds.

8.3 RESP: An analysis of utilization and amounts

When analyzing RESP amounts, this study is mostly interested in how it coincides with the utilization of RESP. This link between these two studies allows us to capture a complete understanding of the program's effectiveness in Canada.

In our first finding, we discover that income is positively correlated with the amount of RESP investment. This finding is consistent with the utilization of RESP accounts. With this finding, we can conclude that higher income families are more likely to open an RESP account and are more likely to invest greater amounts into their RESP accounts then lower income households.

Our *age* variable on the other hand was not consistent with the utilization of an RESP accounts. We discover that as children get older parents are less likely to open an RESP account but if opened are more likely to invest greater amounts into their RESP. When combining both results we are able to fully understand the effect of children's age on RESPs and realize that Canadian parents are not taking full advantage of this saving method. In an RESP account, to ensure higher returns and less investment, parents should invest average size amounts at early stages of the

child's life in order to compound more interest and accrue greater returns for their investments. From this study, we realize that Canadian parents are opening RESP accounts at the right time but are not making average size investment throughout their child's life. Instead parents are choosing to invest large amounts late in their children's lives therefore not be able to compound more interest on their investment. More guidance is necessary to ensure the proper use of RESPs in order to attain the maximum payoffs.

8.4 Analysis of human Capital Variables

When examining human capital measures we discover that enrolment in sports was found to be the most influential human capital variable. It was found to positively affect parent's decision to save and parent's decision to invest in mutual funds. We also discover that parents who enrol their children in sports are more likely to invest greater amounts into their RESPs. Enrolment in sports was found to have the largest effect from all the human capital measures and appeared most frequently as significant and positively correlated. From these findings, we can suggest that sports enrolment serves as a good proxy for human capital investment as it indirectly increases the probability of savings through the increase in the probability of post-secondary attendance.

Other human capital measures such as enrolment cultural and social clubs proved to be less significant with smaller affects. Enrolment in cultural club was found only to positively affect parent's decision to save having a smaller affect then sports enrolment. Meanwhile, social club enrolment was found to positively affect investment in mutual funds but negatively affect amounts invested in RESPs. The findings on cultural and social club enrolment are not strong significant indicators of human capital investment and can be classified as minor investments into improving children's abilities of attending post-secondary schooling.

9. Conclusion and limitations

Our research on parental saving behaviour has added to past work such as Steelman and Powell (1991) and Vesper and Hossler (1993) by including a more complete set of independent variables. Our study has contributed to human capital framework, social attainment model and resource dilution hypothesis. We have added to specific analysis of how parents save for their children's education by analyzing the most commonly used saving instruments in Canada. Finally, we tested an unpublished theory suggested by Cudmore (2005) stating parental savings should be complimentary to investment in children's human capital.

Father's age and ethnicity are significant indicators for human capital investment decision as parents seek to maximum returns. Our parental education and income variable were used to analyze the status attainment model. These parental status variables discovered that status of children is highly influenced by parental status. The resource dilution hypothesis was strengthened as results showed that as the number of children increased parental savings decreased. Another dimension was also added the resource dilution hypothesis suggesting that the spouse is viewed as a resource consumer similar to children and can therefore take away resources from children decreasing the probability of parental savings.

Our results on saving instruments examine different levels of risk undertaken by parents. We discover that higher income parents are more likely to invest in riskier saving instruments as they posses more financial flexibility to incur losses. We also find that older parents are less likely to invest in risky saving instruments as losses may become too severe to retrieve at such an old age. Analysing regressions on the utilization of RESPs and the amounts accruing in RESPs, we are able to fully analyze RESP investment in Canada. We discover that as children get older, parents become less likely to open an RESP account but if opened are more likely to invest more money

into their RESPs. We can suggest that Canadian parents are misusing RESPs accounts investing large amounts in later stages of their child's life. In order to ensure higher returns and less investment, parents should invest average size amounts at early stages of the child's life in order to compound more interest and accrue greater returns from their investments.

We discover mixed results when examining Cudmore (2005) theory regarding parental savings and human capital investment. We discover that enrolment in sports was found to be the most influential human capital proxy found to positively affect parent's decision to save and parent's decision to invest in mutual funds. Other human capital proxies proved less significant and impactful.

While our analysis has yielded interesting results on the topic of parental investments, it is not without limitations. The completion of the Survey of Approaches to Educational Planning is based completely off of parental perception. When completing the section on child performance, expectation and scholarship awards, we expect that parent's persception of their children tend to be higher than their children's true ability. Our study accepts this assumption and the possibility that we have overstated the true effect of parental perceived school performance of child, parental expectation, and expectation of scholarship awards.

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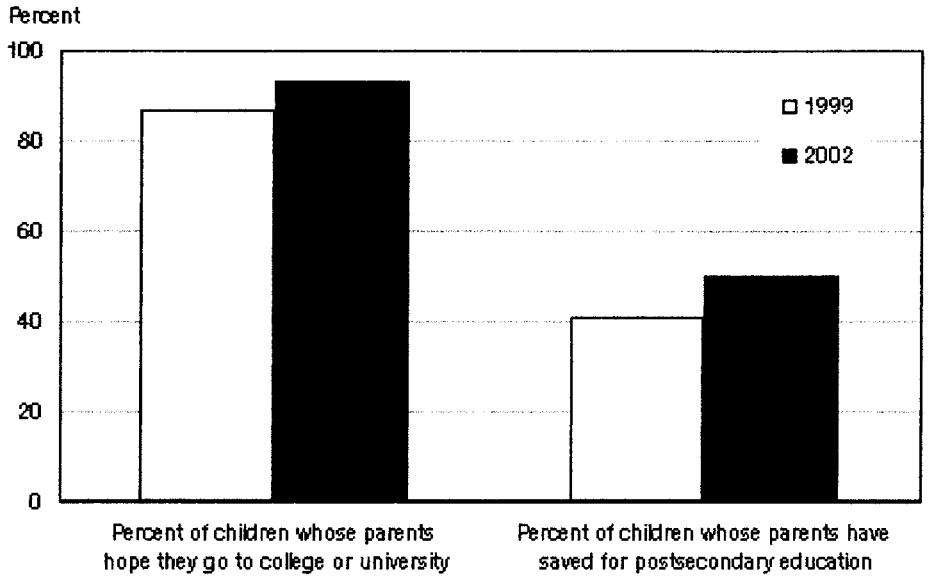
11. Appendix

11. 1 Graph 1

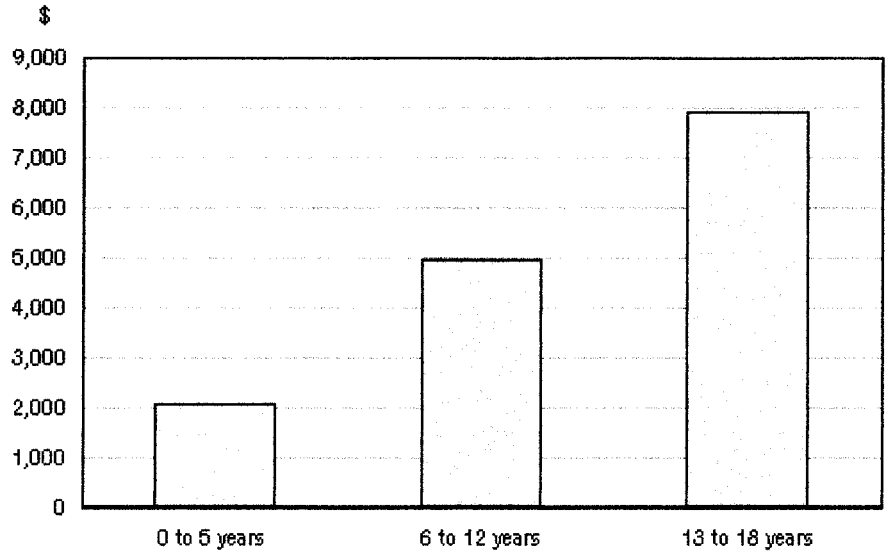
Postsecondary aspirations and savings behaviour



Source: "Survey of Approaches to Educational Planning 1999" The Daily, April 10, 2001 and Shipley, Lisa, Sylvie Ouellette, and Fernando Cartwright. 2003. Planning and preparation: . Catalogue number 81-595-MIE — Number 010. page 39.

11.2 Graph 2

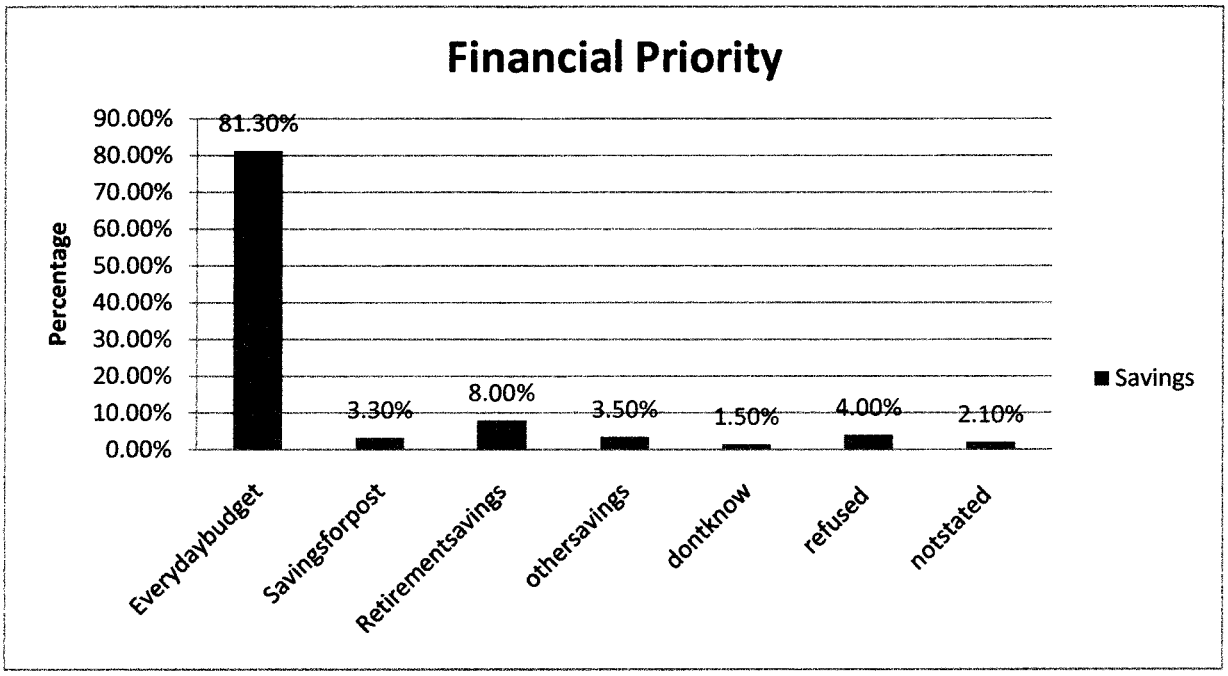
Saving behaviour for different children's age groups



Source: Shipley, Lisa, Sylvie Ouellette, and Fernando Cartwright. 2003. Planning and preparation:. Catalogue number 81-595-MIE — Number 010. page 39.

11.3 Graph 3

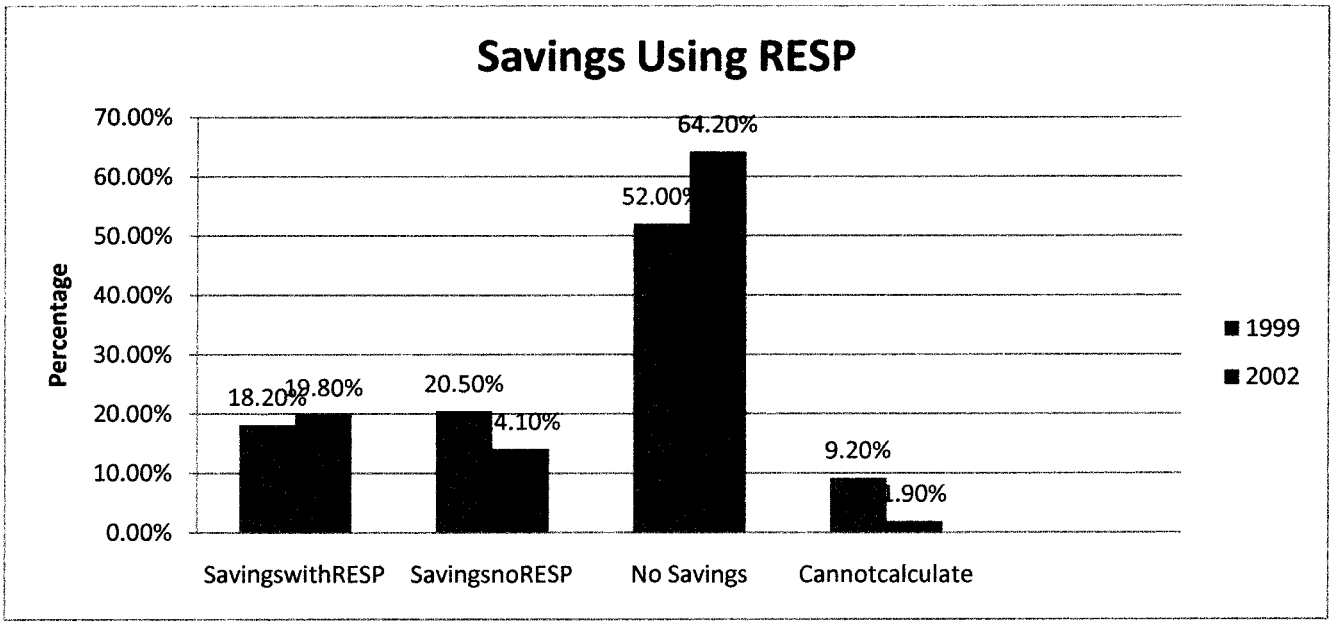
Where Education Ranks in terms of Parent's Financial Priorities



Source: Survey of Approaches to Educational Planning

11.4 Graph 4

How Common is it to Utilize RESPs as a Primary Saving Method for Education



Source: Survey of Approaches to Educational Planning

11.5 Table 1

RESP contribution by Income

Households (Average Income)	Children Who Are Beneficiaries of RESP
	(Percent)
Under $30,000	6.3
$30,000 - $49,999	12.7
$50,000 - $59,999	16.1
$60,000 - $79,999	21.7
$80,000 and over	29.9
all	16.4
Source: Miligan (2002) Tax Preferences for Education Savings: Are RESPs Effective?	

Table 2: Description of all Variables used in our analysis (Reference groups are bolded)

Variables	Description
Maritimes	dummy variable; 1 if individual lives in Maritimes 0 otherwise
Quebec	dummy variable; 1 if individual lives in Quebec, 0 otherwise
Ontario	dummy variable; 1 if individual lives in Ontario, 0 otherwise(reference group)
Manitoba	dummy variable; 1 if individual lives in Manitoba, 0 otherwise
Saskatchewan	dummy variable; 1 if individual lives in Saskatchewan, 0 otherwise
Alberta	dummy variable; 1 if individual lives in Alberta, 0 otherwise
BC	dummy variable; 1 if individual lives in BC, 0 otherwise
male	dummy variable; 1 if male, 0 otherwise
age0to4	dummy variable; 1 if child is between ages 0 to 4, 0 otherwise(reference group)
age5to8	dummy variable; 1 if child is between ages 5 to 8, 0 otherwise
age9to12	dummy variable; 1 if child is between ages 9 to 12, 0 otherwise
age13to14	dummy variable; 1 if child is between ages 13 to 14, 0 otherwise
age15to16	dummy variable; 1 if child is between ages 15 to 16, 0 otherwise
age17to18	dummy variable; 1 if child is between ages 17 to 18, 0 otherwise
fathlesshigh	dummy variable; 1 if father's highest level of education is less then high school, 0 otherwise(reference group)
fathhighgrad	dummy variable; 1 if father's highest level of education is high school, 0 otherwise
fathsomepost	dummy variable; 1 if father's highest level of education is some post-secondary education, 0 otherwise
fathdiploma	dummy variable; 1 if father's highest level of education is a college diploma, 0 otherwise
fathunidegree	dummy variable; 1 if father's highest level of education is a university degree, 0 otherwise
fatheducnotapp	dummy variable; 1 if father's highest level of education is not applicable, 0 otherwise
mothlesshigh	dummy variable; 1 if mother's highest level of education is less then high school, 0 otherwise
mothhighgrad	dummy variable; 1 if mother's highest level of education is high school, 0 otherwise
mothsomepost	dummy variable; 1 if mother's highest level of education is some post-secondary education, 0 otherwise
mothdiploma	dummy variable; 1 if mother's highest level of education is a college diploma, 0 otherwise
mothUnidegree	dummy variable; 1 if mother's highest level of education is a university degree, 0 otherwise
motheducnotapp	dummy variable; 1 if mothers's highest level of education is not applicable, 0 otherwise
HWdualearner	dummy variable; 1 if husband and wife household with both parents earning income, 0 otherwise
HWsingleeearner	dummy variable; 1 if husband and wife household with only one parent earning income, 0 otherwise
HWnonearner	dummy variable; 1 if husband and wife household with neither parent earning income, 0 otherwise

Table 2 continued

SPemployed	dummy variable; 1 if single parent household who is employed earning income, 0 otherwise
SPunemployed	dummy variable; 1 if single parent household who is unemployed not earning income, 0 otherwise(reference group)
other	dummy variable; 1 if not any of the previous categories, 0 otherwise
fathage15to24	dummy variable; 1 if father's age is between 15 and 24, 0 otherwise(reference group)
fathage25to34	dummy variable; 1 if father's age is between 25 and 34, 0 otherwise
fathage35to44	dummy variable; 1 if father's age is between 35 and 44, 0 otherwise
fathage44up	dummy variable; 1 if father's age is 44 and up, 0 otherwise
mothage15to24	dummy variable; 1 if mother's age is between 15 and 24, 0 otherwise(reference group)
mothage25to34	dummy variable; 1 if mother's age is between 25 and 34, 0 otherwise
mothage34to44	dummy variable; 1 if mother's age is between 34 and 44, 0 otherwise
mothage44up	dummy variable; 1 if mother's age is 44 and up, 0 otherwise
married	dummy variable; 1 if married, 0 otherwise
fpublicemp	dummy variable; 1 if father works in the public sector as an employee, 0 otherwise
fprivateemp	dummy variable; 1 if father works in the private sector as an employee, 0 otherwise
fprivateself	dummy variable; 1 if father is self-employed working in the private sector, 0 otherwise
funemployed	dummy variable; 1 if father is not employed at all, 0 otherwise(reference group)
mpublicemp	dummy variable; 1 if mother works in the public sector as an employee, 0 otherwise
mprivateemp	dummy variable; 1 if mother works in the private sector as an employee, 0 otherwise
mprivateself	dummy variable; 1 if mother is self-employed working in the private sector, 0 otherwise
munemployed	dummy variable; 1 if mother is not employed at all, 0 otherwise (reference group)
onechild	dummy variable; 1 if household has only one child, 0 otherwise (reference group)
twochild	dummy variable; 1 if household has two children, 0 otherwise
threechild	dummy variable; 1 if household has three children, 0 otherwise
fourormorechild	dummy variable; 1 if household has four or more children, 0 otherwise
primarysch	dummy variable; 1 if parent's educational expectation for the child is to complete primary school, o otherwise (reference group)
highsch	dummy variable; 1 if parent's educational expectation is for their child to complete high school, 0 otherwise
trade	dummy variable; 1 if parent's educational expectation is for their child to complete a trade, 0 otherwise
college	dummy variable; 1 if parent's educational expectation is for their child to complete college, 0 otherwise

Table 2 continued

university	dummy variable; 1 if parent's educational expectation is for their child to complete university , 0 otherwise
educdontknow	dummy variable; 1 if parent's child is too young to know education expectation or just don't know, 0 otherwise
peraboveavg	dummy variable; 1 if parents perceive their child's performance as above average, 0 otherwise
peravg	dummy variable; 1 if parents perceive their child's performance as average, 0 otherwise
perbelowavg	dummy variable; 1 if parents perceive their child's performance as below average, 0 otherwise(reference group)
per0to4	dummy variable; 1 if parents child is too young to decide performance or just dont know, 0 otherwise
childwork	dummy variable; 1 if parents expect their child to work during post- secondary schooling, 0 otherwise
childwork0to9	dummy variable ; 1 if child is too young to tell if he/she is going to work or just dont know, 0 otherwise
scholarship	dummy variable ; 1 if parents expect their child to receive a scholarship, 0 otherwise
scho0to4	dummy variable; 1 if too early to tell if child will receive a scholarship, 0 otherwise
bursar	dummy variable; 1 if parents expect their child to receive a bursary, 0 otherwise
bur0to4	dummy variable; 1 if too early to tell if child will receive a bursary, 0 otherwise
canadian	dummy variable; 1 if parents ethnicity are Canadian, 0 otherwise(reference group)
british	dummy variable; 1 if parents ethnicity are british, 0 otherwise
french	dummy variable; 1 if parents ethnicity are french, 0 otherwise
ethother	dummy variable; 1 if parents ethnicity is not canadian, british or french, 0 otherwise
inc0to20000	dummy variable; 1 if household income is between 0 to 20000 a year, 0 otherwise(reference group)
inc2000050000	dummy variable; 1 if household income is between 20000 to 50000 a year, 0 otherwise
inc5000080000	dummy variable; 1 if household income is between 50000 to 80000 a year, 0 otherwise
incover80000	dummy variable; 1 if household income is over 80000 a year, 0 otherwise
hightalk	dummy variable; 1 if parents talk high amounts with their children about post-secondary education, 0 otherwise
medtalk	dummy variable; 1 if parents talk medium amounts with their children about post-secondary education, 0 otherwise
lowtalk	dummy variable; 1 if parents talk low amounts with their children about post-secondary education, 0 otherwise
notalk	dummy variable; 1 if parents do not talk with their children about post-secondary education, 0 otherwise(reference group)
skiptalk	dummy variable; 1 if child is too young to begin talking about post-secondary education, 0 otherwise
highactivity	dummy variable; 1 if child is involved in high amounts of activity run by school, 0 otherwise

Table 2 continued

medactivity	dummy variable; 1 if child is involved in medium amounts of activity run by school, 0 otherwise
lowactivity	dummy variable; 1 if child is involved in low amounts of activity run by school, 0 otherwise
noactivity	dummy variable; 1 if child is not involved in activity run by school, 0 otherwise (reference group)
skipactivity	dummy variable; 1 if child is too young to participate in activities run by the school, 0 otherwise
highsports	dummy variable; 1 if child is participating in high amounts of sports outside of school (little league, hockey league etc), 0 otherwise
medsports	dummy variable; 1 if child is participating in medium amounts of sports outside of school (little league, hockey league etc), 0 otherwise
lowsports	dummy variable; 1 if child is participating in low amounts of sports outside of school (little league, hockey league etc), 0 otherwise
nosports	dummy variable; 1 if child is not participating in sports outside of school (little league, hockey league etc) , 0 otherwise(reference group)
sportskip	dummy variable; 1 if child is too young to participate in sports outside of school, 0 otherwise
highsocial	dummy variable; 1 if child is participating in high amounts of social programs outside of school (scouts, girl guides, boys and girls clubs etc), 0 otherwise
medsocial	dummy variable; 1 if child is participating in medium amounts of social programs outside of school (scouts, girl guides, boys and girls clubs etc), 0 otherwise
lowsocial	dummy variable; 1 if child is participating in low amounts of social programs outside of school (scouts, girl guides, boys and girls clubs etc), 0 otherwise
nosocial	dummy variable; 1 if child is not participating in social programs outside of school (scouts, girl guides, boys and girls clubs etc), 0 otherwise(reference group
socskip	dummy variable; 1 if child is too young to participate in social programs, 0 otherwise
highculture	dummy variable; 1 if child is partipating in high amounts of cultural programs outside of school (music, art, dance lessons etc), 0 otherwise
medculture	dummy variable; 1 if child is partipating in medium amounts of cultural programs outside of school (music, art, dance lessons etc), 0 otherwise
lowculture	dummy variable; 1 if child is partipating in low amounts of cultural programs outside of school (music, art, dance lessons etc), 0 otherwise
noculture	dummy variable; 1 if child is not partipating in cultural programs outside of school (music, art, dance lessons etc), 0 otherwise(reference group)
culskip	dummy variable; 1 if child is too young to participate in cultural programs outside of school, 0 otherwise

Table 2 continued

highelp	dummy variable; 1 if parents help their children a lot with school work, 0 otherwise
medhelp	dummy variable; 1 if parents help their children a fair bit with school work, 0 otherwise
lowhelp	dummy variable; 1 if parents rarely help their children with school work, 0 otherwise
nohelp	dummy variable; 1 if parents do not help their children with school work, 0 otherwise(reference group)
helpskip	dummy variable; 1 if children are too young to need help with school or don't go to school, 0 otherwise
year1999	dummy variable; 1 if data corresponds to the year 1999, 0 otherwise
year2002	dummy variable; 1 if data corresponds to the year 2002, 0 otherwise(reference group)
save	dummy variable; 1 if parents save for their children's post-secondary education, 0 otherwise
RESP	dummy variable; 1 if parents save using an RESP account for their children's post-secondary education, 0 otherwise
respamount	continous variable representing the amounts being saved in the RESP account
mutual	dummy variable; 1 if parents save using mutual fund investment for their chidlren's post-secondary education, 0 otherwise
savbond	dummy variable; 1 if parents save using savings bond for their children's post-secondary education, 0 otherwise

Table 3: Characteristics of all Variables used in 1999 and 2002 data set

	1999		2002	
	Mean	S.D	Mean	S.D
fathhighgrad	0.1947	0.0035	0.1960	0.0056
fathsomepost	0.0838	0.0025	0.0773	0.0036
fathdiploma	0.3341	0.0042	0.3418	0.0064
fathunidegree	0.1796	0.0036	0.2064	0.0058
mothhighgrad	0.1716	0.0033	0.1625	0.0052
mothsomepost	0.0616	0.0021	0.0561	0.0032
mothdiploma	0.2853	0.0040	0.2825	0.0061
mothUnidegree	0.1663	0.0035	0.1793	0.0055
HWdualearner	0.5326	0.0045	0.5260	0.0069
Hwsingleearner	0.2402	0.0039	0.2380	0.0062
HWnonearner	0.0414	0.0019	0.0394	0.0028
SPemployed	0.0990	0.0027	0.1244	0.0045
other	0.0130	0.0011	0.0198	0.0018
fathage25to34	0.2254	0.0036	0.2376	0.0059
fathage35to44	0.4903	0.0045	0.4814	0.0069
fathage44up	0.1816	0.0036	0.2111	0.0053
mothage25to34	0.1922	0.0034	0.1900	0.0055
mothage35to44	0.4301	0.0045	0.4023	0.0069
mothage44up	0.1626	0.0034	0.1754	0.0050
married	0.8105	0.0036	0.8038	0.0053
fprivateemp	0.4752	0.0045	0.5089	0.0069
fprivateself	0.0878	0.0025	0.0937	0.0041
fjobnotapp	0.2077	0.0038	0.1742	0.0055
mprivateemp	0.4205	0.0045	0.4104	0.0068
mprivateself	0.0725	0.0022	0.0808	0.0037
mjobnotapp	0.3126	0.0042	0.3252	0.0065
highsch	0.0615	0.0019	0.0659	0.0033
trade	0.0215	0.0012	0.0229	0.0018
college	0.1775	0.0033	0.1511	0.0048
university	0.6907	0.0040	0.6586	0.0064
educdontknow	0.0421	0.0018	0.0764	0.0034
british	0.0580	0.0019	0.0866	0.0038
french	0.0080	0.0008	0.1222	0.0039
ethother	0.6365	0.0042	0.6323	0.0065
inc2000050000	0.3619	0.0043	0.3179	0.0064
inc5000080000	0.3136	0.0042	0.2793	0.0061
incover80000	0.1841	0.0036	0.2797	0.0063
hightalk	0.0440	0.0019	0.0598	0.0033
medtalk	0.0891	0.0026	0.0853	0.0040
lowtalk	0.2703	0.0040	0.1411	0.0047
skiptalk	0.3545	0.0043	0.6790	0.0064
male	0.5126	0.0045	0.5127	0.0069
age5to8	0.2131	0.0037	0.2101	0.0058

Table 3 continued

age9to12	0.2193	0.0037	0.2253	0.0058
age13to14	0.1101	0.0028	0.1103	0.0045
age15to16	0.1139	0.0029	0.1136	0.0043
age17to18	0.1028	0.0028	0.1115	0.0041
twochild	0.4460	0.0045	0.4617	0.0069
threechild	0.2250	0.0037	0.2133	0.0063
fourormorechild	0.1019	0.0031	0.0731	0.0042
childnotstat	0.0000	0.0000	0.0030	0.0012
peraboveavg	0.2877	0.0041	0.3039	0.0063
peravg	0.2968	0.0041	0.2354	0.0060
perskip	0.3545	0.0043	0.3282	0.0065
childwork	0.5563	0.0045	0.5291	0.0069
childwork0to9	0.2846	0.0041	0.3361	0.0065
scholarship	0.3283	0.0042	0.1191	0.0045
schoskip	0.2846	0.0041	0.6663	0.0065
bursary	3.9180	0.0221	2.1790	0.0185
year1999	1.0000	0.0000	0.0000	0.0000
URS	8.1361	0.0238	7.6431	0.0177
highsports	0.1976	0.0035	0.0777	0.0038
medsports	0.1363	0.0032	0.2227	0.0058
lowsports	0.0560	0.0020	0.2029	0.0056
sportskip	0.3545	0.0043	0.2536	0.0059
highsocial	0.0352	0.0016	0.0069	0.0010
medsocial	0.1203	0.0028	0.0483	0.0031
lowsocial	0.0432	0.0017	0.1782	0.0052
highculture	0.0445	0.0019	0.0227	0.0022
medculture	0.1116	0.0029	0.0629	0.0036
lowculture	0.0297	0.0015	0.1904	0.0056
culskip	0.3545	0.0043	0.2536	0.0059
highelp	0.1982	0.0036	0.2628	0.0062
medhelp	0.1670	0.0032	0.1778	0.0053
lowhelp	0.1852	0.0036	0.1395	0.0047
helpskip	0.3545	0.0043	0.3503	0.0066
maritimes	0.0760	0.0014	0.0731	0.0020
quebec	0.2294	0.0040	0.2239	0.0060
manitoba	0.0378	0.0011	0.0375	0.0015
saskatchewan	0.0361	0.0010	0.0343	0.0014
alberta	0.1065	0.0026	0.1076	0.0039
BC	0.1266	0.0031	0.1253	0.0047
RESP	0.3962	0.0068	0.5362	0.0096
mutual	0.5604	0.0080	0.2076	0.0077
savbond	0.2603	0.0071	0.3146	0.0089

Table 3 continued

respamount	3731.42	113.72	5485.06	182.42
save	0.4072	0.0044	0.5215	0.0069
nosave	0.5928	0.0044	0.4955	0.0069
N	20,353		10,788	

Table 4: Full Sample Probit Regression Results for Parent's decision to save

	Save	
	M.E	t-stat
fathhighgrad	0.0195**	(3.11)
fathsomepost	0.00311	(0.47)
fathdiploma	0.0257***	(4.63)
fathunidegree	0.0363***	(4.62)
mothhighgree	0.0131+	(1.89)
mothsomepost	0.0131	(1.49)
mothdiploma	0.0266***	(3.95)
mothUnidegree	0.0278**	(3.25)
HWdualearner	0.0421***	(3.92)
HWsingleearner	0.0254*	(1.97)
HWnonearner	0.0087	(0.6)
SPemployed	0.0297**	(2.77)
other	0.0125	(0.77)
fpublicemp	-0.00405	(-0.81)
fprivateemp	-0.00955*	(-2.16)
fprivatesemp	0.00361	(0.52)
mpublicemp	-0.0122*	(-2.30)
mprivateemp	-0.0221***	(-4.58)
mprivatesemp	-0.0131*	(-2.10)
fathage25t034	-0.0277***	(-4.32)
fathage35to44	-0.0122+	(-1.67)
fathage44up	-0.00666	(-0.86)
mothage25to34	-0.00849	(-0.91)
mothage35to44	-0.00522	(-0.52)
mothage44up	-0.00453	(-0.43)
married	0.00326	(0.29)
highsch	-0.0152+	(-1.73)
trade	-0.000682	(-0.06)
college	0.0152	(1.55)
university	0.0308***	(3.42)
educdontknow	0.00806	(0.63)
british	0.0230**	(2.93)
french	0.0023	(0.35)
ethother	0.00876*	(2.47)
income20to50K	0.0421***	(6.04)
income50to80K	0.0765***	(8.51)
incomeover80K	0.124***	(9.91)
hightalk	0.0167+	(1.79)
medtalk	0.00252	(0.37)
lowtalk	0.0122*	(2.32)
skiptalk	0.0108+	(1.7)
male	-0.0000406	(-0.01)
age5to8	0.00483	(0.82)

Table 4 continued

age9to12	-0.00955	(-1.11)
age13to14	-0.00528	(-0.50)
age15to16	-0.00102	(-0.09)
age17to18	-0.0155	(-1.59)
highactivity	0.00968+	(1.67)
medactivity	0.0253***	(3.8)
lowactivity	0.00232	(0.43)
twochild	-0.00435	(-1.23)
threechild	-0.0225***	(-5.49)
fourormore	-0.0302***	(-5.88)
peraboveavg	0.0183**	(2.65)
peravg	0.0069	(1.09)
per0to4	0.0139	(1.41)
childwork	0.00224	(0.54)
childwork0to9	-0.591***	(-87.94)
scholarship	0.00753+	(1.86)
scho0to4	-0.847***	(-144.55)
bursary	0.000888	(1.22)
year1999	-0.874***	(-145.02)
maritimes	0.0163***	(3.5)
quebec	-0.0418***	(-9.61)
manitoba	0.0209***	(3.3)
saskatchewan	0.0370***	(5.25)
alberta	0.00299	(0.6)
BC	-0.00176	(-0.35)
N	31,141	

Marginal effects; t statistics in parentheses

(d) for discrete change of dummy variable from 0 to 1

+ p<.10, * p<.05, ** p<.01, *** p<.001

*Activity variable dropped for saving instruments because such low significant level

*scho0to4 dropped because of co-linearity

Table 5: Full Sample Probit Regression Results for Saving Instruments

	RESP		Mutual Funds		Saving Bonds	
	M.E	t-stat	M.E	t-stat	M.E	t-stat
fathhighgrad	0.0362	(1.38)	0.0179	(0.63)	-0.0513+	(-1.88)
fathsomepost	0.0517+	(1.7)	0.0273	(0.84)	-0.0111	(-0.34)
fathdiploma	0.0548*	(2.27)	0.0619*	(2.29)	-0.0700**	(-2.77)
fathunidegree	0.148***	(5.61)	0.0687*	(2.29)	-0.107***	(-3.82)
mothhighgrad	-0.000552	(-0.02)	0.0499	(1.6)	0.00315	(0.1)
mothsomepost	-0.0308	(-0.90)	0.0813*	(2.14)	-0.0337	(-0.92)
mothdiploma	0.0292	(1.11)	0.0744*	(2.55)	-0.00456	(-0.16)
mothUnidegree	0.108***	(3.71)	0.0971**	(2.98)	-0.0485	(-1.55)
Hwdualearner	0.132*	(2.44)	0.0885+	(1.75)	-0.0398	(-0.69)
Hwsingleeaner	0.105+	(1.87)	0.0649	(1.17)	-0.061	(-1.06)
Hwnonearner	0.0542	(0.82)	0.112	(1.54)	0.0286	(0.41)
Spemployed	0.0477	(1.05)	0.134**	(2.77)	0.0356	(0.74)
other	0.157*	(2.28)	0.133	(1.57)	-0.0668	(-0.95)
fpublicemp	-0.00186	(-0.09)	-0.0262	(-1.25)	-0.0289	(-1.30)
fprivateemp	0.000118	(0.01)	-0.0209	(-1.09)	-0.0258	(-1.29)
fprivatesemp	-0.0117	(-0.45)	-0.0480*	(-1.99)	-0.0204	(-0.72)
mpublicemp	-0.0464*	(-1.99)	-0.0189	(-0.80)	-0.00298	(-0.12)
mprivateemp	-0.0311	(-1.57)	-0.0484*	(-2.41)	-0.019	(-0.89)
mprivatesemp	-0.0668*	(-2.40)	-0.000272	(-0.01)	-0.0167	(-0.56)
fathage25to34	-0.015	(-0.44)	0.0231	(0.7)	-0.00409	(-0.11)
fathage35to44	0.0178	(0.53)	0.0547+	(1.73)	-0.0531	(-1.46)
fathage44up	0.0531	(1.44)	0.0610+	(1.66)	-0.0650+	(-1.67)
mothage25to34	0.00213	(0.05)	-0.0561	(-1.23)	0.133*	(2.57)
mothage35to44	0.0144	(0.31)	-0.00801	(-0.17)	0.131**	(2.59)
mothage44up	0.0314	(0.64)	-0.0237	(-0.49)	0.105*	(1.97)
married	-0.114*	(-2.24)	-0.0419	(-0.80)	0.00236	(0.04)
highsch	-0.164**	(-3.03)	-0.101*	(-2.02)	-0.0052	(-0.10)
trade	-0.0682	(-1.28)	-0.0531	(-0.99)	-0.00229	(-0.04)
college	-0.107**	(-2.98)	-0.120***	(-3.88)	0.0161	(0.41)
university	-0.00844	(-0.27)	-0.0762*	(-2.48)	-0.0267	(-0.80)
educdontknow	-0.0471	(-0.90)	-0.0425	(-0.85)	0.0222	(0.42)

Table 5 continued

british	0.00256	(0.1)	-0.00542	(-0.21)	-0.0101	(-0.37)
french	-0.0177	(-0.64)	0.0891**	(3.03)	0.0153	(0.54)
ethother	0.0251	(1.62)	0.0136	(0.88)	0.00161	(0.09)
income20to50K	0.0486	(1.54)	0.125***	(3.54)	-0.0473	(-1.40)
income50to80K	0.0723*	(2.25)	0.197***	(5.48)	-0.0617+	(-1.78)
incomeover80K	0.109**	(3.26)	0.259***	(6.97)	-0.0577	(-1.59)
hightalk	0.0671+	(1.9)	0.0648+	(1.81)	-0.0652+	(-1.82)
medtalk	0.0422	(1.51)	0.0467	(1.62)	-0.0198	(-0.66)
lowtalk	0.0283	(1.42)	0.0336	(1.6)	-0.0188	(-0.84)
skiptalk	-0.0000209	(-0.00)	-0.0167	(-0.61)	-0.029	(-1.00)
male	-0.00497	(-0.39)	0.000949	(0.07)	0.0144	(1.05)
age5to8	-0.0684**	(-2.88)	0.0174	(0.69)	0.0511+	(1.93)
age9to12	-0.0887*	(-2.38)	0.0318	(0.8)	0.0897*	(2.24)
age13to14	-0.123**	(-2.86)	-0.0108	(-0.24)	0.129**	(2.71)
age15to16	-0.176***	(-4.24)	-0.00647	(-0.14)	0.130**	(2.69)
age17to18	-0.292***	(-8.25)	-0.0434	(-0.97)	0.0997*	(2.02)
twochild	0.00978	(0.65)	0.0283+	(1.92)	-0.0187	(-1.19)
threechild	-0.0197	(-1.00)	0.0239	(1.19)	-0.0687**	(-3.29)
fourormore	-0.0193	(-0.63)	0.00418	(0.13)	-0.0656*	(-2.01)
peraboveavg	0.0979**	(3.29)	0.0496	(1.64)	0.0109	(0.35)
peravg	0.0347	(1.19)	0.0116	(0.4)	-0.0134	(-0.44)
per0to4	0.0824+	(1.95)	0.0433	(1.01)	0.0313	(0.7)
childwork	-0.0221	(-1.24)	-0.0269	(-1.45)	0.0485*	(2.49)
childwork0to9	0.0327	(0.96)	0.154***	(4.29)	-0.0765*	(-2.20)
scholarship	0.00227	(0.14)	-0.000461	(-0.03)	0.0418*	(2.32)
bursary	-0.00402	(-1.27)	-0.00749*	(-2.25)	0.0036	(0.97)
year1999	-0.129***	(-6.29)	0.447***	(22.57)	-0.192***	(-9.12)
maritimes	-0.0119	(-0.70)	-0.0444**	(-2.76)	0.00111	(0.06)
quebec	-0.0758***	(-3.73)	-0.107***	(-5.85)	0.0399+	(1.82)
manitoba	-0.0554**	(-2.64)	0.00466	(0.21)	0.0660**	(2.91)

Table 5 continued

saskatchewan	-0.0454*	(-2.27)	0.0286	(1.38)	0.128***	(5.9)
alberta	-0.0416*	(-2.11)	-0.00686	(-0.35)	0.0796***	(3.68)
BC	0.00588	(0.27)	-0.0239	(1.17)	0.00745	(0.32)
N	14,021		11,813		11,720	

Marginal effects; t statistics in parentheses

(d) for discrete change of dummy variable from 0 to 1

+ p<.10, * p<.05, ** p<.01, *** p<.001

Table 6: Full Sample OLS Regression Results for RESP and RESP amounts

	RESP Amounts		RESP	
	M.E	t-stat	M.E	t-stat
fathhighgrad	337.6	(0.64)	0.0362	(1.38)
fathsomepost	-45.34	(-0.10)	0.0517+	(1.7)
fathdiploma	242.1	(0.62)	0.0548*	(2.27)
fathunidegree	829.4+	(1.96)	0.148***	(5.61)
mothhighgrad	-322	(-0.77)	-0.000552	(-0.02)
mothsomepost	-463.6	(-1.09)	-0.0308	(-0.90)
mothdiploma	208.3	(0.54)	0.0292	(1.11)
mothUnidegree	578.5	(1.38)	0.108***	(3.71)
Hwdualearner	-357.7	(-0.41)	0.132*	(2.44)
Hwsingleeaner	13.53	(0.02)	0.105+	(1.87)
Hwnonearner	-1345.3	(-1.48)	0.0542	(0.82)
Spemployed	296.6	(0.39)	0.0477	(1.05)
other	1237.7	(0.54)	0.157*	(2.28)
fpublicemp	-898.8*	(-2.27)	-0.00186	(-0.09)
fprivateemp	-634.4+	(-1.71)	0.000118	(0.01)
fprivatesemp	215.7	(0.46)	-0.0117	(-0.45)
mpublicemp	332.4	(0.87)	-0.0464*	(-1.99)
mprivateemp	-85.46	(-0.28)	-0.0311	(-1.57)
mprivatesemp	54.82	(0.14)	-0.0668*	(-2.40)
fathage25to34	-624.5	(-0.97)	-0.015	(-0.44)
fathage35to44	-50.5	(-0.07)	0.0178	(0.53)
fathage44up	491.2	(0.55)	0.0531	(1.44)
mothage25to34	-276.4	(-0.42)	0.00213	(0.05)
mothage35to44	-466.1	(-0.67)	0.0144	(0.31)
mothage44up	192	(0.24)	0.0314	(0.64)
married	281.9	(0.36)	-0.114*	(-2.24)
highsch	838	(0.99)	-0.164**	(-3.03)
trade	-1681.7+	(-1.67)	-0.0682	(-1.28)
college	24.16	(0.03)	-0.107**	(-2.98)
university	669.3	(0.95)	-0.00844	(-0.27)
educdontknow	295.2	(0.36)	-0.0471	(-0.90)
british	-197.3	(-0.54)	0.00256	(0.1)
french	-484.2	(-1.06)	-0.0177	(-0.64)
ethother	112	(0.5)	0.0251	(1.62)
income20to50K	585.2	(1.36)	0.0486	(1.54)
income50to80K	911.0*	(2.01)	0.0723*	(2.25)
incomeover80K	1827.1***	(3.87)	0.109**	(3.26)
hightalk	-984.9	(-1.54)	0.0671+	(1.9)
medtalk	488.5	(0.83)	0.0422	(1.51)
lowtalk	-150.8	(-0.45)	0.0283	(1.42)
skiptalk	441.9	(0.89)	-0.0000209	(-0.00)
male	192.5	(0.92)	-0.00497	(-0.39)
age5to8	1145.4***	(4.94)	-0.0684**	(-2.88)

Table 6 continued

age9to12	1661.6***	(3.65)	-0.0887*	(-2.38)
age13to14	1326.5*	(2.52)	-0.123**	(-2.86)
age15to16	3215.0***	(5.37)	-0.176***	(-4.24)
age17to18	2653.9***	(3.64)	-0.292***	(-8.25)
twochild	-84.89	(-0.34)	0.00978	(0.65)
threechild	-723.3*	(-2.25)	-0.0197	(-1.00)
fourormore	-743.8	(-1.32)	-0.0193	(-0.63)
peraboveavg	-140.3	(-0.20)	0.0979**	(3.29)
peravg	-559	(-0.82)	0.0347	(1.19)
per0to4	-1541.0*	(-2.00)	0.0824+	(1.95)
childwork	-672.9*	(-2.29)	-0.0221	(-1.24)
childwork0to9	dropped	dropped	0.0327	(0.96)
scholarship	-43.44	(-0.15)	0.00227	(0.14)
scho0to4	-111.6	(-0.17)	dropped	dropped
bursary	-6.216	(-0.14)	-0.00402	(-1.27)
year1999	-1439.2*	(-2.48)	-0.129***	(-6.29)
maritimes	-518.0*	(-1.99)	-0.0119	(-0.70)
quebec	-944.6**	(-3.04)	-0.0758***	(-3.73)
manitoba	-1076.7***	(-3.84)	-0.0554**	(-2.64)
saskatchewan	-189.7	(-0.62)	-0.0454*	(-2.27)
alberta	-691.1*	(-2.37)	-0.0416*	(-2.11)
BC	163.3	(0.45)	0.00588	(0.27)
N	5,354		14,021	

Marginal effects; t statistics in parentheses

(d) for discrete change of dummy variable from 0 to 1

+ p<.10, * p<.05, ** p<.01, *** p<.001

Table 7: Full Sample Probit Results Examining Human Capital Investment on Parents decision to save

	Save	
	M.E	t-stat
fathhighgrad	0.0174**	(2.82)
fathsomepost	0.000746	(0.12)
fathdiploma	0.0229***	(4.14)
fathunidegree	0.0310***	(4.01)
mothhighgrad	0.0105	(1.57)
mothsomepost	0.00971	(1.16)
mothdiploma	0.0227***	(3.44)
mothunidegree	0.0226**	(2.74)
HWdualearner	0.0406***	(3.8)
HWsingleearner	0.0246*	(1.96)
HWnonearner	0.007	(0.5)
SPemployed	0.0277**	(2.66)
other	0.0132	(0.83)
fpublicemp	-0.00331	(-0.68)
fprivateemp	-0.00805+	(-1.87)
fprivatesemp	0.00396	(0.58)
mpublicemp	-0.0120*	(-2.33)
mprivateemp	-0.0215***	(-4.43)
mprivatesemp	-0.0122*	(-1.98)
fathage25t034	-0.0272***	(-4.26)
fathage35to44	-0.0135+	(-1.91)
fathage44up	-0.00739	(-0.99)
mothage25to34	-0.00704	(-0.77)
mothage35to44	-0.0041	(-0.43)
mothage44up	-0.00268	(-0.26)
married	0.00523	(0.49)
highsch	-0.0139	(-1.06)
trade	-0.00382	(-0.25)
college	0.00894	(0.63)
university	0.0224*	(2.02)
educdontknow	0.00159	(0.11)
british	0.0230**	(2.9)
french	0.00124	(0.19)
ethother	0.00760*	(2.17)
income20to50K	0.0398***	(5.65)
income50to80K	0.0703***	(7.62)
incomeover80K	0.111***	(8.64)
hightalk	0.00767	(0.91)
medtalk	-0.00214	(-0.34)
lowtalk	0.00757	(1.49)
skiptalk	0.00499	(0.8)
male	0.000463	(0.15)
age5to8	0.00935	(1.52)

Table 7 continued

age9to12	0.00465	(0.58)
age13to14	0.0244*	(2.3)
age15to16	0.0310**	(2.7)
age17to18	0.0172	(1.62)
twochild	-0.0039	(-1.13)
threechild	-0.0207***	(-4.99)
fourormore	-0.0275***	(-5.08)
peraboveavg	0.0149*	(2.2)
peravg	0.00546	(0.88)
per0to4	0.0440+	(1.84)
childwork	0.00167	(0.42)
childwork0to9	-0.588***	(-87.14)
scholarship	0.00707+	(1.8)
scho0to4	-0.851***	(-113.97)
bursary	0.00111	(1.55)
year1999	-0.878***	(-111.63)
maritimes	0.0166***	(3.54)
quebec	-0.0396***	(-8.28)
manitoba	0.0217***	(3.39)
saskatchewan	0.0373***	(5.2)
alberta	0.0041	(0.83)
BC	-0.00204	(-0.41)
highsports	0.0302***	(4.53)
medsports	0.0259***	(4.19)
lowsports	0.0148*	(2.34)
sports0to4	0.0295*	(2.3)
highsocial	-0.0104	(-1.39)
medsocial	0.0150*	(2.36)
lowsocial	0.00114	(0.21)
highculture	0.0220*	(2.12)
medculture	0.0145*	(2.1)
lowculture	0.0165*	(2.42)
highelp	0.00808	(1.12)
medhelp	0.00162	(0.23)
lowhelp	0.0014	(0.21)
help0to4	-0.0290+	(-1.75)
soc0to4	dropped	dropped
cul0to4	dropped	dropped
N	31,141	

Marginal effects; t statistics in parentheses

(d) for discrete change of dummy variable from 0 to 1

+ p<.10, * p<.05, ** p<.01, *** p<.001

Table 8: Full Sample Probit Results Examining Human Capital Investment on Saving Instruments

	RESP		RESP Amounts		Mutual Funds		Saving Bonds	
	M.E	t-stat	M.E	t-stat	M.E	t-stat	M.E	t-stat
fathhighgrad	0.0348	(1.35)	315.9	(0.63)	0.0167	(0.6)	0.0246	(0.94)
fathsomepost	0.0457	(1.51)	-71.28	(-0.15)	0.0249	(0.76)	0.0587+	(1.84)
fathdiploma	0.0519*	(2.19)	239.3	(0.61)	0.0595*	(2.23)	0.0176	(0.73)
fathunidegree	0.140***	(5.31)	823.8+	(1.88)	0.0641*	(2.17)	-0.00766	(-0.28)
mothhighgrad	-0.00952	(-0.34)	-261.1	(-0.59)	0.05	(1.61)	0.039	(1.39)
mothsomepost	-0.0426	(-1.25)	-381.5	(-0.86)	0.0752*	(1.98)	0.0837*	(2.29)
mothdiploma	0.0203	(0.77)	264.9	(0.66)	0.0682*	(2.33)	0.0249	(0.97)
mothunidegree	0.0947**	(3.26)	660.6	(1.52)	0.0862**	(2.65)	0.0104	(0.36)
HWdualearner	0.136*	(2.55)	-528.2	(-0.61)	0.0913+	(1.8)	0.0183	(0.37)
HWsingleearner	0.111*	(2.02)	-247.1	(-0.29)	0.0709	(1.28)	0.0331	(0.64)
HWnonearner	0.0601	(0.92)	-1528.5+	(-1.72)	0.113	(1.56)	0.00165	(0.03)
SPemployed	0.0446	(0.99)	220.5	(0.3)	0.137**	(2.85)	0.0243	(0.54)
other	0.152*	(2.21)	1133.2	(0.54)	0.138	(1.64)	0.028	(0.4)
fpublicemp	0.000798	(0.04)	-963.4*	(-2.33)	-0.0226	(-1.08)	0.0306	(1.47)
fprivateemp	0.000668	(0.04)	-658.8+	(-1.75)	-0.0181	(-0.96)	0.0147	(0.81)
fprivatesemp	-0.00998	(-0.38)	198.1	(0.42)	-0.0460+	(-1.90)	0.00319	(0.13)
mpublicemp	-0.0463*	(-1.98)	335.7	(0.88)	-0.0196	(-0.84)	0.0603*	(2.53)
mprivateemp	-0.0333+	(-1.68)	-56.87	(-0.18)	-0.0476*	(-2.40)	0.024	(1.22)
mprivatesemp	-0.0679*	(-2.44)	19.37	(0.05)	-0.000375	(-0.01)	0.00631	(0.23)
fathage25t034	-0.0183	(-0.54)	-734.3	(-1.19)	0.0296	(0.9)	-0.0401	(-1.21)
fathage35to44	0.0131	(0.39)	-173.6	(-0.25)	0.0599+	(1.89)	-0.00354	(-0.11)
fathage44up	0.0509	(1.39)	368.5	(0.42)	0.0703+	(1.91)	-0.0067	(-0.18)
mothage25to34	0.00692	(0.15)	-159.9	(-0.24)	-0.0568	(-1.25)	-0.0291	(-0.66)
mothage35to44	0.0179	(0.39)	-325.9	(-0.46)	-0.0117	(-0.25)	-0.0331	(-0.74)
mothage44up	0.0347	(0.71)	311.6	(0.39)	-0.0278	(-0.58)	-0.00112	(-0.02)
married	-0.110*	(-2.18)	290.4	(0.36)	-0.0405	(-0.77)	-0.0368	(-0.74)
highsch	-0.236***	(-4.26)	813.7	(0.95)	0.129+	(1.81)	0.0395	(0.58)
trade	-0.0823	(-1.06)	-1671.2	(-1.57)	0.121	(1.4)	0.0339	(0.46)
college	-0.159**	(-2.73)	38.52	(0.05)	0.0496	(0.84)	0.0764	(1.21)
university	-0.0481	(-0.79)	666.6	(0.94)	0.109*	(2.24)	0.03	(0.55)
educdontknow	-0.0583	(-0.90)	314.8	(0.38)	0.114+	(1.76)	-0.0223	(-0.38)

Table 8 continued

british	0.00502	(0.2)	-257.8	(-0.70)	-0.0041	(-0.16)	-0.0332	(-1.49)
french	-0.0204	(-0.74)	-432.1	(-1.00)	0.0885**	(3.04)	0.0277	(1.06)
ethother	0.0226	(1.46)	113.9	(0.51)	0.0124	(0.81)	-0.00656	(-0.42)
income20to50K	0.0477	(1.54)	665.1	(1.5)	0.121***	(3.44)	-0.0039	(-0.13)
income50to80K	0.0667*	(2.1)	979.0*	(2.12)	0.191***	(5.33)	0.0203	(0.65)
incomeover80K	0.0986**	(2.97)	1812.4***	(3.77)	0.254***	(6.8)	0.0237	(0.74)
hightalk	0.0701*	(2.01)	-1182.1+	(-1.84)	0.0605+	(1.7)	-0.0281	(-0.90)
medtalk	0.0394	(1.41)	443.8	(0.76)	0.0477	(1.61)	-0.012	(0.46)
lowtalk	0.0295	(1.48)	-133.7	(-0.39)	0.0321	(1.52)	-0.0125	(-0.64)
skiptalk	0.0117	(0.42)	290.7	(0.58)	-0.00933	(-0.34)	0.0254	(1.02)
male	-0.0000354	(-0.00)	211.9	(1)	-0.000418	(-0.03)	0.00343	(0.27)
age5to8	-0.0689**	(-2.79)	1183.8***	(4.45)	0.00294	(0.11)	0.0750*	(2.55)
age9to12	-0.106**	(-3.24)	1742.3***	(3.65)	-0.0226	(-0.65)	0.104**	(2.74)
age13to14	-0.154***	(-4.41)	1664.0**	(3.06)	-0.0861*	(-2.50)	0.0717+	(1.67)
age15to16	-0.208***	(-6.14)	3583.0***	(5.75)	-0.0789*	(-2.20)	0.132**	(2.9)
age17to18	-0.321***	(-11.18)	3209.4***	(4.31)	-0.105**	(-3.03)	0.177***	(3.73)
twochild	0.00789	(0.53)	-66.95	(-0.27)	0.0287+	(1.96)	0.00652	(0.46)
threechild	-0.0172	(-0.88)	-684.0*	(-2.10)	0.026	(1.3)	-0.00398	(0.21)
fourormore	-0.0128	(-0.42)	-680.7	(-1.19)	0.00661	(0.2)	-0.0915***	(-3.45)
peraboveavg	0.0824**	(2.8)	-105.7	(-0.15)	0.0357	(1.21)	0.00194	(0.07)
peravg	0.0221	(0.76)	-572.4	(-0.83)	0.000951	(0.03)	0.023	(0.85)
per0to4	0.0919	(0.88)	-1710.1	(-1.18)	-0.0347	(-0.41)	0.0219	(0.25)
childwork	-0.0206	(-1.16)	-663.6*	(-2.30)	-0.0299	(-1.61)	0.00044	(0.02)
childwork0to9	0.0125	(0.39)	dropped	dropped	dropped	dropped	dropped	dropped
scholarship	0.00395	(0.25)	-73.71	(-0.26)	-0.00419	(-0.27)	0.0246	(1.49)
scho0to4	dropped	dropped	-246.6	(-0.38)	-0.120***	(-3.99)	-0.0658*	(-2.21)
bursary	-0.0041	(-1.30)	-1.126	(-0.03)	-0.00633+	(-1.90)	-0.000649	(-0.20)
year1999	-0.140***	(-6.92)	-1592.3**	(-2.74)	0.317***	(11.04)	-0.109***	(-4.17)
maritimes	-0.00934	(-0.55)	-474.6+	(-1.82)	-0.0511**	(-3.19)	-0.0481**	(-3.02)
quebec	-0.0710***	(-3.45)	-970.7**	(-3.11)	-0.101***	(-5.44)	-0.0526**	(-2.75)
manitoba	-0.0578**	(-2.74)	-1011.6***	(-3.69)	0.00805	(0.35)	-0.00466	(-0.23)

Table 8 continued

saskatchewan	-0.0448*	(-2.23)	-126	(-0.42)	0.024	(1.17)	0.0125	(0.62)
alberta	-0.0457*	(-2.32)	-646.7*	(-2.22)	-0.00775	(-0.39)	-0.0540**	(-2.99)
BC	0.00177	(0.08)	138.7	(0.38)	-0.0248	(-1.22)	-0.0111	(-0.55)
highsports	0.00202	(0.09)	367.5	(0.88)	0.0605**	(2.71)	0.0654**	(2.97)
medsports	-0.00112	(-0.05)	10.01	(0.02)	0.0543*	(2.5)	0.0164	(0.8)
lowsports	0.00655	(0.26)	319.6	(0.55)	0.0695**	(2.68)	0.00842	(0.37)
sports0to4	0.000566	(0.01)	101.3	(0.19)	dropped	dropped	0.113*	(2.4)
highsocial	0.043	(1.3)	-994.1*	(-2.31)	0.0817*	(2.19)	-0.00128	(-0.04)
medsocial	-0.0231	(-1.02)	-772.9*	(-2.30)	0.00601	(0.29)	0.0131	(0.59)
lowsocial	-0.0301	(-1.39)	-357.9	(-0.79)	0.0812***	(3.6)	0.0194	(0.97)
highculture	-0.0118	(-0.33)	2251.8*	(2.17)	0.0067	(0.2)	0.00756	(0.24)
medculture	0.0288	(1.32)	49.93	(0.16)	0.00532	(0.26)	0.0283	(1.26)
lowculture	0.0365	(1.55)	25.3	(0.06)	-0.00821	(-0.37)	0.0222	(1.05)
highelp	-0.0544+	(-1.76)	488.7	(0.67)	-0.0131	(-0.43)	0.0357	(1.15)
medhelp	-0.0121	(-0.39)	-83.21	(-0.11)	-0.0153	(-0.51)	0.0417	(1.34)
lowhelp	-0.0281	(-0.95)	-1085	(-1.51)	-0.0264	(-0.93)	0.00367	(0.13)
help0to4	-0.0702	(-0.72)	436.5	(0.3)	0.0584	(0.74)	-0.0707	(-0.93)
soc0to4	dropped	dropped	dropped	dropped	dropped	dropped	dropped	dropped
cul0to4	dropped	dropped	dropped	dropped	0.0371	(-0.73)	dropped	dropped
N	14,021		5,354		11,813		11,720	

Marginal effects; t statistics in parentheses

(d) for discrete change of dummy variable from 0 to 1

+ p<.10, * p<.05, ** p<.01, *** p<.001