

Effect of the Small Business Deduction Limit and Rates on Small
Canadian-Controlled Private Corporations

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Abstract

This paper studies the effect of the Small Business Deduction (SBD) on Canadian-Controlled Private Corporations (CCPCs). The first section starts by overviewing the literature on investment expenditures and the taxation rules for CCPCs, followed by an empirical model to evaluate the combined impact of the SBD limit and tax rates on firm investment from 2001 to 2008. The objective is to determine if increasing SBD limits and decreasing tax rates have had a positive impact on CCPCs. The sample observations are aggregated by province and year to estimate the combined federal and provincial SBD impact on investment. The empirical results from our OLS regressions show that this tax policy does in fact have a positive and statistically significant impact on investment.

1 – Introduction

Numerous studies have indicated that small and medium enterprises (SME) are one of the key elements to economic growth, employment and poverty alleviation. As suggested by Hallberg (2000), SMEs are the emerging private sector and have a serious impact on private sector-led growth. In most countries, SMEs account for the large majority of firms and an important share of employment. Statistics from Industry Canada show that in 2009 there were just over 1 million incorporated SMEs in Canada, of which about 98% had less than 100 employees (Industry Canada 2010).¹ These businesses have a wide variety of skills and operate in a range of different markets, industries and social environments. While some SMEs have no intention of growing overtime, it may take several years for a firm to grow to its optimal size (large or small).

Most of the current large companies in the economy have been a SME and have grown throughout the years to achieve their current state. These large companies are only a small portion of many that have survived over the years, because of various factors including sound investment and management decisions and the ability to finance their investment projects. In fact, studies show that about 1 in 5 new companies will survive to see their tenth anniversary.² Hence it is essential for SMEs to obtain the optimal financing and investment in order to be able to expand and compete in domestic and international markets.

Of all the factors that can significantly influence the growth and survival of these enterprises, most studies have shown that financial constraints have proven to be one of the most important. Empirical evidence from Beck and Demirgüç-Kunt (2006) confirmed that financial

¹ Industry Canada defines a SME as a firm having less than 500 employees.

² *A portrait of Entrants and Exits*, June 1999, John R. Baldwin, Statistics Canada.

constraints tend to be more relevant for smaller firms than for the larger ones. Shiffer and Weder (2001) also showed that smaller firms report higher growth obstacles than medium firms and medium firms report higher growth obstacles than larger firms. One explanation is that, because of transaction costs and information asymmetries, smaller firms face relatively higher risk premiums and transaction costs. Smaller firms have also less collateral to offer; therefore, financial institutions will not always be willing to bare the risk of loaning to some SMEs. For these reasons, governments have generally tried to help smaller firms by offering a wide variety of tax incentives and programs targeted to small businesses.

Although many papers have studied the financial constraints faced by SMEs, little has been done for quantifying the impact of the different policies put in place by governments in order to help them. Many fiscal advantages are given to companies that operate in Canada in order to promote growth and competitiveness within the country and throughout international markets. For example, one of the benefits available to small Canadian Controlled Private Corporations (CCPCs) is the Small Business Deduction (SBD), a deduction that allows eligible SMEs to benefit from a reduced effective tax rate on active business income up to a certain threshold. The SBD raises the after-tax profit of small businesses in an attempt to alleviate their potential funding problems. These additional earnings provide the opportunity for companies to develop and invest, repay debt or increase the owners' income through dividends. The aim of this paper is to determine to what extent small CCPCs take advantage of this deduction combined with the decreasing tax rates to invest, grow and become more competitive or simply transfer more profits to owners in the form of dividends. The analysis is done with firm data that has been aggregated by province over 2001-08.

The paper focuses on corporations, as unincorporated businesses are not eligible to the SBD. The analysis includes the federal and provincial SBDs which are very similar to each other. Only the rates and the thresholds of income on which the lower effective tax rate is applied differ from one province to another and federally.

Section 2 gives an overview of the federal and provincial small business taxation and the SBD. Section 3 reviews the literature on the factors affecting investment decisions, dividend payments, the level of debt and other possible uses of incremental income for companies eligible to the SBD. The methodology used to estimate these effects is explained in section 4. Section 5 presents the detailed results and tests of the present analysis and section 6 concludes with additional remarks.

2 – Small Business Taxation and SBD

This section concentrates on the taxation of business income which is eligible for the SBD advantage at the federal and provincial levels. Most parts of this section summarize the taxation rules of SMEs that are found in *Preparing your Corporate Tax Returns (2010)* by M. Mallin.

The SBD effectively reduces the income tax rate applied to the income of CCPCs up to a certain limit, which is equal to the lesser of:

- the income from active business carried on in Canada for the year,
- the taxable income for the year,
- the business limit for the year, or

- the reduced business limit for the year.

An active business is defined as a business which is not specified as an investment income business or a personal services business. Active business income includes all income that is not derived from investment, namely capital gains, royalties, interest, rent and dividends. Investment income is usually subject to a higher tax rate than the general rate but is not eligible to be calculated in the SBD since it is considered as passive income.

In practice, the SBD reduces the amount of Part 1 tax that would have to be paid by reducing the general federal or provincial rates at which corporate income would otherwise be taxed. Part 1 tax is calculated by multiplying the taxable income by the basic rate of 38% (see Table 1) and then deducting from this tax payable, the available credits and deductions such as the SBD. Passive income such as interest income, rental income and royalties are not available to be included in the calculation for the SBD. The reduction is solely applied on the eligible income up to the business limit or reduced business limit and the limit must be shared among a group of corporations if they are considered associated. The federal business limit has slowly increased between the years from \$200,000 in 2001 to reach \$500,000 in 2009. Table 1 in the Annex summarizes the federal reduction rates, the business limits and the general rate reductions for 2001 through 2009. Table 2 summarizes the difference between the general rate reduction and the SBD rate for the provinces and the federal government over the same years that are used to calculate the total SBD advantage. The provincial SBD limits have also increased in a very similar matter as the federal SBD limit and can be seen for every province in Table 2.

The reduced business limit is only applied on companies who had more than \$10 million in taxable capital in the previous tax year. In fact, the business limit is reduced by 0.225% for

every dollar of taxable capital over \$10 million. The federal business limit is fully ground down when a company reaches a taxable capital amount of \$15 million, after which point businesses are no more eligible for the SBD advantage. General income above the business limit threshold is subject to the general rate reduction (see Table 1) for federal taxation. For example, in 2008, income subject to the SBD is taxed at the 11% while income greater than the threshold will be taxed at 19.5%. The general federal rate calculated after the general rate reduction is higher than the federal small business rate but has been reduced throughout the years to bring the gap between these two rates from 15% in 2001 to 8% in 2009. The differences between the general rates and small business rates for provinces and the federal government are summarized in Table 2. With the corresponding business limits and rates, businesses could generate a maximum tax saving at the federal level of \$30,000 in 2001 which slowly moved down to \$22,500 in 2004 and gradually increased to reach \$40,000 in 2009 with the changes in rates and SBD limits. Note that this maximum is the case if a company files a tax year of 365 days and is not associated. The SBD limit is prorated by the number of days in the tax year and is prorated when the SBD limit changes for corporations who do not file a tax year from January 1st to December 31st.

For incorporated businesses, only corporate profits are subject to corporate income tax (CIT). The corporate profits are defined by business income net of wages and must be positive in order to be taxed. A business with negative or zero corporate profit will in theory not pay taxes and not be eligible to have the SBD advantage. Since most start-up companies will not be profitable for several years, most of these businesses will carry forward their losses to periods when they start to be profitable. If the business begins to be profitable, it may become eligible to have SBD to reduce Part 1 tax paid in the current year if it does not fully offset its taxable income with losses. Since the SBD can only be used in the year in which it has been acquired,

some companies will prefer to utilize losses to reduce taxable income up to the business limit in order to fully take advantage of these benefits. In this case, companies fully take advantage of the SBD by having most of their income taxed at the SBD rate until their loss pools are exhausted. In which case, the companies would not necessarily fully offset the taxes payable in a given year unless other credits are applied but would maximize after-tax profits in the long run because of the lower effective tax rate and time value of money.

The after-corporate tax profit can also be subject to personal income taxation (PIT) if a firm decides to distribute some profits to owners or sell equity shares (or assets). From now on, shareholders will refer to the owner(s) of the businesses since only private corporations are considered in this paper. The distribution of after-tax profits to shareholders will normally be subject to shareholder-level dividend taxation; however, capital gains on shares resulting from the retention of after-tax profits may be subject to capital gains taxation upon the disposition of the shares or assets. Both of these actions will bring different levels of double taxation which can induce a higher effective tax rate in the end. As for the supplementary profit brought upon by the SBD advantage, with a main objective to increase investment and promote growth, this double taxation acts as a disincentive to deviate from investment.

Extra-profit obtained by the SBD advantage which is taxed at a lower rate will face a rate very similar to the corporate tax rate if ever these profits are transferred to shareholders in the form of dividends. In this case, the SBD advantage would disappear because of the PIT on dividends and the cost to both the federal and provincial governments would be eliminated.

As for capital gains taxation on the after-tax profits of the disposition of shares or assets, only 50% of the capital gains are taxed as if it were investment income. The other half of the

capital gain is not subject to income taxation. Since capital gain taxation is only applied when firms dispose of the shares or assets (when the capital gain is incurred), it will not necessarily stop firms from raising capital. Because of the time value of money, the decreasing tax rates and firms wait to sell their shares or assets to defer the capital gains, the effective tax rate on capital gains may be very low. This implies that the required rate of return on new equity may be lower than other forms of financing. Capital gains can also be transferred to shareholders in the form of dividends, where the 50% non-taxable portion of the realized capital gain can be paid out as a tax-free capital dividend. The 50% taxable portion of the capital gain would be subject to the shareholder dividend tax rate. However, a portion of the tax paid on interest income, dividend income and capital gain that is paid out to the shareholder as a dividend is refundable to the corporation.

Apart from the reduced tax rates on SME profit like the SBD advantage, there are also other incentives for SME investment in the form of accelerated depreciation of assets and investment tax credits. The accelerated depreciation lets businesses benefit from investment much faster by allowing them to offset tax sooner by depreciating equipment, buildings and other assets that have been acquired by investment. The depreciable assets that a business has acquired from investment are depreciated faster as an incentive for them to reinvest sooner. Capital Cost Allowance (CCA) is the form of asset depreciation that firms use to depreciate investments and lower their effective cost. For the investment tax credit (ITC), it works in a very similar manner as the SBD. The only difference is that the ITC is conditional on the firm undertaking investment expenditures.

One of the much known forms of ITC is the federal Scientific Research and Experimental Development (SR&ED) tax credit for SMEs. It allows Canadian firms to credit R&D

expenditures at the federal level at a rate of up to 35% on the first \$3 million of R&D expenditures and then at 20% for expenditures greater than \$3 million. This credit allows corporations to reduce their corporate taxes as an incentive to invest or lower the cost of SR&ED expenses. Unlike the SBD, the ITC can also be carried-forward and backward to profitable years. Since the ITC is a credit on investment expenditures, it also lowers the effective cost of undertaking investment eligible for an ITC tax credit. The problem with these incentives is that many SMEs do not have the capital or the assets to fully reap the rewards of these programs. These programs are more likely to be used by mature and larger corporations.

3 – Literature Review

This section of the paper focuses on the literature on tax incentives targeted to encourage SME investment. It also overviews the literature on dividend taxation, the level of debt undertaken, shareholder taxation and other factors that potentially influence substitution of investment.

Most firms may not always have the objective to grow. However, investment in capital and innovation will always be an option for SMEs no matter their objective. For SMEs subject to product and price competition, investment in product, process or technology innovation could mean the difference between success and failure. Innovation can lead to companies being more competitive by generating greater rates of return. It can also lead to growth advantages by creating economies of scale and efficiencies by lowering costs. Investment and innovation for SMEs can not only generate benefits for the business itself but can also create positive

externalities for the entire economy when the innovation is not specific to the business. The spillover effect created by innovation can also reduce the incentives of companies to invest in innovation if the costs of innovation cannot be fully recovered because of spillovers. Being able to contain the spillovers could increase the incentive to innovate but may be too costly compared to the benefits for most small firms. In which case, firms may be more interested in giving out dividends to shareholders instead of investing. For this paper, the amount of dividends paid from a corporation to its shareholders will also capture the spillover effects created by the substitution of investment.

Many incentives exist to target the investment and innovation of SMEs through tax policies and tax credits. However, project investments and innovations can require physical, human and financial resources in order to be realized. R&D spending can be very costly since it may include wages and salaries of skilled workers and can also involve sunk costs. Alderson and Betker (1996) have shown that most R&D expenditures are sunk and cannot be redeployed. Hence, financing such investments with external funds such as loans can be very costly. Czarnitzki and Hottenrott (2009) have found that firms will mostly rely on internal sources of funding in order to realize R&D expenditures which can constrain financing because of their insufficient cash flows. Müller and Zimmermann (2006) have also shown that a higher equity ratio is conducive to younger firms undertaking more R&D investments while older firms rely more on retained earnings and outside financing in order to invest.

Although the effects of R&D investment can take years before results are observed, Czarnitzki and Hottenrott (2009) have shown that the effects of R&D investment are considerably stronger than capital investment. Investment in capital on the other hand does not rely as much on internal funding because of the greater level of collateral it offers and the higher

information certainty it brings. In either case, firms that are constrained financially will always look for internal and external financing in order to undertake any form of investment which would possibly involve undertaking debt.

Another factor that could possibly have a significant impact on a firm's decision to invest is their level of current debt. Empirical studies from Chung and Wright (1998) and Czarnitzki and Kraft (2004) have found a negative relationship between firm debt ratios and their R&D expenditures. This is due to the fact that they would not have access to external financing and must repay existing debt as well as finance their R&D investments at the same time. However, Chiao (2002) has demonstrated with a sample of U.S. firms that current physical investment raises current debt and that current R&D investment lowers current debt. That is, firms prefer to use debt in order to finance capital investments but not R&D. Hence, in either case, the amount of debt will certainly have an impact on a firm's investment decision.

As mentioned in the previous section, another possible alternative to investing would be dividend distribution to shareholders. Many studies have shown that the level of dividend taxation can affect investment decisions and dividend distribution. Kari, Karikallio and Pirttilä (2009) have studied two different views of dividend taxation which has separated groups of economists. Earlier economists have said that financing is mostly done by raising new equity, where dividend taxation would distort both dividend distribution and investment decisions. However, recent economists have assumed that financing is done mostly by postponing or cutting dividend payments in order to finance investment. In which case, the cost of investment and future returns would be lowered in the same proportion and this would have no impact on the dividend distribution or investment decision.

Korinek and Stiglitz (2009) have demonstrated that an anticipated dividend tax increase for firms that are financially constrained and have higher than average dividend distributions will lower investment even with a constant long-run cost of capital. Kari, Karikallio and Pirttilä (2009) have studied the Finnish dividend tax increase of 2005 and observed a large dividend payout increase as soon as the dividend increase was announced in 2002-03 up until it was put in place. They also observed a dividend decrease for all firms who faced the higher dividend tax when it took effect. As for firms who did not face the dividend tax increase, they did not find any evidence of changing dividend decisions; however, their findings were more consistent with recent economists that investment financing was mostly done by postponing or cutting dividends.

An older paper by Hendricks, Amit and Whistler (1997) as also studied the impacts and components of the Small Business Deduction from 1984 to 1993. They have concentrated on the start-up CCPC cohorts and showed that smaller CCPCs benefit the most from the SBD while mature CCPCs tend to claim the larger part of the total SBD. During this period, the SBD limit was constant at \$200,000, and they showed that many corporations could not take advantage of the lower tax rate because they were not profitable. However, they did show that some corporations grew greater than the threshold because of the SBD.

4 – Methodology

4.1 – Data and variables

The economic models specified in this study employ aggregated data from the Cortax database created by the Canada Revenue Agency. This database contains information from the T2 Corporation Income Tax Return and various schedules as well as their General Index of Financial Information (GIFI) they provide every year. The data includes all incorporated firms who have filed an income tax return with the Canada Revenue Agency (CRA) with tax years ending in 2001 to 2008 that fit the criteria specified for the study. The aggregate data includes all firms in a given year who have at least one dollar of small business deduction. Hence, no tax exempt firms are in the population and under the assumption of the SBD, each firm has at least one dollar in taxable income and should reside in Canada.

4.2 – Data Restrictions

Since the federal SBD limit rises over this period from \$200,000 to \$400,000 and CCPCs are considered small if they have less than \$15 million in taxable capital, it may be the case that only firms with smaller amounts of taxable capital will be the real beneficiaries from this policy. After CCPCs reach a taxable capital amount greater than \$10 million, the SBD starts to be ground down and is fully eliminated when it reaches a taxable capital of \$15 million. For this reason, only CCPCs having less than \$10 million in taxable capital are included in the analysis. This eliminates a very small portion of firms of which the SBD limit would not be reached because of the business limit reduction. Associated firms are also eliminated from the population

since they must share the business limit amongst them. They only account for a very small portion of the total firms eligible for the SBD.

In the analysis, two major industries with NAICS codes beginning by 52 (Finance and Insurance sector) and 55 (Management of companies and enterprises sector) are removed from the analysis because most of their profits are made out of passive income and they are most of the time not eligible for the SBD. These sectors are mainly composed of banks, insurance companies and holding companies. This will avoid confusion between the small portion of corporations that have revenue greater than the SBD limit which is not active income and taxed at a rate higher than the general rate.

All firms that will dissolve at the end of the year, are inactive or bankrupt, are also removed from the sample. Although most of these firms do not take the SBD, this will only help to maintain consistency within the population. Most firms that will dissolve can have SBD but are removed because they have different objectives than firms that will be staying in business the following year. For example, a firm might not invest in the year before dissolution or sell most of its assets before closure which could have an impact on the variables used in our observations. Because of the large amount of firms available, all firms with missing data have also been omitted from the population. Most insurance and non-resident corporations will be eliminated by this criterion since they do not file a GIFI.

Most small firms reside in a single province. As for the firms that reside in multiple provinces, most of these are large and are eliminated in the taxable capital limit criteria or SBD eligibility criteria. The remaining portion of firms residing in multiple provinces is removed from the population where we are only left with single provinces and outside Canada residents. The

few firms within every year that have specified that they are residing outside Canada and claiming SBD are also eliminated from the population because there is a high probability that this could be an error in the data. The remaining population is comprised of corporations residing in only one of the 10 provinces or 3 territories in Canada and is the starting point for creating the aggregate observations by year and by province.

Since the data consists of both time series and cross sectional groupings, the data has been set in panels. The panel data groups are created by averaging the amounts of every corporation by year and by province to test the combined effect of raising the SBD limit and reducing the gap between rates throughout the years. The variables are averaged to correct for the difference in the number of firms in each provincial observation and prevent the output of confidential taxpayer information. Taking the average also eliminates the possible double counting of stock and flow variables. On average, 62% of the eligible corporations are left in every year after applying the restrictions. The total number of corporations per year after the data restrictions can be seen in Table 3, where the smallest year has 245,254 corporations and the largest has 342,758 corporations.

The use of panel data will help us capture any effect that varies over time and/or provinces depending on the use of fixed or random effects regression. Fixed effects regressions are used to control for variables that differ between provinces in this case, but are constant over time. For fixed effects regressions, dummy variables are created for each province except one. The changes over provinces are reflected in the dummy variable coefficients. All the dummy coefficients are estimated by changes relative to the province that did not have a dummy variable which is estimated as the constant. On the other hand, random effects regression is used when there are no independent effects for each province. The random effects model does not use

dummy variables since it assumes that there is no difference between provinces. Because some provinces did not have the SBD for most of the periods in question (Quebec) and the variation in provincial rates and thresholds, we are making the assumption that the fixed effect model will better represent our data.

The use of panel data can also control for non-observable or omitted variables that change over time but not over provinces by observing changes in the dependant variable. Omitted variables that differ over provinces can also be controlled for if they do not vary over time. There are many advantages of using panel data regressions because of their flexibility. However, problems of autocorrelation and heteroskedasticity are often found in these types of models.

Because of no missing values and the same number of observations in each year, the panel is strongly balanced. There are a total of 104 aggregated observations, of which there are 13 different provinces over 8 years. The descriptive statistics seem to show that there is a lot of variance between every variable across years, provinces and combined observations. To stabilize the variance between all variables throughout the observations, the natural logarithm will be used on most variables in the regressions. The high variable variances also suggest that there might be presence of heteroskedasticity when doing the panel data regressions. This will be taken into consideration later on.

4.3 - Data Definition

The following table lists the variables created that could possibly have an impact on our dependent variable and may have been used to test the hypotheses of this study.

Dependent Variable	
Investment	Cost of addition from schedule 8 plus Scientific Research and Development expenses on schedule 31
Independent Variables	
Adj_taxinc	Taxable income from T2
Non_sbd_inc	Taxable income from T2 that is greater than the SBD limit
Sbd_limit	Taxable income from T2 that is equal or less than the SBD limit
Sbadvantage	Small Business tax advantage at the federal level
SBD_Total	Total of the Small Business tax advantage from the federal and provincial governments
Div_paid	Dollar amount of dividends paid to shareholders from schedule 3
Debt	Current amount of outstanding firm debt from balance sheet
CCA_claimed	Capital cost allowance claimed from Schedule 8
ITC	Investment tax credit and Investment tax credit refund from Schedule 31
Assets	Level of current Assets from balance sheet
Year	Year (2001 to 2008)
Province	Provincial group (13 provinces and territories)

The aforementioned schedules refer to schedules attached with the T2 Corporate Income Tax Returns.

Investment is the dependent variable that is used in all the models. It captures the total tangible and intangible expenditures that a given firm has invested in a year. The taxable income (adj_taxinc) is another variable that is important since it has a direct impact on the profit and cash flow of a firm. It is also incorporated in the calculation of the SBD advantage and SBD total to determine if a firm reaches the small business limit or not.

The SBD advantage (Sbadvantage) is created by multiplying the minimum between the federal business limit and the taxable income by the difference between the federal general rate

after reduction and the SBD rate. Part of this variable is already calculated on the T2 Corporate Income Tax Return, where the business limit has already been prorated to the number of days in the tax year. The SBD advantage reveals the amount of extra after-tax profit a firm has had in a given tax year in order to invest, keep money in the firm or pay dividends to its shareholders.

For the provincial SBD portion, no data for the provincial taxes of Quebec, Ontario³ and Alberta are accessible. The data is collected at the provincial level and not accessible by the CRA. Since the provinces use the same definition of income and SBD as the federal government with a few minor adjustments, the provincial SBD can be estimated with the federal variables by multiplying the minimum between the provincial business limit and the taxable income by the difference between the provincial general rate after reduction and the provincial SBD rate, prorated by the number of days in the tax year. The SBD Total variable is the sum of the provincial and federal SBD advantage. Figure 1 in the Appendix represents the changes in the federal SBD claimed as well as the changes in the combined federal and provincial SBD claimed from 2001 to 2008. As we can see, the SBD has fluctuated according to the changes in the policy throughout the years.

The Capital Cost Allowance claimed is the amount of asset depreciation that has been taken by a firm in a given tax year. As mentioned in section 2 of this paper, the Capital Cost Allowance claimed lowers the cost of investment. The debt variable is the sum of all amounts that the corporation has borrowed. This includes business loans, lines of credits, mortgages, credit card loans and other amounts owed.

The models specified later will be using the SBD total variable to estimate the significance effect of raising the business limit and decreasing the gap in tax rates on investment

³ Ontario corporate income tax is administered by the Canada Revenue Agency for tax years ending in 2009 and later.

at the combined federal and provincial level. Before starting any of the analyses, it is always important to understand the data and the aggregated samples. Therefore, the descriptive statistics of all variables in the panel of data to be used (see Table 4) is analyzed. The tables give us the average, standard deviation and count of all variables throughout the population. The minimum and maximum are also given and help identify any extreme values within our panel. However, because we are working with panel data, it is also important to analyze the variables “between”, which are the differences between the provinces, and “within”, which are the differences between the years.

It is important to note that these are all the available variables that could help us in the analysis and were previously validated to ensure their accuracy. The data is subject to certain limitations including the accuracy and completeness of the information provided by corporations. Non-sampling errors such as data capture errors, non-response errors and other processing errors are also possible but are minimized by the large population in the data set. Because of the large data set, it is impossible to eliminate every data error, however it is possible to identify extreme values and inconsistencies that can be corrected or removed before aggregating observations. Most reporting and data entry errors are corrected directly at the CRA where accounting procedures are used and balancing is required.

4.4 – Regression Model

Various ordinary least square (OLS) models have been regressed in this paper. As explained in the next section, we have determined that the best panel data model to characterize our data is described by the following equation with fixed effects using weighted least squares:

$$\log Invest = \beta_0 + \beta_1 \log SBA_{i,t} + \beta_2 \log Div_paid_{i,t} + \beta_3 \log Debt_{i,t} + \beta_4 \log NonSBDinc_{i,t} + \beta_5 \log ITC_{i,t} + \sum_{s=6}^{17} \beta_s Prov_i + \epsilon_{i,t} \quad (1)$$

Where i is a province and t is a year. The β 's are the coefficients to be estimated that represent the impact on investment of each independent variable, and the ϵ 's are the error terms. The $Prov$ variables are the dummies created to take into account the fixed effect of every province.

Before specifying any regression models, the correlation between all the independent variables that could be included in the models was looked at to avoid any multicollinearity problems. Multicollinearity does not bias results but will tend to increase the standard errors of coefficients which could bias the significance levels and the confidence intervals. In this case, the confidence intervals would be much larger and it would be difficult not to reject the null hypotheses that coefficients are different from zero. It is also possible to detect multicollinearity in regressions when the coefficient of determination R^2 is high and the t statistics are not significant.

From table 5 in the Appendix, it is easy to see that multiple variables are highly correlated. The Debt, CCA claimed and Assets are extremely correlated since they have correlation coefficients greater than 0.90. In this case, to avoid any multicollinearity problems, only one of these variables was included in the regressions. Since Debt is a good explanatory variable that has been used in many studies on investment, this variable was used in the regressions. Another variable that is not used in the regressions is the taxable income. This variable is somewhat correlated with most variables and has also been used in the calculation for the Non-SBD income, the SBD advantage and the SBD total. There is also a significant

correlation coefficient of 0.73 between SBD advantage and SBD total but they are not be used in the same regression.

5 – Econometric Analysis

5.1 – Small Business Advantage model results

The regression results to find the effect of decreasing the income tax rate differential combined with increasing the small business limit at the combined federal and provincial level can be seen in Table 6. The null hypotheses for all variables in the regression test that the coefficients are equal to zero. The SBD total coefficient is positive but not statistically significant at the 90% confidence level. The SBD total coefficient is equal to 0.167 and since both the investment and the SBD total are in logarithmic forms, this translates to an increase of 0.167% in investment for every 1% increase in the SBD total. Even with a result that is not significant, we can say that this tax policy does help investment financing of small corporations. Having a low coefficient such as this one may influence the thoughts of having an inefficient policy but we must not forget that we are only considering investments done in the same year. Our result could be underestimated since money can be left in the corporation or invested in future years.

The dividends paid coefficient is negative and statistically significant at the 95% confidence interval. The null hypothesis that the coefficient is equal to zero is rejected. Its coefficient is equal to -0.128 and means that for every 1% increase in dividends paid, investments are reduced by 0.128%. The amounts of dividends paid have a significant negative

impact on investments. The debt coefficient is positive and statistically significantly at the 95% confidence interval. The debt coefficient is equal to 0.417 and means that for every 1% increase in debt, investment is increased by 0.417%. The Non-SBD income is also positive but not statistically significant at the 90% confidence interval. Its coefficient is equal to 0.088 and means that for every 1% increase in Non-SBD income, investments are increased by 0.088%. It is normal in this case that the Non-SBD income may not be significant since most firms in the analysis will not surpass the small business limit to have Non-SBD income.

5.2 - Determination of the Right Model

Before choosing the model specified in section 4.4, we have run many different models with different options to finally determine that this was the model that better explained our data. Table 6 sums the statistics of all the different regression combinations as well as the final regression model that we have tested. We have tested different combinations of OLS regressions with fixed effects, random effects and with no fixed or random effects. For all the regressions tested, the sign of the coefficients (positive or negative) did not change and were all in line with the literature and the hypotheses.

Using only regressions with fixed effects and always having investment as the dependent variable, we have started with the base model containing the SBD total, the dividends paid and the debt as the independent variables. This model has been set as the base model since these are the main factors that have been proven to have an effect on investment decisions. In this model, only debt is significant and we have an adjusted coefficient of determination equal to 0.690. We then added the Non-SBD income variable to our model which improved our adjusted coefficient

of determination to 0.741. This variable is significant at the 95% confidence and did not have a significant impact on the coefficient of SBD total. However, the debt coefficient did decrease, the dividends paid coefficient increased and the dividends paid coefficient is now significant at the 95% confidence interval. An explanation of this could be that having more Non-SBD income would not increase SBD total but would in fact lower the amount of debt needed to finance investments and would increase the amount of dividends available to be paid to shareholders. In this case, we can say that adding this variable to our model may increase the power of our results.

We then proceeded by adding the ITC variable which was significant at the 90% confidence interval. Adding this variable decreased the SBD total coefficient, the debt coefficient and its significance level as well as significantly decreased the adjusted coefficient of determination to 0.357. We also tried adding the ITC while removing the Non-SBD income but had a very similar result. This means that adding this variable significantly decreases the goodness of fit of the model. Also, adding the ITC variable implies that the normality of error terms hypothesis is violated. This may be caused by extreme values that would impact the errors or a correlation effect if this variable is correlated with another variable. Further investigation on this problem should be done but we can also mention that the investment tax credit (ITC) may be dependent on investment, since the total investment does determine part of the total amount of ITC available. For this reason, we do not included ITC in the final regression model.

Finally we compare the final chosen model with the same model using random effects and without effects. We can see from Table 6 that when we do not account for the differences between provinces by using random effects, only the debt coefficient really changes (increases) and all the coefficients become more significant. Note that the SBD total coefficient is now

significant at the 10% confidence interval and implies that the SBD advantage does have a significant impact on investment when we do not account for the difference in provinces. These results are normal since only the province of Quebec really differs from the other provinces because it did not have the SBD for most of the years in the analysis.

As for the model with no effects, this regression does not account for the difference in the years or provinces. In this case, we note that all the coefficients have increased and have all become more significant. This means that the variables selected do have a significant impact on investment and our panel data models do include good variables in order to test our hypothesis. However, this does definitely not tell us if important variables have been omitted from the regression.

5.3 - Robustness checks

In order to make sure that the ordinary least squares regression model well represents the data, many tests have been performed. One of the problems that is often observed with the error terms of panel data analysis is autocorrelation. Autocorrelation is created by cross-correlation in the observed residuals that can be explained by omitted relevant factors that are correlated across periods and found in the residuals. The presence of autocorrelation does not bias results but will tend to underestimate the standard errors of the coefficients. This would in fact bias the significance levels by decreasing the size of confidence intervals and increasing the significance level of every variable. For this reason it is important to test for the presence of autocorrelation using the Woolridge test for autocorrelation in panel data. The null hypothesis of this test is that there is no presence of first order autocorrelation. In our regression model, we obtain a $F(1,12) =$

0.646 and a p-value = 0.437. Hence, we cannot reject the null hypothesis and we can say that there is no presence of first order autocorrelation in the model.

Another problem that is often present in panel data regression is heteroskedasticity. Heteroskedasticity is observed when the variance of the error terms is not constant. Such problems are caused by independent variables that vary across observations. This is often the case when using financial data since firms tend to have large variations in income and other variables that are dependent on their size. Having by province observations could also cause this problem since every province may have different industry specific firms or average firms of different sizes. Heteroskedasticity does not bias the OLS estimators themselves but can bias the variance of these coefficients and hence their significance levels. In our models, we test for heteroskedasticity using the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity on a simple OLS model without panel data specification. The null hypothesis of this test states that the variance is constant. We obtain a Chi squared with 1 degree of freedom equal to 23.6 with a p-value of 0.000. In this case, the null hypothesis is rejected at the 99% confidence interval and we can say that there is presence of heteroskedasticity the model.

The presence of heteroskedasticity forces the use of a model that corrects the variances. By adding *robust* at the end of our OLS regressions we correct for heteroskedasticity by using weighted least squares to obtain robust covariance matrix estimators. This function corrects the heteroskedasticity by adding weights to the regression coefficient variances. Only the standard errors of the coefficients are adjusted and it eliminates the possible bias of our significance levels.

One of the other major problems when doing regressions is the possibility of omitting important independent variables. In this case, the estimators could become biased and the model would not be properly interpreted. To test this hypothesis, we use the Ramsey test on the same regression that the heteroskedasticity was tested. The null hypothesis of this test is that the model has no omitted variables. For our regression model, we obtain a statistic $F(3,84) = 1.79$ with a p-value = 0.156. In this case the null hypothesis cannot be rejected at the 90% confidence interval and we can say that there should not be any problems of omitted variables in the regression model. However, an endogeneity problem caused by one or more omitted variables would not necessarily be reflected in the Ramsey test. In this case, the problem would be reflected in the error terms and the regression estimators would become biased. Omitting variables in the regression could have a significant impact on our results and thus their interpretation. For example, the business cycle could be a factor in explaining part of the variation in investments and other independent variables. Although this variable cannot be quantified and may not be significant, if it should be the case that we omit an important variable from our regression, our positive estimators such as the small business advantage would necessarily be overestimated. In this case, we would have less significant estimators which would change the outlook of our results. This is why we must always look for possible variables that may influence our regression model that have not been accounted for or overlooked.

The last hypothesis that needs to be tested is the normality of the error terms. This is one of the only hypotheses that must stand in almost all types of regression models and is necessary for yielding efficient estimators when the model is well specified. Violations of this assumption could compromise the estimation of coefficients and their confidence intervals as well as other tests that make the assumption of normally distributed error terms. The law of large numbers

states that when the sample is large enough, the residuals should converge to the law of normality. In our case, since we only have 104 observations, we do not have a large enough sample that we must make sure that the error terms follow the law of normality. The Skewness / Kurtosis tests for normality will help us test this hypothesis. The null hypothesis of this test states that the residuals follow the normality law. For our regression model, we obtain a Chi squared statistic with 2 degrees of freedom of 2.04 with a p-value of 0.340. The null hypothesis is definitely not rejected at the 90% confidence interval and we can say that the residuals do follow the law of normality. A histogram of the residuals with a normality curve can also be found in Figure 2. We can visually see that the residuals do seem to follow the normality curve very well.

Hence, all these tests and statistics give us confidence in the results we are trying to show. These tests also suggest a certain level of power and reliability within the model specified.

6 – Concluding Remarks

This study has examined the combined effect of the SBD corporate tax rates and thresholds on SME investment decisions between 2001 and 2008. As tested, even though this tax policy to help small CCPCs does not have a statistically significant impact on firm investment, we have determined that for every 1% increase in after-tax profit brought upon by the SBD, an average of 0.167% is invested by the firms. However, we must not forget that even though only part of the SBD profits have been invested, the rest of the income could have been left in the company, used in future investments or used to pay off debt. In this case, we can say that at the

limit, a minimum of 0.167% of the SBD after-tax profits are used to invest in the current tax year. It may be interesting in a future study to look at the lagged effects of the variables used in this study. This would possibly show that the SBD has a greater positive effect on small CCPC investment.

We have also shown that dividend payments to shareholders have a statistically significant negative impact on firm investment and that firms will most likely undertake debt in order to finance their investments. These results are in line with what we have read in the literature. We must also note that our observations have been aggregated by province and it may be interesting to look at different groupings. Investments also vary by industry and by firm size which would be other interesting studies to look at in the future. For example, the variable for income greater than the SBD limit may become significant when controlling for size of firms.

We must remember that this tax policy does in fact only help SMEs that are profitable. Most SMEs that leave the markets may not have been able to take advantage of this SBD. Even though the effects of this policy were not statistically significant, it does have a positive impact on firm investment. All in all, we must continue to implement such policies that will help make countries prosper and this study could help as a reference tool in future studies.

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Appendix

Table 1: Federal Corporate Tax Rates⁴

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Basic rate	38								
less : provincial abatement	10								
rate after abatement	28								
plus : federal surtax	1.12								
General federal rate (before reduction)	29.12								
Less : general rate reduction	1	3	5	7	7	7	7	8.5	9
General federal rate	28.12	26.12	24.12	22.12	22.12	22.12	22.12	19.5	19
General	28								
General federal rate (before reduction)	29.12								
Less : M&P deduction	7								
M&P rate	22.12								
small business deduction threshold	\$200,000	\$200,000	\$225,000	\$250,000	\$300,000	\$300,000	\$400,000	\$500,000	\$500,000
General federal rate (before reduction)	29.12								
Less : small business deduction	16								
CCPC small business rate	13.12								
SBD	11								
active business income from threshold to \$300,000	29.12								
Less : CCPC rate reduction	7								
CCPC reduced rate	22.12								
General federal rate (before reduction)	29.12								
Additional refundable tax	6.67								
CCPC investment income rate	34.67								

⁴ Mallin, M. (2010), *Preparing Your Corporate Tax Returns, Canada and Provinces*, 30th Edition, CCH Canadian Limited.

Table 2: Federal and Provincial SBD advantage rates and limits⁵

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Federal	General Rate less SBD Rate 15.0% SBD limit \$200,000	General Rate less SBD Rate 13.0% SBD limit \$200,000	General Rate less SBD Rate 11.0% SBD limit \$225,000	General Rate less SBD Rate 9.0% SBD limit \$250,000	General Rate less SBD Rate 9.0% SBD limit \$300,000	General Rate less SBD Rate 9.0% SBD limit \$300,000	General Rate less SBD Rate 9.0% SBD limit \$400,000	General Rate less SBD Rate 8.5% SBD limit \$400,000	General Rate less SBD Rate 8.0% SBD limit \$500,000
Alberta	General Rate less SBD Rate 8.0% SBD limit \$275,000	General Rate less SBD Rate 8.5% SBD limit \$337,500	General Rate less SBD Rate 8.5% SBD limit \$387,500	General Rate less SBD Rate 8.5% SBD limit \$400,000	General Rate less SBD Rate 7.4% SBD limit \$400,000	General Rate less SBD Rate 7.0% SBD limit \$400,000	General Rate less SBD Rate 7.0% SBD limit \$422,500	General Rate less SBD Rate 7.0% SBD limit \$452,500	General Rate less SBD Rate 7.0% SBD limit \$490,000
BC	General Rate less SBD Rate 11.5% SBD limit \$200,000	General Rate less SBD Rate 9.0% SBD limit \$225,000	General Rate less SBD Rate 9.0% SBD limit \$300,000	General Rate less SBD Rate 9.0% SBD limit \$300,000	General Rate less SBD Rate 8.5% SBD limit \$400,000	General Rate less SBD Rate 7.5% SBD limit \$400,000	General Rate less SBD Rate 7.5% SBD limit \$400,000	General Rate less SBD Rate 7.1% SBD limit \$400,000	General Rate less SBD Rate 8.5% SBD limit \$400,000
Manitoba	General Rate less SBD Rate 11.0% SBD limit \$200,000	General Rate less SBD Rate 11.5% SBD limit \$300,000	General Rate less SBD Rate 11.0% SBD limit \$320,000	General Rate less SBD Rate 10.5% SBD limit \$360,000	General Rate less SBD Rate 10.0% SBD limit \$400,000	General Rate less SBD Rate 10.0% SBD limit \$400,000	General Rate less SBD Rate 11.0% SBD limit \$400,000	General Rate less SBD Rate 11.5% SBD limit \$400,000	General Rate less SBD Rate 11.5% SBD limit \$400,000
New Brunswick	General Rate less SBD Rate 12.0% SBD limit \$200,000	General Rate less SBD Rate 11.5% SBD limit \$250,000	General Rate less SBD Rate 10.0% SBD limit \$400,000	General Rate less SBD Rate 10.5% SBD limit \$412,500	General Rate less SBD Rate 10.8% SBD limit \$457,500	General Rate less SBD Rate 11.3% SBD limit \$462,500	General Rate less SBD Rate 8.0% SBD limit \$400,000	General Rate less SBD Rate 8.0% SBD limit \$400,000	General Rate less SBD Rate 7.5% SBD limit \$500,000
Newfoundland & Labrador	General Rate less SBD Rate 9.0% SBD limit \$200,000	General Rate less SBD Rate 9.0% SBD limit \$200,000	General Rate less SBD Rate 9.0% SBD limit \$225,000	General Rate less SBD Rate 9.0% SBD limit \$250,000	General Rate less SBD Rate 9.0% SBD limit \$300,000	General Rate less SBD Rate 9.0% SBD limit \$300,000	General Rate less SBD Rate 9.0% SBD limit \$400,000	General Rate less SBD Rate 9.0% SBD limit \$400,000	General Rate less SBD Rate 9.0% SBD limit \$500,000
Nova Scotia	General Rate less SBD Rate 11.0% SBD limit \$200,000	General Rate less SBD Rate 11.0% SBD limit \$200,000	General Rate less SBD Rate 11.0% SBD limit \$225,000	General Rate less SBD Rate 11.0% SBD limit \$250,000	General Rate less SBD Rate 11.0% SBD limit \$337,500	General Rate less SBD Rate 11.0% SBD limit \$387,500	General Rate less SBD Rate 11.0% SBD limit \$400,000	General Rate less SBD Rate 11.0% SBD limit \$400,000	General Rate less SBD Rate 11.0% SBD limit \$400,000
Northwest Territories	General Rate less SBD Rate 9.0% SBD limit \$200,000	General Rate less SBD Rate 8.5% SBD limit \$200,000	General Rate less SBD Rate 8.0% SBD limit \$225,000	General Rate less SBD Rate 10.0% SBD limit \$250,000	General Rate less SBD Rate 10.0% SBD limit \$300,000	General Rate less SBD Rate 8.8% SBD limit \$300,000	General Rate less SBD Rate 2.9% SBD limit \$400,000	General Rate less SBD Rate 2.9% SBD limit \$400,000	General Rate less SBD Rate 2.9% SBD limit \$500,000
Yukon	General Rate less SBD Rate 9.0% SBD limit \$200,000	General Rate less SBD Rate 8.0% SBD limit \$200,000	General Rate less SBD Rate 8.0% SBD limit \$225,000	General Rate less SBD Rate 8.0% SBD limit \$250,000	General Rate less SBD Rate 8.0% SBD limit \$300,000	General Rate less SBD Rate 8.0% SBD limit \$300,000	General Rate less SBD Rate 8.0% SBD limit \$400,000	General Rate less SBD Rate 8.0% SBD limit \$400,000	General Rate less SBD Rate 8.0% SBD limit \$500,000
Ontario	General Rate less SBD Rate 7.5% SBD limit \$250,000	General Rate less SBD Rate 6.5% SBD limit \$280,000	General Rate less SBD Rate 7.0% SBD limit \$320,000	General Rate less SBD Rate 8.5% SBD limit \$400,000	General Rate less SBD Rate 8.5% SBD limit \$400,000	General Rate less SBD Rate 8.5% SBD limit \$400,000	General Rate less SBD Rate 8.5% SBD limit \$400,000	General Rate less SBD Rate 8.5% SBD limit \$400,000	General Rate less SBD Rate 8.5% SBD limit \$400,000
Prince Edward Island	General Rate less SBD Rate 8.5% SBD limit \$200,000	General Rate less SBD Rate 8.5% SBD limit \$200,000	General Rate less SBD Rate 8.5% SBD limit \$225,000	General Rate less SBD Rate 8.5% SBD limit \$250,000	General Rate less SBD Rate 9.5% SBD limit \$300,000	General Rate less SBD Rate 10.5% SBD limit \$300,000	General Rate less SBD Rate 11.4% SBD limit \$400,000	General Rate less SBD Rate 12.5% SBD limit \$400,000	General Rate less SBD Rate 13.6% SBD limit \$500,000
Québec	General Rate less SBD Rate 0.0% SBD limit \$ -	General Rate less SBD Rate 0.0% SBD limit \$ -	General Rate less SBD Rate 0.0% SBD limit \$ -	General Rate less SBD Rate 0.0% SBD limit \$ -	General Rate less SBD Rate 0.0% SBD limit \$ -	General Rate less SBD Rate 1.8% SBD limit \$400,000	General Rate less SBD Rate 1.9% SBD limit \$400,000	General Rate less SBD Rate 3.4% SBD limit \$400,000	General Rate less SBD Rate 3.9% SBD limit \$479,725
Saskatchewan	General Rate less SBD Rate 10.0% SBD limit \$200,000	General Rate less SBD Rate 11.0% SBD limit \$300,000	General Rate less SBD Rate 11.0% SBD limit \$300,000	General Rate less SBD Rate 11.5% SBD limit \$300,000	General Rate less SBD Rate 12.0% SBD limit \$300,000	General Rate less SBD Rate 10.5% SBD limit \$350,000	General Rate less SBD Rate 9.0% SBD limit \$425,000	General Rate less SBD Rate 8.0% SBD limit \$475,000	General Rate less SBD Rate 7.5% SBD limit \$500,000
Yukon	General Rate less SBD Rate 9.0% SBD limit \$200,000	General Rate less SBD Rate 9.0% SBD limit \$200,000	General Rate less SBD Rate 9.0% SBD limit \$225,000	General Rate less SBD Rate 9.0% SBD limit \$250,000	General Rate less SBD Rate 11.0% SBD limit \$300,000	General Rate less SBD Rate 11.0% SBD limit \$300,000	General Rate less SBD Rate 11.0% SBD limit \$400,000	General Rate less SBD Rate 11.0% SBD limit \$400,000	General Rate less SBD Rate 11.0% SBD limit \$400,000

Amounts are prorated to fit federal calendar years

⁵ Table was built with data from Mallin, M. (2010), *Preparing Your Corporate Tax Returns*, Canada and Provinces, 30th Edition, CCH Canadian Limited.

Table 3: Number of firms before aggregation per year

Year	Count of firms
2001	245,254
2002	255,118
2003	262,707
2004	274,747
2005	290,051
2006	308,536
2007	329,023
2008	342,758

Table 4: Province by Year Panel Descriptive Statistics (in dollars)

Variable		Mean	Std. Dev.	Min	Max	Observations
investment	overall	45411.49	17230.85	24944.63	102583	N = 104
	between		16055.26	28884.18	79328.88	n = 13
	within		7526.55	12983.61	68665.61	T = 8
SBAdvantage	overall	6693.38	1360.46	4321.80	11201.86	N = 104
	between		1018.80	5066.39	8836.28	n = 13
	within		939.91	4055.84	9058.95	T = 8
sbd_total	overall	12432.89	3018.97	4321.80	21746.79	N = 104
	between		2631.83	5554.63	15888.18	n = 13
	within		1630.46	8273.66	18291.5	T = 8
div_paid	overall	15022.41	6448.63	3237.33	32438.94	N = 104
	between		4097.53	6650.6	22766.24	n = 13
	within		5092.75	5499.79	30118.48	T = 8
debt	overall	182431.6	74042.78	101678.6	483622.9	N = 104
	between		71111.04	107439.4	348431.1	n = 13
	within		27734.78	96658.89	384276.4	T = 8
non_sbd_inc	overall	6535.4	5240.33	2021.05	35316.62	N = 104
	between		4019.05	2889.35	18776.92	n = 13
	within		3522.24	-4945.26	23075.1	T = 8
ITC	overall	630.13	548.38	0	2121	N = 104
	between		551.28	0	1834.62	n = 13
	within		132.14	307.26	916.51	T = 8
adj_tax_inc	overall	72327.24	18553.03	44326	143670	N = 104
	between		12364.67	56508.75	96831	n = 13
	within		14202.81	48633.24	120944.9	T = 8
cca_claimed	overall	24431.24	9508.24	15575.49	61084.07	N = 104
	between		9541.52	15838.99	48793.88	n = 13
	within		2356.51	15566.87	36721.44	T = 8
assets	overall	597359.6	235621.5	356742.5	1535608	N = 104
	between		235645.8	388023.6	1243266	n = 13
	within		61338	378815.3	889702.1	T = 8

Table 5: Correlation between regression coefficients

	logADJ~c	logDiv~d	logDebt	logCCA	logAssets	logNon~c	logSBAdv	logSBD~l	logITC
logADJtaxInc	1.0000								
logDiv_Paid	0.5763	1.0000							
logDebt	0.5063	-0.1582	1.0000						
logCCA	0.5215	-0.2133	0.9213	1.0000					
logAssets	0.5755	-0.1462	0.9400	0.9513	1.0000				
logNonSBDinc	0.6092	0.2935	0.2266	0.2980	0.3112	1.0000			
logSBAdv	0.5240	0.1037	0.5476	0.5567	0.5406	0.1529	1.0000		
logSBDtotal	0.5698	0.1783	0.5547	0.5044	0.5186	-0.0478	0.7300	1.0000	
logITC	-0.3558	0.1105	-0.5226	-0.6149	-0.5772	-0.1207	-0.4364	-0.3284	1.0000

Table 6: Regression outputs for the Combined Federal and Provincial Small Business Advantage Model

Estimation Results from OLS regressions on Investment							
Variable	Regression Effects						
	Fixed	Fixed	Fixed	Fixed	Fixed with weighted least squares	Random	No fixed or random effects
logSBD_total	0.153 (0.118)	0.116 (0.114)	0.131 (0.113)	0.167 (0.117)	0.167 (0.127)	0.175* (0.102)	0.198** (0.081)
logDiv_Paid	-0.058 (0.043)	-0.082* (0.042)	-0.138** (0.053)	-0.128** (0.055)	-0.128** (0.049)	-0.136*** (0.051)	-0.151*** (0.045)
logDebt	0.486*** (0.153)	0.415*** (0.149)	0.364** (0.151)	0.417*** (0.155)	0.417** (0.189)	0.571*** (0.107)	0.634*** (0.070)
logNonSBDinc			0.072 (0.043)	0.088* (0.045)	0.088 (0.063)	0.101** (0.040)	0.143*** (0.034)
logITC		0.048*** (0.016)	0.045*** (0.016)				
Adjusted R-sq	0.690	0.357	0.431	0.741	0.741	0.742	0.734

Notes: All models include an intercept which is not presented. Standard errors are in parentheses.

***, **, * indicate a significance level of 1%, 5% and 10% respectively.

Figure 1: SBD claimed per year at the Federal level (SBAdvantage) and at the combined Federal and Provincial level (SBD_total)

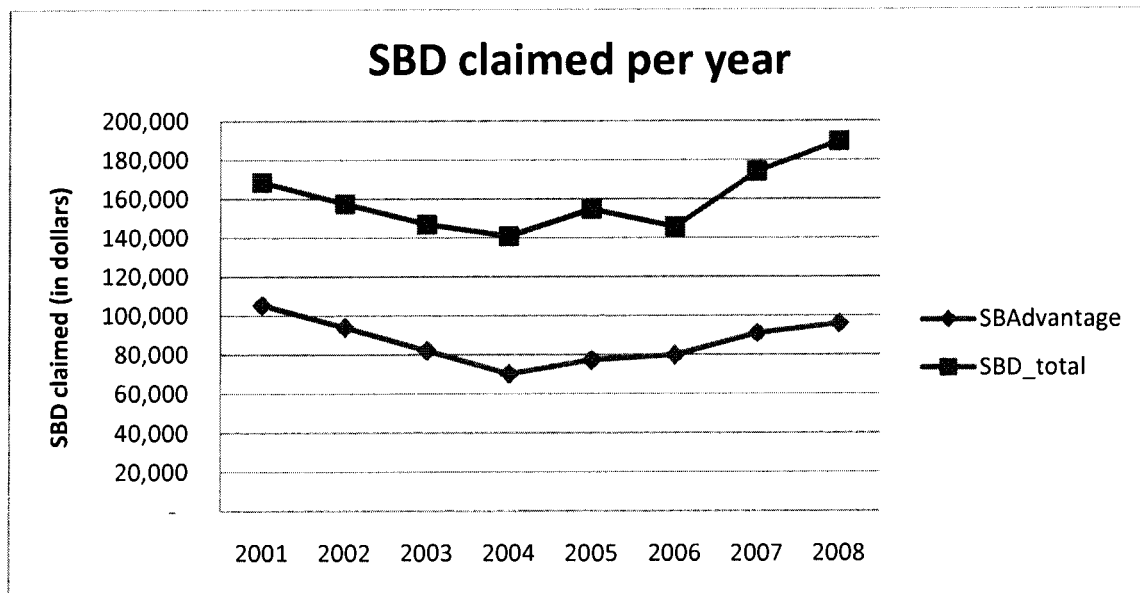


Figure 2: Histogram of error distribution

