



Munich Personal RePEc Archive

Backdating, tax evasion, and the unintended consequences of Canadian tax reform

Compton, Ryan and Sandler, Daniel and Tedds, Lindsay M.

University of Victoria, University of Manitoba, Western University

2010

Online at <https://mpra.ub.uni-muenchen.de/39788/>
MPRA Paper No. 39788, posted 03 Jul 2012 12:37 UTC

BACKDATING, TAX EVASION, AND THE UNINTENDED CONSEQUENCES OF CANADIAN TAX REFORM

Ryan A Compton
University of Manitoba
compton@cc.umanitoba.ca

Daniel Sandler
University of Western Ontario
dsandler@uwo.ca

Lindsay M. Tedds[°]
University of Victoria
ltedds@uvic.ca

Published in Tax Notes International, August 30, 2010, p. 671

Abstract

In 1984 and 2000, significant changes were made to the tax treatment of employee stock options in Canada. Although designed to increase the use of stock options as a compensation vehicle (1984) and decrease the loss of knowledge workers (2000), we argue that these tax changes were largely ineffective and perhaps unneeded. Further we demonstrate the negative unintended consequences of these actions, specifically that they reward the backdating of employee stock options and promote tax evasion, and discuss the policy implications of these unintended consequences.

Keywords: Employee compensation, stock options, personal income tax

[°] Corresponding author: Tedds: School of Public Administration, University of Victoria, Victoria, B.C., Phone: 250-721-8068, Fax: 250-721-8849. Compton: Department of Economics, University of Manitoba, Winnipeg, Manitoba; Sandler: Faculty of Law, University of Western Ontario, London, Ontario. We would like to thank colleagues in the School of Public Administration at the University of Victoria and participants of the Deloitte Centre for Tax Education and Research Tax Policy Research Symposium, Tax Expenditures and Public Policy in Comparative Perspective, and Shadow Economy, Tax Evasion, and Social Norms for helpful comments. The usual disclaimer applies. The authors would also like to gratefully acknowledge the financial support from the Social Sciences and Humanities Research Council (Standard Research Grant #410-2009-1955).

1. INTRODUCTION

The design of public policy and the choice of policy instruments are often guided by the principle that the government is deliberately trying to achieve some desired outcome through changing human behavior. Typically this means that governments are designing incentive mechanisms to reward desired behavior, while penalizing unwanted behaviour. The success or failure of a policy intervention is then usually determined by evaluating the effectiveness of the policy to achieve the desired result. However, there is another dimension that is often overlooked, that oftentimes people respond to incentives in unexpected, perverse, and costly ways. By overlooking these unintended consequences, both during the design phase and evaluation phase, policy makers are left with an incomplete picture of the effect of their intervention.

Merton (1936) popularized the concept of unintended consequences and it has since become widely studied across numerous disciplines including law, economics, and history (e.g. Ahmed & Braithwaite, 2007; Ayling & Grabosky, 2006; Donohue & Levitt, 2001; Fishman, 1991; Linck, Netter, & Yang, 2009; and Waller, 2007). At its most basic, the concept of unintended consequences states that actions, particularly by governments, may have unintended or unexpected effects beyond the initial intent of the action. Sometimes these unintended consequences are positive, but oftentimes they are negative and costly. This article addresses the issue of how government policy in Canada which tax prefers income from some employee stock options has had the unexpected consequence of rewarding fraudulent behavior (notably backdating, discussed below) and promoting tax evasion.

As detailed in Sandler (2001, 2004), preferential tax treatment of employee stock options granted by Canadian publicly traded corporations began in 1984 when the federal budget introduced paragraph 110(1)(d) of the *Income Tax Act* (ITA). Under this provision, an employee may be entitled to deduct an amount equal to 50 percent of the income benefit — the difference between the fair market value of the share on the exercise date and the strike price under the option — at the time the option is exercised.¹ Furthermore, in 2000 the federal government introduced a deferral which allows public company employees to defer the inclusion of the income benefit until the year that the shares are actually sold rather than when the option is exercised.²

While these policy interventions seem innocuous, they potentially have had a significant effect on an unrelated and recent policy issue: the backdating of employee stock options in Canada. In particular, we argue that an unintended consequence of the 1984 and 2000 tax changes was a negative one in the form of rewarding the returns to backdating (the fraudulent manipulation of employee stock option grant dates and strike prices to take advantage of share price gains). This comes about because in order to qualify for the deduction or deferral, the employee stock options must be granted such that the strike price is at least equal to the fair market value of the shares on

¹ The fair market value of a share on the exercise date refers to the market price of the share on the date an option is exercised, while the strike price refers to the price at which the option holder must purchase the shares as stipulated in the option agreement when the option is first granted. For those unfamiliar with executive stock options, more on the characteristics and workings of executive stock options are detailed in section 2.

² When an option holder exercises the option and acquires the underlying shares, the holder is under no obligation to sell the acquired shares, and may hold the shares in the hope that they increase in value.

the date the option was granted. That is, there is a clear tax advantage to stock options that are granted not-in-the-money or at least reported as such. Hence, the act of reporting options that are granted in-the-money as being not in-the-money, (i.e. backdating), is an act of tax evasion in Canada. This paper demonstrates a possible link between both the 1984 and 2000 tax changes, changes which were implemented by Canada to align the incentives of employees with those of their shareholders (1984) and to slow the movement of high tech workers to the United States (2000), with the rewarding of backdating in Canada.

The remainder of this paper is as follows. Section 2 provides a brief discussion of employee stock options and backdating. Section 3 discusses the 1984 and the 2000 federal tax changes, the reasoning behind them and their perceived effectiveness. Section 4 details the unintended consequences of these changes, notably how they reward backdating. Section 5 discusses the implications of the unintended consequence, notably the relationship between backdating and tax evasion, and recommends some policy actions. Section 6 concludes and offers suggestions for future research.

2. EMPLOYEE STOCK OPTIONS & BACKDATING

Generally speaking, a stock option is a financial instrument which provides the holder the right, but not the obligation, to buy or sell stock of a corporation within a stated period of time at a specified price, commonly referred to as the “strike price”. There are a number of significant differences between employee stock options and standard stock options. Unlike standard stock options, employee stock options are not traded publicly on an exchange, but rather are granted pursuant to a private contract with the board of directors or compensation committee of the firm serving as the writers of the option and the executive (employee) acting as the holder of the option. Second, employee stock options must often be held for a pre-specified vesting period before they can be exercised,³ which is not present in standard stock options. Third, the option period of an employee stock option can be quite lengthy (e.g., ten years), which is longer than standard stock options. Fourth, the option period of an employee stock option is often curtailed in the event that employment is terminated or the employee dies. Last, employee stock options are usually (and often required to be) granted at-the-money, meaning that the strike price of the option equals the market price of the underlying stock on the day of the option grant, whereas a traditional stock option is issued out-of-the-money, meaning that the strike price of the option exceeds the market price of the underlying stock.

While employee stock options have gained prominence as a compensation and incentive mechanism, recent work in the U.S. finance literature (e.g. Heron & Lie, 2009; Lie, 2005; Narayanan & Seyhum, 2008) and legal literature (e.g. Fried, 2008; Narayanan, Schipani, & Seyhun, 2007; Walker, 2007), as well as recently in the Canadian legal literature (Compton, Sandler, & Tedds, 2009), has raised concerns about stock options as a major component of employee remuneration. These concerns surround the practice of backdating. As discussed in

³ When employees are granted stock options, they often do not have the right to exercise the options for a stipulated period of time. This period is known as the vesting period and is usually 3 to 5 years. During the vesting period the employee cannot sell or transfer the stock or options and, indeed, would forfeit the options in the event that employment is terminated. Oftentimes, the terms of the stock option provide for partial vesting over the vesting period (e.g., one-quarter of the options vest on each anniversary of the grant over a four-year vesting period).

Compton et al., backdating is the use of hindsight to select a date for a stock option grant after that date has occurred, and then claiming to have granted the options on that earlier date in order to take advantage of the historical price performance of a company's stock. In practice this involves looking back to find a local low point for the underlying stock price relative to the current day's stock price and choosing that low point as the option's grant date. At its most basic, backdating results in an in-the-money option award, meaning that the strike price of the option is less than the market price of the underlying stock on the day of the option grant, appearing as though it were an at-the-money option award, thus providing an instant paper gain in the option value relative to the stock.

The backdating of options has become a significant policy issue due to its suspected prevalence. US research has shown that backdating was quite prevalent (e.g. Lie, 2005; Heron & Lie, 2007). Some estimates indicate that approximately 20% of executive stock option grants appear to have been backdated (Heron, Lie, & Perry 2007, p. 22) and at least 30% of companies that granted options to executives appear to have manipulated one or more of their grants (Heron & Lie, 2009). In addition, close to 200 companies (some Canadian) have been investigated by the SEC and the U.S. Justice Department (Collins, Gong, & Li, 2009, p. 403), many companies have had to restate earnings, a number of company executives have been forced to resign after admitting to backdating options, and criminal investigations have been launched against several key insiders. On the heels of the US investigations, several Canadian companies have also reviewed their option dating practices and found inappropriate pricing practices (Middlemiss, 2010, March 11).

Since recipients of backdated options could simply be provided with cash compensation or additional properly dated and priced incentive awards, including options, instead of engaging in questionable backdating practices, it is clear that there must be specific incentives that have led to backdating employee options. Academics, regulators, and practitioners alike have tried to gain a better understanding of these incentives and the roles they have played in the backdating problem; however, there is as yet no consensus regarding the causes of backdating. This is problematic as policy, legislative, and regulatory changes are unlikely to be effective if the root contributors are unknown. Untangling the causes of backdating will remain elusive unless each factor is considered in detail and evidence considered from different regimes.

The first step in untangling the causes of backdating is to acknowledge that the backdating phenomenon must be driven by both supply and demand factors. From the supply side, the question is what motivates a firm to grant a backdated option, and from the demand side, what motivates an employee to demand (or at the very least accept) a backdated option? Most of the research to date has focused on supply side factors, while there has been little discussion of demand side factors. While undoubtedly understanding the propensity to backdate requires insight on the supply side factors to backdating (as it is the firms that ultimately grant employee stock options), without demand there will be no supply. Therefore understanding the drivers that influence demand is critical to understanding the whole story behind backdating of employee stock options. Many assume that the only factor driving the demand for backdated options is the presence and size of the discount; however this is a naive assumption that obfuscates the complexities of the problem of backdating. There are other factors, in addition to the discount, that may affect the financial benefit from backdated options and, consequently, may influence

the demand by employees for backdating options. One such factor is the personal income tax treatment of employee stock options.

3. PERSONAL INCOME TAX TREATMENT EMPLOYEE STOCK OPTIONS IN CANADA

Compared to most countries, the personal income taxation of employee stock options in Canada is notably less complex and more generous from the employee's perspective. Since 1972, all employee stock options share the same general tax treatment in two respects. First, unlike other employment income (e.g. annual salary or bonus income), which is taxable in the year it is received, there are no tax consequences when stock options are granted or when they vest. Rather, under subsection 7(1) of the ITA, a tax liability does not arise until the year the option is exercised. The amount that must be included in income from employment upon exercise is equal to the difference between the fair market value of the stock on the date the option is exercised and the strike price. Second, upon the sale of the stock acquired pursuant to the option, the difference between the proceeds of disposition of the stock and the fair market value of the stock on the date the option is exercised is taxed as a capital gain or capital loss, as the case may be. Under section 38 of the ITA, the taxable portion of a capital gain or capital loss is one-half of the capital gain or capital loss.⁴

For options issued by a public corporation,⁵ there were two significant tax changes to this base tax treatment that are germane to the discussion in this paper: the changes made in 1984 and 2000.

1984 Tax Changes

Motivating the 1984 federal tax change was the desire “to encourage more widespread use of employee stock option plans” (Department of Finance, 1984, p. 7). Employee stock options are generally believed to assist in the alignment of incentives of company executives and workers with that of company shareholders. By aligning the incentives of employees with shareholders, employees have a stake in increasing their company's value (and hence, share price) and must be entrepreneurial and innovative to do so. By increasing the productivity and ultimately growth of their company at the micro level, at a macro or economy-wide level the hope would be for higher rates of economic growth and prosperity. This was and continues to be an important issue in Canada which, historically, has had low productivity growth, particularly when compared to the U.S.

In order to encourage the use of stock options as a compensation mechanism, the 1984 federal budget introduced paragraph 110(1)(d) of the ITA.⁶ Under paragraph 110(1)(d), if a Canadian

⁴ From 1972 to 1988, the inclusion rate for capital gains and losses was one-half. In 1988, the rate rose to two-thirds for 1988 and 1989 and to three-quarters for capital gains and losses arising in or after 1990. In February 2000, the inclusion rate was decreased to two-thirds and in October 2000 was further decreased to one-half, where it currently stands.

⁵ Employee stock options can also be issued by a Canadian-controlled private corporation (“CCPC”) and the taxation history and treatment of these options differs from those issued by a public corporation. As the backdating scandal mainly involves public corporations, we do not consider the tax treatment of options issued by CCPCs.

⁶ Prior to 1984, a deduction was only applicable to stock options granted by Canadian-controlled private corporations (CCPCs).

public company grants stock options to an employee, and the strike price is at least equal to the fair market value of the underlying share on the day the option was granted, the employee receiving the options is able to deduct 50 percent of the stock option benefit.⁷ The application of the deduction means that the income benefit obtained from stock options is taxed at the same rate as capital gains (and thus at a lower rate than that applicable to ordinary income).

This generous treatment of income derived from the exercise of employee stock options has clearly encouraged their use in lieu of ordinary employment compensation (salary and bonuses). Available data indicate that in 1991, 33 percent of the largest one hundred Canadian public corporations granted stock options to their executives (Klassen & Mawani, 2000), while by 1999, this number had increased to 97 percent (Press, 1999) and by 2000 was 100 percent (Hall & Murphy, 2003). Further, according to the Workplace and Employee Survey, about 10% of Canadian employees in 1999 worked for an employer that had a stock purchase plan, with the highest incidence (33%) occurring in the information, computer, and telecommunications (ICT) sector (Luffman, 2003).

However, establishing a clear causal link between the increasing use of employee stock options in Canada and the existence of the tax deduction is problematic. First, this tax regime favors the recipient, the employee, rather than the supplier, the company. It provides no direct impetus for a company to create employee stock option plans or increase the supply of stock options available under such plans which was the intent of the change (see above).⁸ However, assuming the existence of a stock option plan, it does increase the after-tax value of stock options to the employee, particularly when compared to wage and salary income, and may lead to increased take up by employees. Second, the use of employee stock options in the United States has increased at a much faster rate and risen to a far higher level than in Canada, despite a more limited tax preference in the United States. The most common type of stock option in the United States is a non-qualified stock option (NSO), which accounts for more than 95% of all employee stock options in the United States (Hall & Liebman, 2000), and these are taxed as ordinary income.⁹ It is often asserted that the key driver to the use of NSOs as a component of employee compensation has been the ability of the issuing company to deduct the expense even though the

⁷ Under paragraph 110(1)(d), the employee is entitled to a deduction in determining taxable income equal to one-half of the benefit included in income in the year the options are exercised if three conditions are met: the stock options are granted not-in-the-money, the employee deals at arm's length with the employer, and the shares acquired under the options are "garden variety" common shares.

⁸ Somewhat perversely, a Canada Revenue Agency administrative practice has offered companies the ability to fully deduct amounts paid to employees to cancel employee stock options while the employee has been entitled to deduct one-half of the amount received under paragraph 110(1)(d) (provided the conditions of that paragraph, discussed above in note 7, are met), where the right to "cash settle" the option belongs to the employee: see the discussion in paragraph 11 in Canada Revenue Agency Income Tax Interpretation Bulletin IT-113R4 (<http://www.cra-arc.gc.ca/E/pub/tp/it113r4/it113r4-e.html>). These "cash-settled" options are attractive to employers in that the tax saved by the employee may be "shared" with the employer through reduced salaries. On March 4, 2010, the Minister of Finance announced that, effective immediately the employer would have to elect *not* to deduct the amount paid to the employee on the cancellation of an option in order for the employee to benefit from the paragraph 110(1)(d) deduction. In the absence of such an election, the employer would be able to deduct the amount paid, but the employee would have to include the entire amount in income (Department of Finance, 2010, page 353-354).

⁹ NSOs are taxed identically to the base tax treatment outlined above except that the capital gains inclusion is 100%; however, the capital gains rate is much lower if the shares acquired pursuant to the options are held for at least one year and sold for a gain.

company is not out of pocket (Malwani, 2003, p. 1231).¹⁰ Canadian companies are not permitted such a deduction. Third, the use of employee stock options throughout North America, particularly in ICT companies, is highly correlated with the large increases in the stock market during the 1990s. During this time, recipients could expect to more than offset the higher wages they would have earned without the option plan while employers reduced their compensation costs, which is a particular draw for companies with limited or negative revenues like many ICT companies at the time. Taking these three considerations together, there is little reason to believe that the 1984 tax change had the intended result of increasing the use of employee stock options. Rather, the tax preference may have been correlated to the increase in employee stock options, but did not cause the increase.

Further, there is no consensus in the academic literature that employee stock options actually have any discernable effect on employee productivity at the micro level. For example, while Ittner, Lambert, and Larcker (2003) show that firms that grant options broadly to employees grow more rapidly, they provide no conclusive evidence that this is the result of employee working harder and more innovatively. In contrast, Oyer and Schaefer (2005) demonstrate that option awards to non-executive employees are not only too small to provide any incentives but that few of these lower level employees have the necessary authority to make the types of decisions and affect the changes necessary to greatly increase productivity. They do, however, find that stock options can be an effective tool in employee attraction and retention, which leads into a discussion on the tax change in 2000.

2000 Tax Changes

The next major change in the taxation of options in Canada was the 2000 tax changes, which originally was intended to address the brain drain Canada was believed to be experiencing during the 1990s. A source of major policy concern at the time, the late 1990s saw politicians and business leaders increasingly worried about the perceived exodus of Canada's best and brightest college graduates to the United States. This caught the attention of politicians and policy makers as it was the loss of knowledge workers (doctors, scientists, professors, high-tech workers, etc) that appeared to make up the bulk of the flow, and so concerns were raised over the extent these losses would affect the economy and society more broadly.¹¹ The government was looked to as an actor to solve or at least reduce the loss of Canadian high skilled workers, and the response was a range of policies directed to those sectors which were experiencing the greatest net migration.

One of the sectors specifically targeted was the ICT sector. It was widely recognized that many high-tech workers, particularly those employed at startup companies, accept lower salaries and benefits in exchange for employee stock options as part of their total compensation packages. Given the belief of policy makers at the time that the higher levels of income tax in Canada relative to the United States put Canada at a distinct disadvantage when it came to retaining and attracting talented individuals, the Government of Canada introduced changes to the tax

¹⁰ The economic impact of employee stock options is on existing shareholders through the dilution of their shareholdings.

¹¹ See Finnie (2001), Helliwell and Helliwell (2001), Wagner (2000), and Zarifa and Walters (2008) for discussion on the evidence surrounding the brain drain in Canada.

treatment of employee stock options. These changes we designed to make their tax treatment similar to or more favorable than that in the United States.^{12,13}

Making Canada's tax system more competitive with the U.S. tax system was at the time considered to be a powerful policy instrument for reducing the flight of knowledge workers. As detailed in Sandler (2001, 2004), the main component of the tax change was the addition of a deferral by the Government of Canada for up to \$100,000 per year of public company stock options. In other words, the employment income benefit that would otherwise be included in income in the year of exercise can be deferred until the year the shares are sold. The deferral, however, is limited to the first \$100,000¹⁴ worth of options per year of vesting. An individual is also entitled to the deferral only if he or she is also entitled to the deduction under paragraph 110(1)(d), which means that the strike price is at least equal to the fair market value of the underlying share on the day the option was granted.^{15, 16}

While the 2000 tax changes were widely praised by the high-tech community in Canada,¹⁷ the reaction of academics to this tax change was largely negative. As discussed in Sandler (2001, 2004), both the federal and provincial changes ignored the fact that most employee stock options were already taxed more favorably in Canada than in the United States even before these changes. In particular, according to Sandler (2001), the 2000 changes made the tax treatment of employee stock options in Canada "generous to a fault" (p. 264). The error made by the Government of Canada was to compare the Canadian tax treatment of stock options to what is known in the United States as Incentive Stock Options (ISOs). For an ISO, there are no tax consequences until the time the shares are sold. At that time, the difference between the sale price of the shares and the strike price under the option is treated as a capital gain and since the shares must be held for at least one year after the options are exercised to benefit from ISO treatment, the gain is taxed at the long-term capital gains rate of 15%.¹⁸ This benefit is only

¹² For discussion beyond that in this paper on the taxation of stock options in Canada broadly, and the 2000 tax changes specifically, see Sandler (2001, 2004).

¹³ The province of Ontario, home to many high tech firms and "Silicon Valley North", which is a high-tech cluster in the Ottawa area, also introduced changes in their 2000 provincial budget. Specifically, the Government of Ontario introduced a tax exemption for employees involved in research and development for the first \$100,000 per annum of the employee benefits arising on the exercise of qualified stock options or on eligible capital gains arising from the sale of shares acquired by the exercise of eligible stock options. A qualifying individual was entitled to the Ontario tax exemption only if they were also entitled to the deduction under paragraph 110(1)(d) of the ITA, which meant that the the strike price was at least equal to the fair market value of the underlying share on the day the option was granted. The exemption was subsequently repealed in the Ontario 2004 budget after a change in government in the 2003 election. Given the short lived nature of the tax change, we do not consider it in this paper.

¹⁴ The value is based on the fair market value of the underlying shares at the time the options are granted.

¹⁵ The employment income benefit can be deferred until the time the shares are disposed if the conditions stipulated in subsections 7(8) to (16) of the ITA are met, including: (1) the recipient is a Canadian resident; (2) the underlying shares are traded on a Canadian or foreign prescribed stock exchange; and (3) the individual is entitled to the deduction under paragraph 110(1)(d) of the ITA.

¹⁶ On March 4, 2010, the federal government announced it was repealing the tax deferral, effective immediately (Department of Finance, 2010, page 356).

¹⁷ Ironically, the high-tech community also applauded the just announced (March 4, 2010) repeal of the deferral.

¹⁸ Prior to 2003, the long term capital gain rate was generally 20%. In 2003, the rate was reduced to 5% for individuals in the lowest two income brackets and 15% for all others. In 2008, the long-term capital gain rate for individuals in the lowest two tax brackets (currently 5% and 15%) was further reduced to zero. These reduced rates are currently effective until 2010.

applicable for the first US\$100,000 worth of options.¹⁹ In addition, in order for an option to be treated as an ISO, the strike price must not be less than the fair market value of the stock at the time of the grant and the exercised shares must be held for the longer of two years from the grant date or one year from the exercise date.²⁰ While the 2000 changes appeared to create similar conditions in Canada to ISO treatment in the United States, the key difference is that a US employee is required to hold the shares for at least one year after the options are exercised to benefit from ISO treatment whereas in Canada, no such precondition exists for a deduction under paragraph 110(1)(d). Due to the US restrictions on ISO treatment and the fact that the vast majority of employees exercise the options and sell the underlying shares at the same time,²¹ less than five percent of all employee stock options in the United States are ISOs, yet Canada was endeavoring to match its tax rules for virtually *all* public company employee stock options to a rather narrow preference in the United States.

With respect to the ability of the tax treatment to address the flight of human capital to the United States, there are two key issues to consider. First, Sandler (2001, 2004) and Wagner (2000) both indicate that there is little evidence to support the belief that differing tax rates are a primary reason for migration. Wagner (2000) demonstrates if Canada adopted “the same tax rates, tax deduction and tax rules as the US ... Canada’s southward migration drain would have declined by only 10 per cent...” (p. 40) In addition, Frank and Bélair (1999) and Helliwell and Helliwell (2000) report survey evidence that suggested that job opportunities and higher salaries are cited most frequently as key determinants, while taxes ranked much lower.

Second, the deferral is only of value if the individual exercises their options and then holds the underlying shares beyond the tax year in which the options were exercised. According to existing research (Carpenter & Remmers, 2001; Heath, Huddart, & Lang, 1999; Ofek & Yermack, 2000), most employees (80-90%) generally exercise and sell on the same day (also known as cashless exercises). This is because the longer the shares from the exercised options are held, the greater the risk that the shares may decrease in value. If the individual exercises, holds, and claims the deferral, the individual must pay tax on the deferred income when the shares are sold regardless of what has happened to the price of the stock after exercise.²² From an individual tax

¹⁹ The combined value, as determined by the fair market value of the underlying shares on the grant date, that can be acquired for the first time in any calendar year (i.e., in the year of vesting) cannot exceed US\$100,000.

²⁰ When the option holder executes their right to purchase shares.

²¹ See below.

²² Thus, if the share price declines significantly between the time of exercise and the time of sale, the employee must still pay tax on the amount of the option benefit (the difference between the fair market value of the stock *at the time of exercise* and the exercise price, which benefit may be reduced by one-half due to the deduction under paragraph 110(1)(d)) and, at the same time, realize a capital loss equal to the difference between the proceeds of sale and the value of the shares at the time of exercise. The capital loss (one-half of which is deductible) may be deducted only from capital gains, and if the employee has not realized any capital gains, the loss may be only carried over to reduce capital gains in other years. In these circumstances, the employee may face a significant tax burden due to the stock option benefit – a burden that could exceed the proceeds of sale of the shares – with no relief available. This situation was faced by a number of employees of JDS Uniphase Canada, who received federal reprieve on their tax obligations in 2006 after the intervention of their local MLA Gary Lunn, and is currently being faced by numerous Canadian employees of Nortel. In an effort to avoid this situation in the future, in addition to repealing the deferral as discussed in note 16, on March 4, 2010, the federal government also announced it was introducing special tax relief for those individuals who had previously took advantage of the deferral and for whom the deferred stock option benefit exceeds the fair market value of the shares being sold. Any taxpayer in this situation may elect to pay a special tax which is equal to the proceeds on the sale rather than the tax owing on the deferred income

liability standpoint, it is a risky bet to claim the deferral and continue to hold the shares for sale in a future year. An exception, noted by Sandler (2001) is that “departing employees who must exercise their options within a certain time period or forfeit them...may exercise and hold if they believe the shares are a good long-term investment” (p. 275). In this case, the deferral helps them avoid a cash flow problem.

Summary

The implemented tax changes in 1984 and 2000 were blunt instruments for what were sharp and well defined problems. It is highly unlikely that the 1984 changes played a significant role in the use of stock option plans and the size of stock option awards in Canada. Evidence is also provided that calls into question the ability of employee stock options to have any detectable affect on employee productivity. Further, the 2000 change at the federal level was applied to all employee stock options, and not just to those sectors most affected by the brain drain.²³ As noted by Compton et al. (2009), not only has the use of stock options increased exponentially over the last 20 years but they have become the single largest component of compensation among senior executives at large publicly traded companies in North America. This shows that many individuals, not all of whom were implicated in the brain drain, would benefit from the preferential tax treatment.

The tax changes were also intended to be permanent features in the Canadian tax code, despite evidence suggesting that the solutions did not address the underlying problems, particularly since the brain drain problem was largely transitory in nature. Indeed, even before the tax changes were announced, the so-called tech bubble burst not only rendering the shares of many companies, along with associated stock options, worthless but also resulted in bankruptcy and layoffs.

4. UNINTENDED CONSEQUENCES

What has so far been overlooked in the existing discussions of the 1984 and 2000 tax changes is the effect these changes have had in rewarding the backdating of employee stock options. It was noted above that in order for an individual to qualify for either the deduction introduced in 1984 or the deferral introduced in 2000, the employee stock option must be granted such that the strike price is at least equal to the fair market value of the underlying share the day the option was granted. That is, the most preferential compensation regime from an employee’s tax perspective is one in which the options are granted not-in-the-money, or for our purposes, backdated to appear as such.

(Department of Finance, 2010, page 357). For example, assume an individual exercised 1,000 options with a strike price of \$10 when the stock was trading at \$110 per share and elected to defer the income inclusion of \$100,000 until the year of sale. When the individual ultimately sells the shares, they are worth only \$1, resulting proceeds of sale of \$1,000. Instead of paying the tax owing on the \$100,000 deferred income benefit (assuming an effective tax rate of 29% and that the individual can claim the deduction under paragraph 110(1)(d), the tax liability would be \$14,500), the individual could pay the special tax equal to the proceeds to disposition of \$1,000.

²³ Indeed, some sectors supposedly affected by the brain drain – such as medical doctors – do not use stock options plans at all.

To demonstrate the tax consequences of backdating, we use an example. Employee A, who is employed at a publicly traded company in Canada, is the recipient of an option grant for five shares.²⁴ The grant is dated as having been made on October 1 when the share price was \$10 but in reality was granted November 30 when the share price was \$15.²⁵ We assume that the individual faces a marginal tax rate of 29%, which is currently the highest marginal tax rate at the federal level in Canada. Recall, that in Canada a tax liability does not arise until at the earliest, the date the options are exercised.

Example 1

We first consider the base-case treatment, when there is no deferral or deduction, and assume the individual exercises and sells on the same day, which as indicated above is a common practice. It is assumed that the fair market value of the shares on the date of exercise and their sale price is \$20. If the option is “successfully” reported as an at-the-money grant awarded on October 1 with a strike price of \$10, then the income benefit subject to tax is calculated as the difference between the fair market value of the shares on the date of exercise (\$20) and the strike price (\$10) multiplied by the number of shares awarded (5), which is \$50. As the sale price is equal to the strike price, there is no capital gain or loss to report. The individual faces a tax liability of \$14.50 (29% of the tax benefit valued at \$50) and the net after-tax benefit to the employee is \$35.50. This is reported in the first column of Table 1.

If instead, the option had been properly dated as November 30 and had an associated strike price of \$15 (the fair market value on that date), then the individual would have reported an income benefit of \$25 resulting in a tax liability of \$7.25 and a net after-tax benefit to the employee of \$17.75. The difference between this scenario and the one considered above is solely due to the size of the discount (due to backdating the strike price to \$10 rather than \$15) and not due to any differences in the tax treatment of these two options.

The third scenario is where the employee receives the backdated options but properly reports them as an in-the-money option to the tax authority. Under the base case treatment, this option is taxed the same as an at-the-money option.

What is demonstrated in this example is that under the base case tax treatment, the only reward to backdating comes from the presence and size of the discount and not due to any differences in the tax treatment of options depending on their characteristics. Referring back to the discussion in section 3, this was the tax regime in place in Canada prior to 1984 and is the tax regime in place in the United States for all NSO options.²⁶

²⁴ It would be quite rare for an option grant to only include such few share but we do so for ease of exposition. It is a simple exercise to extend the example to include any number of shares once it is laid out.

²⁵ Of the few Canadian companies that have publicly announced that they have reviewed their option dating practices and have released information resulting from these reviews, one pricing practice was to use the lowest monthly trading price of the month preceding the grant to determine the grant date of the option awards. For the example used in this paper, we use this pricing practice and assume that the actual decision date was the end of the month, thus providing the longest look back window.

²⁶ At least the tax treatment of NSOs prior to late 2004. Following in the wake of corporate and accounting scandals such as Enron, Tyco, and WorldCom, the American Jobs Creation Act of 2004 added section 409A to the Code,

Example 2

Now consider the implications of the paragraph 110(1)(d) deduction. Recall from section 3 that the 1984 change means that only one-half of the option benefit is included in income for tax purposes regardless of the length of time that the shares are held after exercise) provided that the options are not in-the-money (or are backdated to appear as such). Under this regime, if the backdated option is “successfully” reported as an at-the-money grant awarded on October 1 with a strike price of \$10, then the income benefit subject to tax is calculated as the difference between the fair market value of the shares on the date of exercise (\$20) and the strike price (\$10) multiplied by the number of options awarded, which is \$50. The individual can claim a deduction under paragraph 110(1)(d), which reduces the income inclusion by half to \$25. The individual faces a tax liability of \$7.25 (29% of \$25) and the net after-tax benefit to the employee is \$42.75. This is reported in the fourth column of Table 1.

If instead, the option had been properly dated as November 30 and had an associated strike price of \$15 (the fair market value on that date), then the individual would have reported an income benefit of \$25, claimed the deduction which reduces the income inclusion to \$12.50 (half of \$25), resulting in a tax liability of \$3.63 (29% of \$12.50) and a net after-tax benefit to the employee of \$21.38.

The third scenario is where the employee receives the backdated option but properly reports it as an in-the-money option to the tax authority. Under the 1984 rules, the individual cannot claim a deduction under paragraph 110(1)(d) since the strike price is not at least equal to the fair market value of the underlying share the day the option was granted. As a result, the in-the-money options are taxed identically to the base case treatment.

In summary, the after-tax benefit to the employee of a backdated option in the presence of the deduction is higher than any other case. In fact, the after-tax value of the backdated option is worth \$7.25 more than reporting the option as being in-the-money and \$21.37 more than an at-the-money option granted on November 30. The presence of the deduction has rewarded the individual who receives a backdated option yet reports it as an at-the-money grant. Unlike in the base case scenario, the individual has reduced his or her tax liability by misreporting the option. The individual benefits from backdating not only from the discount but also from the preferential tax regime.

Example 3

In the third and final example, we consider the affect of the deferral introduced in 2000. To do so we change the sale date²⁷ of the shares to sometime after the exercise date (to a subsequent taxation year). In order to obtain the benefit of the deferral, the shares acquired at exercise must be held into a different tax year from that of exercise. The amount that may be deferred is limited to the benefit arising on \$100,000 worth of stock options per year of vesting (based on the fair

which radically changed the taxation of deferred compensation, including discounted (and backdated) stock options. Section 409A is discussed in more detail in section 5.

²⁷ When the individual sells the shares acquired through exercise.

market value of the underlying stock when the options were granted). We now need to include some information about vesting so we extend our example to include the fact that the options vest at a rate of 1/5 (or 1 option) per year over five years.

In the first scenario (backdated options that are reported as being at-the-money), the maximum number of options vesting in any one year that can benefit from the deferral is 10,000, which is calculated by dividing the \$100,000 limit by \$10, the purported fair market value of the underlying stock when the options were granted. Since only one option vests each year, the entire employee benefit arising on the exercise of all five options is deferred from the year that the options are exercised until the year of sale. That is, at exercise, the individual realizes an income benefit of \$50, as in the previous examples, but defers the full amount of this inclusion until the sale of the stock. This means there is no tax liability to the individual in the year of exercise.

For this individual, holding the shares into another tax year pays off because the \$25 sale price for the shares exceeds the value of the shares at the time of exercise. This means the individual not only has to report a taxable income benefit but also a capital gain. Upon the sale of the stock, the individual reports a taxable capital gain. The taxable capital gain is calculated as the difference between the fair market value of the shares on the date of sale (\$25) and the fair market value of the shares on the date of exercise (\$20) for a gain amounting to \$5 (\$5 times 5 shares). As noted in section 3, the taxable portion of the capital gain is currently calculated as one-half of the capital gain (\$12.50) which is taxed at the individual's marginal tax rate of 29%. As a result, the tax owing on the gain is \$3.63. The individual must include the deferred income benefit of \$50 in taxable income, and can claim the 50% deduction under paragraph 110(1)(d) of the Act, resulting in tax owing of \$7.25 on the taxable income benefit of \$25. The total tax owing in this case is \$10.88.

It should be stressed that the presence of the deferral does not change the total amount of tax owing but it does change the timing of the tax owing. Since this portion of the tax liability can be deferred until the share has been sold, the employee can use the funds from disposition to pay for this tax liability rather than using income from other sources which would be the case without the presence of the deferral when an individual exercises and holds onto the shares.

If instead, the option had been properly dated as November 30 and had an associated strike price of \$15 (the fair market value on that date), but all else from the first scenario under this example is the same, then the gain and the tax owing on the gain is identical to that just considered. The individual also includes the deferred income benefit of \$25, claims the deduction which reduces the income inclusion to \$12.50 (half of \$25), resulting in a tax liability of \$3.63 (29% of \$12.50). The total tax owing in this case is \$7.25.

Finally, in the case where the employee receives the backdated option but properly reports it as an in-the-money option to the tax authority, the individual cannot defer the income inclusion beyond the year the options are exercised. In the year of exercise, the individual must report the full income benefit of \$50 and pay tax amounting to \$14.50. Since the stock has not been sold at this time, the employee must pay this much larger tax liability from other income sources. When the shares are ultimately sold, the individual pays only the tax owing on the capital gain which is

the same as in the previous examples. The total tax liability is \$18.13 which is far higher than the other two scenarios in this example, not including the time dimension of the liability.

As with the deduction, a backdated option does not qualify for the deferral due to the price restriction on the option to qualify for the deferral. If an employee reports a backdated option as an at-the-money award, exercises and sells in different years, and does not report the stock option benefit in the exercise year (i.e., the employee claims the deferral), then the individual is underpaying taxes in the exercise year by \$14.50. In addition, in the sale year when the stock option benefit is recognized, the employee is also improperly claiming the deduction under paragraph 110(1)(d) and underpaying taxes on the income benefit in the amount of \$7.25.

5. DISCUSSION: IMPLICATIONS ARISING FROM THE UNINTENDED CONSEQUENCES

In Canada, provided that the options are at-the-money (or backdated to appear as such), only one-half of the option benefit is included in income for tax purposes (due to the deduction under paragraph 110(1)(d)) regardless of the length of time that the shares are held after exercise. This demonstrates a clear tax advantage for stock option compensation provided that the options are granted not-in-the-money (or reported as such). That is, an individual that receives backdated options, which are in-the-money options, but reports them (whether unknowingly, carelessly, negligently, or fraudulently) as at-the-money options to the tax authority, is being rewarded under Canada's tax system. This is certainly an unintended consequence of the tax changes considered in this paper.

This is not to say that there are no repercussions to the individual who engages in this reporting behaviour. In Canada, employees who receive and improperly report backdated stock options may be reassessed by the Canada Revenue Agency (CRA) not only to deny any deduction claimed under paragraph 110(1)(d) but also to include the employee benefit from the option in income in an earlier year than that in which the employee reported the benefit (and offsetting deduction) for tax purposes. Such reassessments would also include interest, compounded daily at a relatively high rate. Furthermore, an employee who knowingly received backdated options and reported them as if they were not-in-the-money could be subject to gross negligence penalties and perhaps even charged with tax evasion.²⁸

But the incidence of tax evasion is only partially related to the size of the penalty. Another important variable is the probability of being audited and unfortunately, the detection rate in Canada of backdated stock options is quite low, for a number of reasons. First, in order for CRA to detect such behaviour, they would require information that is only available from a thorough audit of company records. Second, there have been very few companies investigated by securities agencies in Canada for backdating behaviour. Third, and perhaps consequently, there has been rather limited public or academic discourse in Canada regarding the incidence of backdating. The failure in all three cases is likely explained by the lack of public data that can be used to test for the possible incidence of backdating and therefore narrow the number of

²⁸ The implications of this could be even further reaching since it has previously been found (Joulfaian, 2000) that non-compliant corporations are three time more likely to be managed by executives who have evaded personal taxes.

companies to audit or investigate.²⁹ In contrast, the significant number of US companies that have been investigated by the SEC is related directly to academic research based on readily available and easily useable databases (such as the Thomson Financial Insider Filing and Standard&Poor's ExecuComp databases).

At this point in time, only one Canadian company has undergone an investigation by the SEC and the Ontario Securities Commission (OSC) that resulted in information which the CRA used to reassess some employees that exercised suspicious stock option awards. In addition, at least four other Canadian companies have quietly announced that they found practices consistent with backdating, but it is not clear whether this has resulted in their employees being reassessed by CRA (Middlemiss, 2010, March 11). This pales in comparison to the situation in the United States where over 200 firms have been investigated.

As recent events have shown, Canada usually approaches the regulation of financial instruments in a rigorous and risk averse fashion. Yet in the context of employee stock options, Canada has devised a system that rewards risky and fraudulent behaviour. The regulation and taxation of employee stock options is an area where Canada would stand to take a page out of the US playbook. What actions can Canada take to eliminate or at least minimize the unintended consequences arising from the tax treatment of stock options? First, as Sandler (2001, 2004) suggested, perhaps it is time for Canada to rethink the deduction and deferral, either to eliminate them completely or to attach a holding period requirements similar to that in the United States. Indeed, Canada has recently made some strides in this area. On March 4, 2010, the federal government announced it was repealing the tax deferral, effective immediately (Department of Finance, 2010, page 356). However, the reasons are quite unrelated to backdating. Instead, the deferral was eliminated due to the financial difficulties that arise when the stock associated with the exercised shares decreases in value (discussed in more detail in note 22).

Second, the penalties that apply in Canada should an employee be caught backdating pale in comparison to the penalties now applicable in the United States. In the United States, employees who receive backdated ISOs or backdated NSOs are considered to be receiving deferred compensation and, as of October 2004, are subject to tax under Internal Revenue Code ("IRC" or the "Code") section 409A. IRC section 409A applies to a broad range of deferred compensation, although it provides for a number of exceptions, including employee stock options that are granted not-in-the-money. However, in-the-money options (which include back-dated options that appear to be not-in-the-money options) are caught by the section. Under section 409A(a)(1)(A), the "compensation deferred under the plan" must be included in the employee's gross income "for the taxable year to the extent not subject to a substantial risk of forfeiture and not previously included in gross income." In addition to the income inclusion, section 409A(a)(1)(B) provides that the tax payable on such income is increased by "premium interest tax"³⁰ plus an "additional tax" (commonly referred to as a penalty tax) equal to 20% of the compensation required to be included in gross income. Generally speaking, an amount would

²⁹ This is discussed in more detail in Compton et al. (2009), at pp. 375-378.

³⁰ In-the-money options will not be subject to premium interest tax. Premium interest tax is computed only for the period from the time of vesting to the time that section 409A is breached. Since in-the-money options breach section 409A when granted (i.e., at the time of vesting (if the options are vested at the time granted) or prior to vesting), there is no period during which premium interest tax is computed.

have to be included in income with respect to a grant of in-the-money stock options in the year that the options vest *and* in every subsequent year to and including the year of exercise (to the extent not included in income in a previous year). The amount included in income (and the basis for the additional tax) is not specified in the statute or the final regulations issued to date under IRC section 409A. However, the proposed regulations indicate that the amount to be included is the intrinsic value of the option on the last day of the employee's taxation year (i.e., December 31) in which the option vests and any subsequent year in which a vested option remains unexercised, and, in the year of exercise, the actual value on the exercise date.³¹ The income inclusion and penalty tax apply regardless of when (or if) the options are ultimately exercised.³² In addition, in each year following the year in which an option vests, and until and including the year of exercise, there is potentially an additional income inclusion (and corresponding penalty tax) under section 409A depending on the value of the underlying shares on December 31 of (or the date that the options are exercised in) the subsequent year.³³ The consequences of section

³¹ Prop. Reg. 1.409A-4(b)(6), issued on December 5, 2008. Prior to the issuance of the proposed regulation, the IRS had issued Notice 2005-1 setting forth the IRS's initial guidance on the provision. Neither that notice nor the final regulations released on April 10, 2007 (applicable for taxation years beginning after December 21, 2008) addressed the calculation of the amount included in income under section 409A. Interim guidance in Notice 2006-100 (applicable to the 2005 and 2006 taxation years) provided that the intrinsic value of a vested stock option on the year-end of the employee (i.e., December 31) is the basis for the income inclusion, premium interest tax and additional tax, assuming that the options were not modified to avoid the application of section 409A. The preamble to the proposed regulation states in part: "The Treasury Department and the IRS recognize that the spread [i.e., intrinsic value] is less than the fair market value of the stock right, which is used for purposes of determining the amount taxable under other Code provisions ... However, because these types of stock rights typically will fail to comply with section 409A(a) in multiple years, a taxpayer who holds such a stock right generally will be required to include amounts in income under section 409A in more than one taxable year. Therefore, the Treasury Department and the IRS believe that it is more appropriate to use the spread for purposes of applying section 409A(a) to stock rights."

³² If the options expire unexercised, in other words, the employee's right to the deferred income is permanently lost, the employee is entitled to a deduction at that time equal to the amounts previously included in income under section 409A. However, there is no deduction or any penalty tax previously assessed.

³³ Consider the following simple example. Suppose that on December 31, 2009, an employee of XCo receives 30,000 employee stock options at a strike price of \$10/share. The options have a 10-year life and one-third of the options vest on December 31 of 2010, 2011, and 2012. Suppose that the shares have a fair market value on December 31, 2009 of \$12/share i.e., the options are granted in-the-money or, alternatively, the options may be backdated to an earlier date (say December 1, 2009) when the fair market value of the shares was \$10/share). Because the options were in-the-money on December 31, 2009, the actual grant date, they would be subject to tax under section 409A. Suppose that on December 31, 2010, the XCo shares are trading at \$14/share. On that date, 10,000 options vest i.e., are no longer subject to a substantial risk of forfeiture. Because the options were in-the-money on December 31, 2009, they would be subject to tax under section 409A. Consequently, the employee must include in gross income in 2010 the amount of \$40,000 [\$4/share x 10,000 shares], which would be subject to tax at the employee's marginal rates. In addition, the employee would have to pay an "additional tax" of \$8,000 (20% of \$40,000). No premium interest tax is payable (see note **Error! Bookmark not defined.**). Suppose further that on December 31, 2011, when a further 10,000 options vest, the fair market value of the shares of XCo is \$17/share. The employee would have to include in income in 2011 the amount of \$100,000 [\$7/share x 20,000 shares less \$40,000 (the amount included in 2010)]. This amount would be subject to tax at the employee's marginal rate and, in addition, the employee would have to pay an additional tax of \$20,000. Finally, suppose on December 31, 2012, when the final 10,000 options vest, the shares of XCo are trading at \$15/share. The employee would have to include in income for that year \$10,000 [\$5/share x 30,000 shares less \$140,000 (the aggregate amounts included in income in 2011 and 2012)] plus \$1,000 additional tax. In a subsequent year in which the options remain outstanding, if the shares of XCo are trading above \$15/share, the employee may be subject to further income inclusion and additional tax under section 409A. Finally, suppose in 2017, the employee exercises the options when the shares are trading at \$21/share (and on no previous December 31 had the trading price of XCo shares reached that amount), the employee

409A in and of itself are, in fact, so punitive that it is highly unlikely that US corporations and their employees would risk granting in-the-money options (or backdated options that appear to be at-the-money but are, on the actual grant date, in-the-money). Based on the standard model of tax evasion by Allingham and Sandmo (1972), where compliance is positively associated with the size of penalty if caught, it is reasonable to assume that IRC section 409A has all but eliminated the likelihood of backdating in the United States.³⁴ Canada could consider similarly increasing the tax penalty associated with backdating.

Third, as previously noted, in the United States there has been a wide-scale investigation by the SEC and Department of Justice into the stock option granting practices of US companies. Canada should follow suit. This should include at a minimum investigation by the requisite securities authorities and perhaps by the Toronto Stock Exchange (the rules of which prohibit the grant of in-the-money options). While such an investigation would be costly, the costs could, at least in part, be offset by the fines and, if the CRA reassesses based on the information that such investigations reveal, additional tax revenue.

6. CONCLUSION

The goal of this paper was to consider the effectiveness of two tax changes in Canada regarding the taxation of employee stock options in achieving their intended consequences as well as to consider any unintended consequences. We argue there is no convincing evidence that the changes were remotely successful in attaining the desired results. Further, we explain how the changes had the unintended consequence of rewarding backdating and promoting tax evasion. This exercise also suggests that personal income tax may have had the unintended effect of playing a role in employees' willingness to accept backdated options in Canada.

Our results raise an important policy question as to why employee stock options are treated in Canada essentially as an investment rather than as compensation (due to the deduction under paragraph 110(1)(d) of the Act), even when the options are exercised and sold at the same time. We suggest three possible policy actions that the Canadian and provincial governments can take to eliminate the tax preference and to curb backdating. The recommended actions would align the tax, regulatory, and enforcement environment in Canada with that of the United States.

Finally, the discussion presented here indicates that there is a need to empirically investigate the incidence of backdating among Canadian companies. No comprehensive study has been done on the extent to which backdating exists in Canada, as has been done in the United States. Is backdating a wide problem in Canadian financial markets or is it limited to only a handful of companies? With respect to tax policy, another angle to consider is how various changes to the

would be required to include in income \$330,000 less the aggregate amounts included in gross income under section 409A in previous years, plus additional tax at the rate of 20% on such amount.

³⁴ Prior to the introduction of IRC section 409A, other changes introduced in the United States had already reduced the propensity to backdate. Specifically, the SEC reporting regulations were changed in 2002 to reduce the reporting period for stock option grants to two days. A recent study by Heron and Lie (2007) shows that with the introduction of this new two-day reporting period, the return pattern associated with backdating is much weaker, while another study by the Heron and Lie (2009) shows the percent of unscheduled grants backdated or manipulated fell dramatically following the introduction of the two-day rule. The introduction of IRC section 409A may well prove to be the final nail in the coffin of stock option backdating in the United States.

Income Tax Act may have impacted the extent of backdating. For example, there may be increased evidence of backdating following the introduction in 1984 of paragraph 110(1)(d) or the extension of the deferral of the stock option benefit in 2000 to public company employees. Finally, we believe investigating backdating in Canada will provide results useful not only for Canada, but also for those interested in backdating in the United States.

References

- Ahmed, E., & Braithwaite, V. (2007). Higher education loans and tax evasion: A response to perceived unfairness. *Law & Policy*, 29(1), 121-136.
- Allingham, M. G., & Sandmo, A. (1972). Income tax evasion: A theoretical analysis'. *Journal of Public Economics*, 1, 323-338.
- Ayling, J., & Grabosky, P. (2006). Policing by command: Enhancing law enforcement capacity through coercion. *Law & Policy*, 28(4), 420-443.
- Carpenter, J., & Remmers, B. (2001). Executive stock option exercises and inside information. *The Journal of Business*, 74(4), 513-534.
- Compton, R. A. ., Sandler, D., & Tedds, L. M. (2009). Options backdating: A Canadian perspective. *Canadian Business Law Journal*, 47, 363-391.
- Department of Finance. (1984). *1984 Budget, Budget Plan*. Ottawa: Public Works and Government Services.
- Department of Finance. (2000). *2000 Budget, Budget Plan*. Ottawa: Public Works and Government Services.
- Department of Finance. (2010). *2010 Budget, Budget Plan*. Ottawa: Public Works and Government Services.
- Donohue, J. J., & Levitt, S. (2001). The impact of legalized abortion on crime. *The Quarterly Journal of Economics*, CXVI(2), 379-420.
- Finnie, R. (2001). The brain drain: Myth and reality - what it is and what should be done. *Choices*, 7(6), 3-29.
- Fishman, S. (1991). Grand delusions: The unintended consequences of Vichy France's prisoner of war propaganda. *Journal of Contemporary History*, 26(2), 229-254.
- Frank, J., & Bélair, É. (1999). *South of the border: Graduates from the class of'95 who moved to the united states* (Cat. No. 81-587-XPB ed.). Ottawa: Human Resources Development Canada.
- Fried, J. M. (2008). Option backdating and its implications. *Washington and Lee Law Review*, 65, 853-886.
- Hall, B. J., & Liebman, J. B. (2000). The taxation of executive compensation. *Tax Policy and the Economy*, 14, 1-44.

- Hall, B. J., & Murphy, K. J. (2003). The trouble with stock options. *The Journal of Economic Perspectives*, 17(3), 49-70.
- Health, C., Huddart, S., & Lang, M. (1999). Psychological factors and stock option exercise. *The Quarterly Journal of Economics*, 114(2), 601-627.
- Helliwell, J. F., & Helliwell, D. F. (2000). Tracking UBC graduates: Trends and explanations. *Isuma: Canadian Journal of Policy Research*, 1(1), 101-110.
- Heron, R. A., & Lie, E. (2007). Does backdating explain the stock price pattern around executive stock option grants? *Journal of Financial Economics*, 83(2), 271-295.
- Heron, R. A., & Lie, E. (2009). What fraction of stock option grants to top executives have been backdated or manipulated? *Management Science*, 4(55), 513-525.
- Heron, R. A., Lie, E., & Perry, T. (2007). On the use (and abuse) of stock option grants. *Financial Analysts Journal*, 63(3), 17-27.
- Ittner, C., Lambert, R., & Larcker, D. (2003). The structure and performance consequences of equity grants to employees of new economy firms. *Journal of Accounting and Economics*, 34(1), 89-127.
- Joulfaian, D. (2000). Corporate income tax evasion and managerial preferences. *The Review of Economics and Statistics*, 82(4), 698-701.
- Klassen, K. J., & Mawani, A. (2000). The impact of financial and tax reporting incentives on option grants to Canadian CEOs. *Contemporary Accounting Research*, 17(2), 227-262.
- Lie, E. (2005). On the timing of CEO stock option awards. *Management Science*, 51(5), 802-812.
- Linck, J., Netter, J., & Yang, T. (2009). The effects and unintended consequences of the Sarbanes-Oxley act on the supply and demand for directors. *The Review of Financial Studies*, 22(8), 3287-3328.
- Luffman, J. (2003). Taking stock of equity compensation. *Perspectives on Labour and Income*, 4(3), 16-23.
- Mawani, A. (2003). Tax deductibility of employee stock options. *Canadian Tax Journal*, 51(3), 1230-1258.
- Merton, R. K. (1936). The unanticipated consequences of purposive social action. *American Sociological Review*, 1(6), 894-904.

- Middlemiss, J. (2010, March 11). Siskinds research spurs options back-dating action: Canadian public companies examine their practices. *The National Post*. Retrieved from <http://www.ottawacitizen.com/business/Siskinds+research+spurs+options+back+dating+action/2668927/story.html>
- Narayanan, M. P., Schipani, C. A., & Seyhun, H. N. (2007). The economic impact of backdating of executive stock options. *Michigan Law Review*, *105*(8), 1597-1641.
- Narayanan, M. P., & Seyhun, H. N. (2008). The dating game: Do managers designate option grant dates to increase their compensation? *Review of Financial Studies*, *21*(5), 1907-1945.
- Ofek, E., & Yermack, D. (2000). Taking stock: Equity-based compensation and the evolution of managerial ownership. *The Journal of Finance*, *55*(3), 1367-1384.
- Press, K. (1999, September). Editorial: Stock in Trade. *Benefits Canada*, *23*, 7.
- Sandler, D. (2001). The tax treatment of employee stock options: Generous to a fault. *Canadian Tax Journal*, *49*(2), 259-319.
- Sandler, D. (2004). *Venture capital and tax incentives: A comparative study of Canada and the United States*. Toronto: Canadian Tax Foundation.
- Wagner, D. (2000). Do tax differences cause the brain drain? *Policy Options*, *December*, 33-41.
- Walker, D. I. (2007). Unpacking backdating: Economic analysis and observations on the stock option scandal. *Boston University Law Review*, *87*(3), 561-623.
- Waller, V. (2007). The challenge of institutional integrity in responsive regulation: Field inspections by the Australian taxation office. *Law & Policy*, *29*(1), 67-83.
- Zarifa, D., & Walters, D. (2008). Revisiting Canada's brain drain: Evidence from the 2000 cohort of Canadian university graduates. *Canadian Public Policy*, *34*(3), 305-319.

Table 1: Summary of Tax Implications, Example 1-3

	Example 1			Example 2			Example 3		
	Base Case Treatment, No Deduction or Deferral			Treatment with the Deduction			Treatment with the Deduction & Deferral		
	At-the-Money Backdated	At-the-Money At Grant	In-the-Money	At-the-Money Backdated	At-the-Money At Grant	In-the-Money	At-the-Money Backdated	At-the-Money At Grant	In-the-Money
# of Options	5	5	5	5	5	5	5	5	5
Exercise Price	\$10.00	\$15.00	\$10.00	\$10.00	\$15.00	\$10.00	\$10.00	\$15.00	\$10.00
FMV	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00
Immediate Tax Liability	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	At Exercise/Sale			At Exercise/Sale			At Exercise		
FMV at Exercise & Sale Price	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00
Total Income Benefit	\$50.00	\$25.00	\$50.00	\$50.00	\$25.00	\$50.00	\$50.00	\$25.00	\$50.00
Deduction	\$0.00	\$0.00	\$0.00	\$25.00	\$12.50	\$0.00	\$0.00	\$0.00	\$0.00
Taxable income benefit	\$50.00	\$25.00	\$50.00	\$25.00	\$12.50	\$50.00	\$50.00	\$25.00	\$50.00
Income Benefit Deferral							\$50.00	\$25.00	\$0.00
Tax Owng	\$14.50	\$7.25	\$14.50	\$7.25	\$3.63	\$14.50	\$0.00	\$0.00	\$14.50
Net employee benefit	\$35.50	\$17.75	\$35.50	\$42.75	\$21.38	\$35.50			\$35.50
							At Sale		
Sale Price							\$25.00	\$25.00	\$25.00
Gain on Shares Taxable Gain							\$25.00	\$25.00	\$25.00
on Shares Tax Owng on Gain							\$12.50	\$12.50	\$12.50
Deferred Income Deduction							\$3.63	\$3.63	\$3.63
							\$50.00	\$25.00	\$0.00
							\$25.00	\$12.50	\$0.00
Taxable Income Benefit at Sale							\$25.00	\$12.50	\$0.00
Tax Owng on Income Benefit							\$7.25	\$3.63	
Total Tax Owng at Sale							\$10.88	\$7.25	\$3.63