

STOCK PRICE REACTIONS TO THE CANADIAN LIFETIME CAPITAL GAINS EXEMPTION

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ABSTRACT

This study examines abnormal stock return around the announcement of the Lifetime Capital Gains Exemption (LCGE) in the Canadian federal tax system. The revised code, adopted May 23, 1985 provided individual taxpayers with a cumulative tax exemption for capital gains, up to a lifetime limit of \$500,000. The empirical result, using TSX daily stock return data, indicate that around the announcement, especially before the announcement, abnormal stock returns are negatively associated with the interaction of dividend yields and individual shareholdings. This finding suggests that the stock market anticipated the capital gains tax change. The level of individual shareholding, which proxies for whether the marginal shareholders are individual shareholders are taken into account because the LCGE was only applied to individual shareholders.

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KEYWORDS: lifetime capital gains exemption, abnormal return, individual shareholding.

INTRODUCTION AND LITERATURE REVIEW

There has been a great deal of financial, economic, and accounting literature that analyses whether or not personal tax changes on dividends or capital gains affect stock prices (Akindayomi and Warsame 2007, Ayers et al. 2006, 2002, Cook 2006, Lin and Zeng 2005, Blouin et al. 2003, Bell and Jenkinson 2002, Lang and Shackelford 2000, McKenzie and Thompson 1995, Jang 1994, Amoako-Adu et al. 1992, Bolster and Janjigian 1991, among many others). This study extends this literature by examining the stock price reaction around the announcement of the lifetime capital gains exemption (LCGE) in Canada on May 23, 1985. It is motivated by the following considerations.

First, the increases/decreases in capital gains tax rates over the past twenty years were applied to all taxpayers in Canada. When changes in capital gains tax rates are applied equally to individuals and other entities, such as institutions or corporations, the status of marginal shareholders is irrelevant and there is no need to separate individual shareholders from institutional or corporate shareholders. This study considers the tax status of the marginal shareholders because the exemption was only applicable to individuals in 1985.

Second, the tax treatment of capital gains in Canada is quite different from its treatment in the U.S. In Canada, taxable capital gains are subject to the same tax rates as other regular income. However, that portion of capital gains that is to be included into income and taxed, i.e., taxable capital gains, has changed over time; currently one-half of capital gains are included into income and are taxed. Hence, in Canada, changes in capital gains taxes, typically result in a change in the tax base of capital gains. In the U.S., capital gains are not only subject to a different tax rate from other regular income (such as salary income and interest income), but capital gains realized from long-term investments are taxed at a different rate than those capital gains realized from short-term investments. As such, in the U.S., changes in capital gains tax typically result in a change of the capital gains tax rate; for example, the Taxpayer Relief Act of 1997 reduced the capital gains tax rate from 28% to 20%. While the reduction in capital gains tax rate is interesting, this study seeks to investigate if shareholders react to a reduction in the tax base of capital gains.

Third, Ayer et al. (2002) argue that a potential weakness of long-window return studies is that the results are

susceptible to confounding factors such as risk or earning persistence. Short-window studies around tax changes thereby minimize the effects of non-tax factors. In the U.S., the announcement day and the effective day of a tax change are different because the announced tax change can be amended or even vetoed before it becomes law. Existing studies on market reaction to changes in capital gains tax usually examine reactions around the passage of a tax change from the announcement day to the effective day. It may last one or more months (e.g., Ayers et al. 2006, and Lang and Shackelford 2000). It is generally difficult to isolate tax effects from other effects if the event window is long. On the other hand, in Canada, once the federal budget is announced, the tax changes take effect immediately, except in those rare cases when a minority government has its budget defeated in the House of Commons. Therefore, in Canada it is easier to narrow the event window around the announcement to mitigate non-tax effects.

The remainder of this paper proceeds thus. First, it describes the LCGE and other relevant tax rules. It also reviews the literature relevant to this study. In section three, the methodology and hypothesis are developed. The regression model, data collection and variable measurement are outlined. In section four, the test results are presented. Finally, the conclusion is provided in section five.

BACKGROUND AND LITERATURE

There are two ways by which the shareholders receive and are taxed on the returns to stocks: dividends and capital gains (including those realized from share repurchases). The different effective tax rates on dividends and capital gains not only affect shareholders' trading behavior, but also stock prices. Tax rules on capital gains have changed over time in Canada. There was no tax for capital gains before 1972. Since 1972, capital gains have been taxed on realization. From 1972 to 1987, one-half of capital gains were taxable, and one-half of capital losses were deductible against taxable capital gains. In 1988 and 1989, the partial rate was increased to two-thirds. From 1989 to February 2000, the partial rate became three-quarters. From March 2000 to October 18, 2000, the partial rate was reduced to two-third. Finally, this rate was reduced to one-half.

To encourage risk-taking and investment in businesses, the federal government introduced a \$500,000 cumulative LCGE for all individual taxpayers in Canada in the May 1985 budget. The exemption was applied to the gains from all capital property of individuals that were realized after 1984. The exemption was phased in over six years: the exemption had a cumulative limit of \$20,000 of capital gains in 1985, rising to \$50,000 of capital gains in 1986, \$100,000 in 1987, \$200,000 in 1988, \$300,000 in 1989 and \$500,000 in 1990 and subsequent taxation years (Budget papers, 1985).

In 1987, the exemption was extended to corporations. In 1989, the exemption was reduced to \$100,000. Until the 1992 federal budget, the exemption was unrestricted as to type of capital gains. The 1992 federal budget imposed a restriction on the capital gains from real properties, i.e., land and buildings. The 1994 federal budget eliminated the general capital gains exemption, but the exemption of capital gains from small business and farming remained (Beam, Laiken and Barnett 2009).

During the time period around the announcement of the LCGE, the partial rate did not change. In addition, the tax rules on dividends received by the individual taxpayers did not change. In summary, the effective tax rate on capital gains was substantially reduced, relative to dividends, upon the introduction of the LCGE.

The existing studies on the effect of capital gains taxation on stock price are not conclusive. For example, capital gains tax capitalization predicts that stock prices will increase when capital gains tax is reduced (Lang and Shackelford 2000, Akindayomi and Warsame 2007, etc). Klein (1999) and Cook (2006), on the other hand, show that by mitigating the lock-in effect, a reduction on capital gains tax will encourage current shareholders to sell the stocks and decrease stock prices. While Miller and Scholes (1978) argue that capital gains tax is not relevant since the marginal investors could be tax-exempt investors and thus not subject to the

changes of capital gains tax. McKenzie and Thompson (1995) find no relationship between stock prices and dividend yields on the announcement of capital gains tax change. Chen et al. (1990) find no effect of capital gains on stock before-tax returns.

One event study on the share price reaction to the 1985 LCGE examines the relationship between stock returns/trading volume and accrued capital gains (Lin and Zeng 2005). Two other studies examine the relationship between stock prices and dividend yields, a proxy for the value-relevance of capital gains tax (McKenzie and Thompson, 1995 and Amoako-Adu et al. 1992) are inconclusive. McKenzie and Thompson (1995) find no relationship between stock prices and dividend yields, while Amoako-Adu et al. (1992) find a weak relationship. This study considers the tax status of the marginal shareholders. It argues that the stock price reaction around the announcement of the LCGE depends not only on the dividend yield, but also depends on whether the marginal shareholders are individuals or non-individuals (e.g., institutions or corporations). This is because the exemption was only applicable to individual shareholders in 1985. After incorporating the tax status of the marginal investors, this study finds a negative relationship between abnormal stock returns and dividend yields around the announcement of the LCGE.

Shackelford (2000) specified seven conditions that must hold for a change in capital gains tax to affect stock price. Among them, one condition is that the marginal investor must be individual or a flow-through entity such as partnership that passes capital gains to individuals, who is subject to tax change. However, only a few existing studies that examine the stock market reactions to shareholders' tax changes incorporate marginal investor's tax status (for example, Lin and Zeng 2005, Dhaliwal et al. 2003, Blouin et al. 2003). However, these studies focus on the shareholders' dividend taxes or accrued capital gains. Ayers et al. (2006) examine the individual shareholders' reactions to a reduction in capital gains tax rate in 1997. However, they focus on the trading around the reduction.

METHODOLOGY, DATA COLLECTION AND VARIABLES

Methodology

When a firm generates cash flow from internal operations, it could distribute this cash flow to shareholders by paying dividends. If the firm does not distribute all cash generated from internal operation, the potential for shareholder capital gains will increase. Thus, a reduction in shareholders' capital gains tax leads to an increase in stock price, to the extent that dividends are not paid. Moreover, the rise of the price increases with the cash retained (i.e., decreases with the cash distributed as dividends). This indicates that the higher the dividend yield, the lower the price increase in response to the reduction in capital gains tax.

A simple model based on Lang and Shackelford (2000) could be used to explain this argument. In their model, current stock price P_0 can be expressed as the present value of future after-tax dividends and capital gains, which is simplified as

$$P_0 = \frac{D_1(1-\tau^d)}{r\left[\tau^c + \frac{D_1}{F}(1-\tau^c)\right]} \quad (1)$$

$$\frac{\partial P_0}{\partial \tau^c} = -P_0 \left[\frac{F - D_1}{(F - D_1)\tau^c + D_1} \right] \quad (2)$$

Where F is free cash flow. D is dividend distribution. τ^d and τ^c are taxes on dividends and capital gains.

If $F > D_1$, the derivative is negative, which implies that a reduction in marginal shareholder's capital gains tax increases stock prices. Furthermore,

$$\frac{\partial \left[\frac{F - D_1}{(F - D_1)\tau^c + D_1} \right]}{\partial D_1} = -\frac{F}{[(F - D_1)\tau^c + D_1]^2} < 0 \quad (3)$$

Thus stock prices with a high dividend yield reacts less positively to the reduction in the capital gains tax, relative to a low dividend yield stock. In other words, as argued by Lang and Shackelford (2000), investors generally place less (more) weight on capita gains tax change when pricing shares with higher (lower) dividend yield. If Stock price reflects capital gains tax, the announcement of capital gains tax reduction should be negatively associated with dividends yields.

However, stock prices might not be affected by the exemption if the marginal investors are institutional and corporate shareholders. There are two reasons. First, the exemption was not applicable to corporations and institutions in 1985. Hence, the capital gains tax for corporations and institutions did not change during the time period used in this event study. Second, some institutional shareholders are tax-exempt (e.g., pension funds, universities, charities, etc.), and thus were not affected by the exemption. In summary, this study argues that prices of the stocks with high dividend yields and individual marginal investors react less positively to the LCGE. The hypothesis to be tested is therefore described as follows:

Hypothesis: Abnormal stock return is negatively associated with dividend yield \times individual marginal investor around the announcement of the LCGE.

For this event study, the announcement date is May 23, 1985. The time period to be tested is May 1, 1985 to June 13, 1985. There are 15 trading days before and after the announcement. This window does not coincide with other important changes, e.g., earning disclosure, declaring of dividend payout, etc. To test if the stock prices react to the LCGE, the abnormal return for each stock is calculated.

Stock return at time t (R_t) is defined as follows:

$$R_t = \frac{P_t + d_t - P_{t-1}}{P_{t-1}} \quad (4)$$

Where d_t is cash dividend paid at time t , and P_t is the stock price at that time.

The coefficients of the market model (Capital Asset Pricing Model) are estimated for each stock for the period of one year from May 1, 1984 to April 30, 1985 (pre-announcement one-year period). These coefficients are used to calculate the abnormal return. The market model is as follows:

$$R_t = \alpha_0 + \alpha_1 R_{m,t} + \varepsilon_t \quad (5)$$

Where $R_{m,t}$ is the market average return at time t . The TSX 300 index is used as a proxy for the market return. The abnormal return is defined as:

$$R_t^a = R_t - (\hat{\alpha}_0 + \hat{\alpha}_1 R_{m,t}) \quad (6)$$

Where $\hat{\alpha}_0$ and $\hat{\alpha}_1$ are the coefficients estimated from the market model (5). The abnormal return for each stock can be calculated using the estimated coefficients for each day of the testing time period.

To test the hypothesis, the abnormal stock return is regressed on dividend yields and other control variables. The control variables are included to control for other differences across firms. In particular, the regression model includes the interaction between dividend yields and an indicator for marginal individual shareholders. Within the testing period from May 1, 1985 to June 13, 1985, stocks with high dividend yields may not react if the marginal shareholders are non-individual shareholders. The hypothesis predicts that the coefficient on dividend yields \times marginal individual shareholder is negative. The regression model is as follows:

$$R_{it}^a = \beta_0 + \beta_1 DIV_i \times IND_i + \beta_2 DIV_i + \beta_j X_{ji} + \varepsilon_t \quad (7)$$

Where:

R_{it}^a : abnormal return for firm i on date t.

DIV_i : dividend yield for firm i at the 1984 fiscal year end.

IND_i : individual shareholding for firm i, an indicator variable taking on a value of 1 if the major shareholder(s) is individual shareholder, and 0 if the major shareholder is corporate or institutional shareholder, at the 1984 fiscal year end.

X_{ji} : vector of other explanatory variables, which might be related to stock abnormal return.

The hypothesis predicts $\beta_1 < 0$ around the announcement of the LCGE.

Data Collection and Variables

Data on the daily stock return and daily TSX 300 index are collected from the “Canadian Financial Market Research Center Summary Information Database”. The data of the individual shareholding and other financial data are collected from the “Canadian Financial Post Card”. Moody’s Investor Service – Common Stock, which provides the number of institutional shareholders and the number of shares held by the institutions is also used. The sample consists of all firms that meet the following criteria: (1) availability of the daily stock return for the period from May 1, 1984 to June 13, 1985 and availability of daily stock return for all trading days from May 23, 1985 to May 29, 1985 (i.e., 5 trading days); (2) availability of financial reports at the end of the 1984 fiscal year; and (3) not in the financial, insurance, or real estate industries.

There are 163 stocks that meet the above three data collection criteria. For the 163 stocks, there are 32 stocks that do not have significant α_1 (some even have negative α_1) from market model (5). These stocks are dropped because the market model can not provide a reasonable calculation of abnormal returns for these stocks. Finally, there are 131 stocks in the sample.

The variables used to test the propositions are measured as follows. Dividend yields are measured as dividends per share (the total dividends paid on common shares, divided by the number of common shares outstanding), divided by share price at the 1984 fiscal year end.

Individual shareholding is an indicator variable used to specify if the marginal shareholder is an individual shareholder. Since it is difficult, if not impossible, to observe the marginal shareholder directly, this study uses the level of individual/non-individual (such as institutional or corporate shareholding) ownership as a proxy for whether the marginal shareholder is an individual or non-individual, following Ayer et al (2002), Dhaliwal et al (2003), Cook (2006), etc.

Sias and Starks (1997) argue that shareholding is generally associated with price-setting traders. They examine a transaction database to investigate the relative importance of institutional versus individual investors in each firm's volume of price-setting trades. They find that the marginal price-setting investor is more likely to be corporate or institutional (individual) investor for a firm with a higher (lower) level of corporate or institutional ownership. In other words, the level of corporate or institutional (individual) ownership could be used as a proxy for the likelihood that the marginal shareholder is a corporation or institution (individual).

Therefore, this study uses the shareholding (i.e., ownership) as a proxy for indicating the marginal shareholder tax status. Since the "Canadian Financial Post Card" discloses the major shareholder(s), and Moody's investor Service – Common stock provides the number of share held by institutions, this study combines these two databases and assume that the marginal investors are institutional shareholders if the major shareholder(s) is institutional shareholder or institutions hold majority shares. Otherwise, it is assumed that the marginal investors are individual shareholders. Furthermore, this study paper follows Lang and Shackelford (2000) and adds three control variables to capture other differences across firms which might affect the abnormal returns. The control variables are: (1) profitability (*PROF*), calculated by the net income divided by total assets, at the 1984 fiscal year end. (2) firm size (*SIZE*), calculated as the log of the firm market value. Market value is calculated as stock price multiplied by the number of shares outstanding at the 1984 fiscal year end. (3) leverage (*LEV*), calculated as the total of short-term and long-term debt, divided by total assets at the 1984 fiscal year end.

Return on assets is introduced to control for differences in profitability across firms. Firm size is induced to ensure that the results are not driven by differences in firm size. Debt/asset ratio is induced to control for differences in leverage across firms. In addition, this study adds industry dummy variables (there are five industries, mining, oil & gas, manufacturing, communications & utilities, and wholesale & retail trade) to control for differences across industries which might affect the abnormal return.

RESULTS

Table 1 presents the descriptive statistics of the independent variables. It shows the mean, median, standard deviation, maximum and minimum value of the independent variables. For example, the mean value of dividend yield is 0.0278 and the median value is 0.0249. There are stocks that do not pay dividend since the minimum value of dividend yield is 0. The mean value of the interaction between dividend yield and individual shareholding is 0.0075 and the median value is 0, i.e., either the shareholding is a non-individual shareholding or zero dividends paid, or both.

Table 1: Descriptive Statistics of Independent Variables

	Mean	1 st Q	Median	3 rd Q	Std. Div.	Max.	Min.
<i>DIV X IND</i>	0.0075	0	0	0.0095	0.0145	0.0585	0
<i>DIV</i>	0.0278	0.0109	0.0249	0.0406	0.0225	0.1077	0
<i>PROF</i>	0.0493	0.0260	0.0520	0.0782	0.0746	0.2223	-0.5919
<i>LEV</i>	0.2661	0.1301	0.2586	0.3866	0.1656	0.7581	0
<i>SIZE</i>	2.419	2.024	2.406	0.8637	0.6443	3.919	0.9858
<i>IND</i>	0.3664	0	0	1	0.4837	1	0

Table 1 entries include the mean, median, standard deviation, maximum and minimum values of the independent variables.

Table 2 presents the correlations between the independent variables. Only one correlation (the correlation between profitability and leverage) is above 0.3, which suggests that multi-collinearity is not a severe problem.

Table 2: Correlation of Independent Variables

Variables	<i>DIV X IND</i>	<i>DIV</i>	<i>PROF</i>	<i>LEV</i>	<i>SIZE</i>
<i>DIV X IND</i>	1				
<i>DIV</i>	0.1717	1			
<i>PROF</i>	-0.0628	0.0976	1		
<i>LEV</i>	0.1424	0.1714	-0.4319	1	
<i>SIZE</i>	-0.1579	0.2098	0.1033	0.0342	1

Table 2 presents the correlations between the independent variables.

Table 3 presents the results from regressing model (7) for each date from May 1, 1985 to June 13, 1985 to compare the results with those by Amoako-Adu et al. (1992). Table 4 presents the results from regressing model (7) for the time period of May 10 – 21 and May 27-June 4, 1985. The dependent variable is the average abnormal return. Table 3 shows that before the announcement of the LCGE (May 7, May 10, and May 21, 1985, i.e., day -11, -8, and -2), the abnormal return of the stocks is negatively related to dividend yields \times individual shareholding, and is significant at the 5% level, which supports the hypothesis. This is also consistent with the argument by Amoako-Adu et al. (1992) that the stock market anticipated the introduction of the LCGE because information about the federal budget might have leaked to the market before the announcement.

Actually there were quite a few issues about the budget, especially the tax changes just before the budget announcement. For example, a discussion of tax changes, including the capital gains tax cut, appeared in the *Globe and Mail* on May 18, 1985. Nevertheless, Amoako-Adu et al. (1992) found the significantly negative association between the abnormal return and dividend yields happened only on one day - May 8, 1985 (i.e., day -10). By incorporating the variable for the tax status of the marginal investors and controlling for other effects, this study finds the significantly negative association on three days before the announcement, and at a time closer to the announcement.

Furthermore, Table 3 shows that, after the budget announcement (May 26 and June 9, 1985, i.e., day +2 and +9), the abnormal return of the stock is negatively related to dividend yields \times individual shareholding, and is significant at the 5% and 1% level. This indicates that the stock market also reacted after the announcement. However, Table 3 also shows that, on May 5 (i.e., day -13), the abnormal return of the stock is positively related to dividend yield \times individual marginal investor, which is against the hypothesis. In summary, the results from Table 3 only provide preliminary support for the hypothesis to the extent that the abnormal return of the stock is negatively associated with dividend yield \times individual marginal investor on five days around the announcement of the LCGE.

The coefficient on profitability is positive and significant on one day (day -13)). This is reasonable because high earning usually leads to high stock price. On all other days, profitability is not significant. In an alternative test, this study calculates the average abnormal return for the period from May 10 to May 21, 1985 (i.e., day -8 to day -2) as the dependent variable. The average abnormal return is calculated as $\bar{R}_{it}^a = \frac{1}{7} \sum_{t=-8}^{-2} R_{it}^a$.

The results are shown in table 4, panel A. It shows that the average abnormal return is negatively and significantly related to dividend yield \times individual shareholding, which supports the hypothesis.

Table 3: Results from Model (7) for Each Day from May 1-June 13, 1985

Event Day	IND	DIV X IND	LEV	PROF	SIZE	DIV
t-15	0.0235*	0.0397	-0.0225*	-0.046	-0.0034	-0.0771
t-14	-0.0103	-0.1108	0.0083	0.0221	0.0014	-0.0578
t-13	-0.0185*	0.3231**	0.032**	0.0856***	-0.0005	0.0452
t-12	0.0138	-0.0131	-0.01	-0.0441	0.0005	0.1001
t-11	0.0044	-0.3311**	-0.018	-0.0013	0.0012	-0.0334
t-10	0.0156	0.2434	0.0063	-0.0121	-0.0024	-0.1098
t-9	0.0025	0.1122	0.0112	-0.0346	0.0017	-0.0868
t-8	-0.0072	-0.3971**	0.0077	0.039	0.0019	-0.0789
t-7	-0.006	0.1742	-0.0044	-0.0593	0.0018	0.0613
t-6	-0.0169	-0.0267	0.0108	-0.0189	0.0021	0.0093
t-5	-0.0276**	-0.2248	0.0123	-0.0165	-0.004	0.1203
t-4	-0.0066	0.1293	0.0056	0.0069	0.0007	0.0502
t-3	-0.0176	-0.0568	0.01	0.0383	-0.0003	0.0174
t-2	-0.0084	-0.2929**	-0.0056	0.0319	0.001	0.0256
t-1	0.0032	0.2336	0.0224	-0.033	-0.004	0.1252
t-0	-0.0219**	-0.1129	0.0174	0.0225	0.0062**	0.0231
t+1	-0.0048	-0.1177	0.0022	0.0164	0.0017	-0.1429
t+2	-0.0093	-0.3494**	0.0014	0.0075	-0.0027	0.0797
t+3	-0.0017	0.0112	0.0153	0.0347	-0.0006	0.0422
t+4	0.0189	-0.0251	-0.0084	-0.0336	-0.0051	0.0221
t+5	0.01	-0.0829	0.0122	0.0198	-0.0048	0.0457
t+6	-0.0104	0.0322	0.0059	-0.0051	0.0016	-0.1135
t+7	-0.0028	-0.1127	0.0129	0.0426	-0.0012	-0.0357
t+8	-0.0037	-0.0796	-0.0049	0.0061	-0.0004	0.0373
t+9	-0.015	-0.3767***	0.0213	-0.0039	0.0002	0.0785
t+10	-0.0012	-0.1048	-0.0051	-0.0232	-0.0013	0.1804
t+11	0.0045	0.1036	0.0027	0.013	-0.0031	-0.1073
t+12	-0.0114	0.018	0.0083	0.0163	0.0042	0.0362
t+13	0.0084	-0.0318	0.0123	-0.0116	-0.0013	-0.1872**
t+14	-0.0023	0.0535	0.0222**	-0.0121	-0.002	0.0545
t+15	-0.0024	-0.1161	-0.0078	-0.0005	0.0016	-0.0956

Table 3 shows the regression results from model (7). ***, ** and * indicate significance at the 1, 5, and 10 percent levels respectively.

The average abnormal return for the period from May 27 to June 4, 1985 (i.e., day +2 to day +8) is also calculated similarly. The result is presented in Table 4, panel B. It shows that the coefficient on the interaction between the dividend yield and individual shareholding is negative and significant at mere 0.10 levels. In summary, Table 4 generally provides supports for the hypothesis to the extent that the average abnormal return of the stock is negatively associated with dividend yield \times individual shareholding around the announcement of the LCGE.

If we ignore the tax status of the marginal investors (i.e., dropping the variable of the interaction between dividend yield and individual shareholding from regression model (7), it is found that the coefficient on dividend yield is not significant. This finding is consistent with McKenzie and Thompson (1995). They ignore the marginal shareholders' tax status and find no significant result. However, it is important to specify whether the marginal investors are individuals or non-individuals. Since non-individuals are not affected by the LCGE, we do not expect a significant stock reaction to the introduction of the LCGE if the marginal investors of the stocks are not individual investors.

To test for multi-collinearity further, condition indices of the independent variables are calculated (Belsley, et al. 1980). The largest condition index is only 11.49, which is much smaller than 30. This implies that multi-collinearity is not a severe problem. White's test for heteroskedasticity is applied, and none is detected. This suggests that the mean squared error term in the regression model is constant across observations. Under a sensitivity test, we only focus on the dividend-paying firms. There are 23 firms (17.7% of the observations) that did not pay dividends in 1984, and were therefore deleted. The results, which are not

presented in this paper, show that the conclusion from Table 4 does not change qualitatively. Under another sensitivity test, we estimate the abnormal return based on the holding-period-return method. The results, which are not presented in this paper, do not change qualitatively.

Table 4: Results from Model (7) for the Period from May 10-21, 1985 and May 27-June 4, 1985

Panel A – May 10-21, 1985	Intercept	<i>DIV X IND</i>	<i>DIV</i>	<i>LEV</i>	<i>PROF</i>	<i>SIZE</i>
Co. Eff.	-0.0131	-0.0923	0.0258	0.0055	0.0073	0.0006
t-test	-3.31***	-1.915**	0.8289	1.187	0.7554	0.5755
Panel B – May 27 – June 4, 1985						
Co. Eff.	-0.0001	-0.0889	0.0127	0.0048	0.0098	-0.0018
t-test	-0.0152	-1.684*	0.3743	0.9541	0.9257	-1.702*

Table 4 Panel A shows the regression results from model (7) from May 10 – 21, 1985. Panel B shows the results from May 27 to June 4, 1985. ***, ** and * indicate significance at the 1, 5, and 10 percent levels respectively. R-Squ for Panel A is 0.1538; for Panel B is 0.179.

CONCLUSION

This paper uses an event study methodology and finds the effect of personal capital gains taxes on stock price. Using Canadian financial reporting data and Canadian stock market data, this study have documented that changes in capital gains taxation, relative to dividend taxation, can have an effect on stock prices depending on whether the stocks are high dividend yield or low dividend yield stocks. The effective tax rate on capital gains for investors, especially for individual investors, was reduced in 1985 due to the \$500,000 lifetime exemption. It is argued that, in response to the capital gains exemption, individual shareholders may prefer capital gains to dividends. Stock prices, in response to the decreasing demand for dividends from individual shareholders, will react negatively if they are high-yield stocks. Since the institutional or corporate shareholders are not affected by the lifetime exemption in the same way as the individual shareholders, this paper incorporates a proxy for specifying the status of the marginal investors. The tests in this study provide a preliminary support for this argument. It is shown that stock abnormal return is negatively associated with high dividend yields \times individual shareholding around (especially before) the announcement of the LCGE.

This study is of interest to corporate managers, tax advisors, and others in understanding about how stock prices react to tax law changes. This study is also of interest to policy-makers, to the extent that it assists them in understanding about the impact of tax law changes on capital market. However, this study is a small-sample study with 131 observations. Further partition of the data leads to only 54 observations. These small samples may reduce the validity of its findings. This study uses the data from the time period around the announcement of the lifetime capital gains exemption. It does not extend the time period beyond the year 1985 since tax rules changed in 1988. In 1988, the inclusion (deduction) rate on capital gains (capital losses) was changed to two-thirds. In addition, the tax reform in 1987 changed personal tax and corporate taxation dramatically. It may be difficult to isolate this lifetime exemption effect from other tax changes.

An extension of this study may involve an investigation of potential capital gains that are experienced by the marginal shareholder directly, rather than an examination of dividend yields. However, to measure the potential capital gains experienced by the marginal investors, it is very important to determine the initial cost and to examine data on the purchase of the shares by the marginal investors.

REFERENCES

Akindayomi, A. and Warsame, H.A. (2007), Effects of capital gains taxation changes on stock prices: evidence from the February 2000 Canadian Budget. *Accounting Perspectives*, 6(4), 369-387.

Amoako-Adu, B., Rashid, M. and Stebbins, M. (1992), Capital gains tax and equity values: empirical test of stock price reaction to the introduction and reduction of capital gains tax exemption. *Journal of Banking and Finance*, 16, 275-287.

Ayers, B. C., Cloyd, C. B. and Robinson, J. R. (2002), The effect of shareholder-level dividend taxes on stock prices: evidence from the Revenue Reconciliation Act of 1993. *Accounting Review*, 77(4), 933-947.

Ayers, B.C., Li, O.Z., and Robinson, J. R. (2006), Tax induced trading around the Taxpayer Relief Act of 1997, Working Paper, University of Georgia.

Beam, R.E., Laiken, S. N. and Barnett, J. (2009), *Introduction to Federal Income Taxation in Canada*, 30th edition, CCH Canada Limited.

Bell, L. and Jenkinson, T. (2002), New evidence of the impact of dividend taxation and on the identity of the marginal investor. *Journal of Finance*, 52(3).

Belsley, D., Kuh, E. and Welsh, R. (1980), *Regression Diagnostics*, Wiley.

Blouin, J. L., Raedy, J. S. and Shackelford, D. A. (2003), Capital gains taxes and equity trading: empirical evidence. *Journal of Accounting Research*, 41(4), 611-651.

Bolster, P. J. and Janjigian, V. (1991), Dividend policy and valuation effects of the Tax Reform Act of 1986. *National Tax Journal*, 44, 511-518.

Budget Papers - Securing Economic Renewal, Tabled in the House of Commons by the Honorable M. H. Wilson, Minister of Finance, May 23, 1985.

Chen N., Grundy, B., and Stambaugh, R. F. (1990), Changing risk, changing risk premiums, and dividend yield effects. *Journal of Business*, 63, 51-70.

Cook K.A. (2006), Stock price reaction to a reduction in the capital gains tax rate: evidence from the Taxpayer Relief Act of 1997. Working paper, Texas A&M University.

Dhaliwal, D., Li, O.Z., and Trezevant, R. (2003), Is a dividend tax penalty incorporated into the return on a firm's common stock?. *Journal of Accounting and Economics*, 35, 155-178.

Jang, H. J. (1994), The market reaction to the 1986 tax overhaul: a study of the capital gain tax change. *Journal of Business Finance & Accounting*, 21(8), 1179-1193.

Lang, M. H. and Shackelford, D. A. (2000), Capitalization of capital gains taxes: evidence from stock price reactions to the 1997 Rate Reduction. *Journal of Public Economics*, 76, 69-85.

Lin, H.C. and Zeng, T. (2003), Stock market reactions and capital gains tax: evidence from the 1985 Canadian Lifetime Capital Gains Exemptions. *Review of Accounting and Finance* 4(2), 149-164.

Klein, P. (1999), The capital gains lock-in effect and equilibrium returns. *Journal of Public Economics*, 71, 355-378.

McKenzie K. J. and Thompson, A. J. (1995), The impact of the capital gains exemption on capital markets. *Canadian Public Policy*, 21.

Miller M. and Scholes, M. (1978), Dividends and taxes. *Journal of Financial Economics*, 6, 333-364.

Shackelford D. A. (2000), Stock market reaction to capital gains tax changes: empirical evidence from the 1997 and 1998 Tax Acts. *Tax Policy and the Economy*, 14, 67-92.

Sias, R. W. and Starks, L. T. (1997), Institutions and individuals at the turn-of-the-Year. *Journal of Finance*, 52(4).

White, H., A. (1980), Heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica*, 48, 817-838.

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