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FEATURED PERSPECTIVES

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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 behavior. 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 people often respond to incentives in unexpected, perverse, and costly ways. By overlooking these unintended consequences, during both the design phase and evaluation phase, policymakers are left with an incomplete picture of the effect of their intervention.

Sociologist Robert K. Merton (1936) popularized the concept of unintended consequences, and it has since become widely studied across numerous disciplines, including law, economics, and history (for example, Ahmed and Braithwaite, 2007; Ayling and Grabosky, 2006; Donohue and Levitt, 2001; Fishman, 1991; Linck, Netter, and Yang, 2009; and Waller, 2007). At its most basic, the concept of unintended consequences means 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 often they are negative and costly. This article addresses the issue of how government policy in Canada — specifically, the tax incentives accorded to employee stock options — has had the unexpected consequence of rewarding fraudulent behavior (notably backdating) 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. 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] Further, in 2000 the federal government introduced a deferral that allows public company employees to defer the inclusion of the

[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

(Footnote continued on next page.)

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 have potentially 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 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 (that is, backdating) is an act of tax evasion in Canada. This paper demonstrates a possible link between both the 1984 and 2000 tax changes, changes that were implemented by Canada to align the incentives of employees with those of 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 I provides a brief discussion of employee stock options and backdating;
- Section II discusses the 1984 and the 2000 federal tax changes, the reasoning behind them, and their perceived effectiveness;
- Section III details the unintended consequences of these changes, notably how they reward backdating;
- Section IV discusses the implications of the unintended consequences, notably the relationship between backdating and tax evasion, and recommends some policy actions; and
- Section V concludes and offers suggestions for future research.

I. Employee Stock Options and Backdating

Generally speaking, a stock option is a financial instrument that provides the holder with the right, but not the obligation, to buy or sell stock of a corporation within a stated period at a specified price, commonly referred to as the strike price. There are many 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 under 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 prespecified 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, for example 10 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. Lastly, 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 (for example, Heron and Lie, 2009; Lie, 2005; Narayanan and Seyhun, 2008) and legal literature (for example, Fried, 2008; Narayanan, Schipani, and Seyhun, 2007; Walker, 2007), as well as recently in the Canadian legal literature (Compton, Sandler, and 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 Compton et al. (2009), 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 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

agreement when the option is first granted. For those unfamiliar with executive stock options, the characteristics and workings of executive stock options are detailed in Section II of this article.

[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.

[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 three to five 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. Often the terms of the stock option provide for partial vesting over the vesting period (for example, one-quarter of the options vest on each anniversary of the grant over a four-year vesting period).

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 because of its suspected prevalence. U.S. research has shown that backdating was quite prevalent (for example, Lie, 2005; Heron and Lie, 2007). Some estimates indicate that approximately 20 percent of executive stock option grants appear to have been backdated (Heron, Lie, and Perry, 2007, p. 22), and at least 30 percent of companies that granted options to executives appear to have manipulated one or more of their grants (Heron and Lie, 2009). Also, close to 200 companies (some Canadian) have been investigated by the U.S. Securities and Exchange Commission and the U.S. Justice Department (Collins, Gong, and Li, 2005, 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 U.S. investigations, several Canadian companies have also reviewed their option dating practices and found inappropriate pricing practices (Middlemiss, 2010).

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Because 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 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 behind 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.

II. Employee Stock Options in Canada

Compared with that of 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 have shared the same general tax treatment in two respects. First, unlike other employment income (for example, 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 on 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, on the sale of the stock acquired under 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.

[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 now stands.

[5]Employee stock options can also be issued by a Canadian-controlled private corporation (CCPC), and the taxation history

(Footnote continued on next page.)

A. 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 the growth of their company at the micro level, at a macro or economywide 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 with the U.S.

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 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 effective rate as capital gains (and thus at a lower rate than that applicable to ordinary income).

At first glance, this generous treatment of income derived from the exercise of employee stock options appears to have clearly encouraged their use in lieu of ordinary employment compensation (salary and bonuses). Available data indicate that in 1991, 33 percent of the largest 100 Canadian public corporations granted stock options to their executives (Klassen and Mawani, 2000), while by 1999, this number had increased to 97 percent (Press, 1999) and by 2000 was 100 percent (Hall and Murphy, 2003). Further, according to the Workplace and Employee Survey, about 10 percent of Canadian employees in 1999 worked for an employer that had a stock purchase plan, with the highest incidence (33 percent) 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 compared with 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 nonqualified stock option (NSO), which accounts for more than 95 percent of all employee stock options in the United States (Hall and 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 an expense even though the company has not incurred any out of pocket expense (Malwani, 2003, p. 1231).[10] Canadian companies are not permitted such a deduction. Third,

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and treatment of these options differ 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]Before 1984 a deduction was only applicable to stock options granted by CCPCs.

[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 in note 7 *supra*, are met), where the right to ''cash settle'' the option belongs to the employee; *see* the discussion in paragraph 11 in CRA Income Tax Interpretation Bulletin IT-113R4 (*available at* 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, Minister of Finance Jim Flaherty 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 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, pp. 353-354).

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

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

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 employees working harder and more innovatively. Oyer and Scott (2005) demonstrate that option awards to nonexecutive 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.

B. 2000 Tax Changes

The next major changes in the taxation of options in Canada were the 2000 tax changes, which originally were intended to address the brain drain Canada was believed to be experiencing during the 1990s. 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 policymakers, as it was the loss of knowledge workers (medical doctors, scientists, professors, high-tech workers, and so forth) 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 experiencing the greatest net migration.

One of the sectors targeted was the ICT sector. It was widely recognized that many high-tech workers, particularly those employed at start-up companies, accept lower salaries and benefits in exchange for employee stock options as part of their total compensation packages.[12] Given the belief of policymakers 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 treatment of employee stock options. These changes were designed to make their tax treatment similar to or more favorable than in the United States.[13]

Making Canada's tax system more competitive with the U.S. tax system was at the time considered 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 C $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 could be deferred until the year the shares were sold. The deferral, however, was limited to the first C $100,000[14] worth of options per year of vesting. An individual was also entitled to the deferral only if he was also entitled to the deduction under paragraph 110(1)(d),[15] which meant that the strike

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

[12]For more discussion 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 its 2000 provincial budget. The government of Ontario introduced a tax exemption for employees involved in research and development for the first C $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. Qualifying individuals were 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 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 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:

- the recipient is a Canadian resident;
- the underlying shares are traded on a Canadian or foreign prescribed stock exchange; and
- the individual is entitled to the deduction under paragraph 110(1)(d) of the ITA.

price was at least equal to the fair market value of the underlying share on the day the option was granted.[16]

Making Canada's system more competitive with the U.S. was considered a powerful policy instrument for reducing the flight of knowledge workers.

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 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 with 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 percent.[18] This benefit is only applicable for the first US $100,000 worth of options.[19] Also, 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. While the 2000 changes appeared to create similar conditions in Canada to ISO treatment in the United States, the key difference is that a U.S. 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). Because of the U.S. 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, less than 5 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.

Regarding the ability of the tax regime to address the flight of personnel to the United States, there are two keys issues to consider. First, Sandler (2001, 2004) and Wagner (2000) both indicate that there is little evidence to support the belief that different tax rates are a primary reason for migration. Wagner (2000) demonstrates that if Canada adopted the same tax rates, tax deduction, and tax rules as the U.S., ''Canada's southward migration drain would have declined by only 10 per cent'' (p. 40). Also, Frank and Bélair (1999) and Helliwell and Helliwell (2000) report survey evidence suggesting that job opportunities and higher salaries were cited most frequently as key determinants, while taxes ranked much lower.

Second, the deferral is only of value if the individuals exercise their options and then hold the underlying shares beyond the tax year in which the options were exercised. According to existing research (Carpenter and Remmers, 2001; Health, Huddart, and Lang, 1999; Ofek and Yermack, 2000), most employees (80 to 90 percent) 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.[20]

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

[17]Ironically, the high-tech community also expressed support for the recently announced (March 4, 2010) repeal of the deferral.

[18]Before 2003 the long-term capital gain rate was generally 20 percent. In 2003 the rate was reduced to 5 percent for individuals in the lowest two income brackets and 15 percent for all others. In 2008 the long-term capital gain rate for individuals in the lowest two tax brackets (currently 5 percent and 15 percent) was further reduced to 0 percent. These reduced rates are effective through 2010.

[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 (that is, in the year of vesting) cannot exceed US $100,000.

[20]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 because of 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

(Footnote continued on next page.)

From an individual tax 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, Sandler noted (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.

C. 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 effect 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.[21] As noted by Compton et al. (2009), not only has the use of stock options increased exponentially over the last 20 years, but stock options have become the 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 tech bubble burst, not only rendering the shares of many companies worthless along with associated stock options, but also resulting in bankruptcy and layoffs.

III. 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 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 on 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.

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.[22] The grant is dated as having been made on October 1 when the share price was C $10, but in reality was granted November 30 when the share price was C $15.[23] We assume that the individual faces a marginal tax rate of 29 percent, which is 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.

A. 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 C $20. If the option is

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 Member of Parliament Gary Lunn, and is being faced by numerous Canadian employees of Nortel. To avoid this situation in the future, in addition to repealing the deferral as discussed in note 16 *supra*, on March 4, 2010, the federal government announced it was introducing special tax relief for those individuals who had previously taken 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 that is equal to the proceeds on the sale rather than the tax owing on the deferred income (Department of Finance, 2010, p. 357). For example, assume an individual exercised 1,000 options with a strike price of C $10 when the stock was trading at C $110 per share and elected to defer the income inclusion of C $100,000 until the year of sale. When the individual ultimately sells the shares, they are worth only C $1, resulting in proceeds of sale of C $1,000. Instead of paying the C $14,500 tax owing on the C $100,000 deferred income benefit (assuming an effective tax rate of 29 percent and that the individual can claim the deduction under paragraph 110(1)(d)), the individual could pay the special tax equal to the proceeds to disposition of C $1,000.

[21]Indeed, some professions supposedly affected by the brain drain — such as medical doctors and professors — do not benefit from stock options plans at all.

[22]It would be quite rare for an option grant to only include so few shares, 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.

[23]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 lookback window.

''successfully'' reported as an at-the-money grant awarded on October 1 with a strike price of C $10, the income benefit subject to tax is calculated as the difference between the fair market value of the shares on the date of exercise (C $20) and the strike price (C $10) multiplied by the number of shares awarded (5), which is C $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 C $14.50 (29 percent of the tax benefit valued at C $50) and the net after-tax benefit to the employee is C $35.50. This is reported in the first column of the table.

If instead the option had been properly dated as November 30 and had an associated strike price of C $15 (the fair market value on that date), the individual would have reported an income benefit of C $25 resulting in a tax liability of C $7.25 and a net after-tax benefit to the employee of C $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 C $10 rather than C $15) and not due to any differences in the tax treatment of these two options.

The third scenario is when 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 because of any differences in the tax treatment of options depending on their characteristics. Referring back to the discussion in Section II, this was the tax regime in place in Canada before 1984 and is the tax regime in place in the United States for all NSO options.[24]

B. Example 2

Now consider the implications of the paragraph 110(1)(d) deduction. Recall from Section II that the 1984 change means that only one-half of the option benefit is included in income for tax purposes regardless of how long 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 C $10, the income benefit subject to tax is calculated as the difference between the fair market value of the shares on the date of exercise (C $20) and the strike price (C $10) multiplied by the number of options awarded, which is C $50. The individual can claim a deduction under paragraph 110(1)(d), which reduces the income inclusion by half to C $25. The individual faces a tax liability of C $7.25 (29 percent of C $25) and the net after-tax benefit to the employee is C $42.75. This is reported in the fourth column of the table.

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

The third scenario is when 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 C $7.25 more than reporting the option as being in the money and C $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 tax liability by misreporting the option. The individual benefits from backdating not only from the discount but also from the preferential tax regime.

C. Example 3

In the third and final example, we consider the effect of the deferral introduced in 2000. To do so we change the sale date[25] of the shares to sometime after the exercise date (to a subsequent tax year), and the sale price is assumed to be C $25 per share. 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 C $100,000 worth of stock options per year of vesting (based on the fair market value of the underlying stock when the options were

[24]At least the tax treatment of NSOs before late 2004. Following the corporate and accounting scandals such as those involving Enron, Tyco, and WorldCom, the American Jobs Creation Act of 2004 added section 409A to the code, which radically changed the taxation of deferred compensation, including discounted (and backdated) stock options. Section 409A is discussed in more detail in Section IV of this article.

[25]When the individual sells the shares acquired through exercise.

Table 1. Summary of Tax Implications, Examples 1-3

	Example 1 Base Case Treatment, No Deduction or Deferral			Example 2 Treatment With the Deduction			Example 3 Treatment With the Deduction and Deferral		
	At the Money Backdated	At the Money	In the Money	At the Money Backdated	At the Money	In the Money	At the Money Backdated	At the Money	In the Money
	At Grant			At Grant			At Grant		
Number 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	$-	$-	$-	$-	$-	$-	$-	$-	$-
	At Exercise/Sale			At Exercise/Sale			At Exercise		
FMV at Exercise and 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	$-	$-	$-	$25.00	$12.50	$-	$-	$-	$-
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	$-
Tax Owing	**$14.50**	**$7.25**	**$14.50**	**$7.25**	**$3.63**	**$14.50**	$-	$-	**$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							$25.00	$25.00	$25.00
Taxable Gain on Shares							$12.50	$12.50	$12.50
Tax Owing on Gain							$3.63	$3.63	$3.63
Deferred Income							$50.00	$25.00	$-
Deduction							$25.00	$12.50	$-
Taxable Income Benefit at Sale							$25.00	$12.50	$-
Tax Owing on Income Benefit							$7.25	$14.50	
Total Tax Owing at Sale							**$10.88**	**$18.13**	**$3.63**

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 one-fifth (or one 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 C $100,000 limit by C $10, the purported fair market value of the underlying stock when the options were granted. Because 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 C $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 C $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 (C $25) and the fair market value of the shares on the date of exercise (C $20) for a gain amounting to C $25 (C $5 times 5 shares). As noted in Section II, the taxable portion of the capital gain is currently calculated as one-half of the capital gain (C $12.50), which is taxed at the individual's marginal tax rate of 29 percent. As a result, the tax owing on the gain is C $3.63. The individual must include the deferred income benefit of C $50 in taxable income and can claim the 50 percent deduction under paragraph 110(1)(d) of the ITA, resulting in tax owing of C $7.25 on the taxable income benefit of C $25. The total tax owing in this case is C $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. Because 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 C $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 C $25, claims the deduction which reduces the income inclusion to C $12.50 (half of C $25), resulting in a tax liability of C $3.63 (29 percent of C $12.50). The total tax owing in this case is C $7.25.

Finally, in the case when 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 C $50 and pay tax amounting to C $14.50. Because 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 C $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 because of 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 (that is, the employee claims the deferral), the individual is underpaying taxes in the exercise year by C $14.50. Also, in the sale year when the stock option benefit is recognized, the employee is improperly claiming the deduction under paragraph 110(1)(d) and underpaying taxes on the income benefit in the amount of C $7.25.

IV. Implications

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 who 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 article.

This is not to say that there are no repercussions to the individual who engages in this reporting behavior. In Canada, employees who receive and improperly report backdated stock options may be reassessed by the Canada Revenue Agency 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. The reassessments would also include interest, compounded daily at a relatively high rate. Further, 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.[26]

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, for the CRA to detect such behavior, it 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 behavior. 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 companies to audit or investigate.[27] In contrast, the significant number of U.S. companies that have been investigated by the SEC is related directly to academic research based on readily available and easily usable databases (such as the Thomson Financial Insider Filing and Standard & Poor's ExecuComp databases).

There have been very few companies investigated by securities agencies in Canada for backdating behavior.

Only one Canadian company has undergone an investigation by the SEC and the Ontario Securities Commission that resulted in information the CRA used to reassess some employees that exercised suspicious stock option awards. Also, 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). This pales in comparison to the situation in the United States, where more than 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 behavior. The regulation and taxation of employee stock options is an area in which Canada could stand to take a page out of the U.S. 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 institute holding period requirements similar to those 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, p. 356). However, the reasons are unrelated to backdating. Instead, the deferral was eliminated because of the financial difficulties that arise when the stock associated with the exercised shares decreases in value (discussed in more detail in note 20 *supra*).

Second, the penalties that apply in Canada when an employee is 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 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 backdated options that appear to be not-in-the-money options) are covered 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 the income is increased by ''premium interest tax''[28] plus an ''additional tax'' (commonly referred to as a penalty tax) equal to 20 percent of the compensation required to be included in gross income. Generally speaking, an amount would

[26]The implications of this could be even further reaching because it has previously been found (Joulfaian, 2000) that noncompliant corporations are three times more likely to be managed by executives who have evaded personal taxes.

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

[28]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. Because in-the-money options breach section 409A when granted — that is, at the time of vesting (if the options are vested at the time granted) or before vesting — there is no period during which premium interest tax is computed.

have to be included in income for a grant of in-the-money stock options in the year that the options vest *and* in every subsequent year up 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 tax year (that is, 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.[29] The income inclusion and penalty tax apply regardless of when (or if) the options are ultimately exercised.[30] Also, in each year following the year in which an option vests, 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.[31] The consequences of section 409A in and of themselves are so punitive that it is highly unlikely that U.S. 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), in which 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.[32] Canada could consider similarly increasing the tax penalty associated with backdating.

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[29]Prop. reg. 1.409A-4(b)(6), issued on December 5, 2008. Before 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 tax 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 tax years) provided that the intrinsic value of a vested stock option on the year-end of the employee (that is, 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 [that is, 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.

[30]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 for any penalty tax previously assessed.

[31]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 US $10 per 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 US $12 per

(Footnote continued in next column.)

share. That is, the options are granted in the money, or the options may be backdated to an earlier date (say December 1, 2009) when the fair market value of the shares was US $10 per 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 US $14 per share. On that date, 10,000 options vest, that is, 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 US $40,000 (US $4 per share x 10,000 shares), which would be subject to tax at the employee's marginal rates. Also, the employee would have to pay an additional tax of US $8,000 (20 percent of US $40,000). No premium interest tax is payable. (See *supra* note 28.) Suppose further that on December 31, 2011, when a further 10,000 options vest, the fair market value of the shares of XCo is US $17 per share. The employee would have to include in income in 2011 the amount of US $100,000 (US $7 per share x 20,000 shares less US $40,000 (the amount included in 2010)). This amount would be subject to tax at the employee's marginal rate, and the employee would have to pay an additional tax of US $20,000. Finally, suppose on December 31, 2012, when the final 10,000 options vest, the shares of XCo are trading at US $15 per share. The employee would have to include in income for that year US $10,000 (US $5 per share x 30,000 shares less US $140,000 (the aggregate amounts included in income in 2011 and 2012)) plus US $1,000 additional tax. In a subsequent year in which the options remain outstanding, if the shares of XCo are trading above US $15 per 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 US $21 per share (and on no previous December 31 had the trading price of XCo shares reached that amount), the employee would be required to include in income US $330,000 less the aggregate amounts included in gross income under section 409A in previous years, plus additional tax at the rate of 20 percent on such amount.

[32]Before the introduction of IRC section 409A, other changes introduced in the United States had already reduced the propensity to backdate. 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 Heron and Lie (2009) shows that 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.

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 U.S. 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 granting of in-the-money options). While such an investigation would be costly, the costs could at least partly be offset by the fines and, if the CRA reassesses based on the information that the investigations reveal, additional tax revenue.

V. 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 (because of the deduction under paragraph 110(1)(d) of the ITA), 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 widespread problem in Canadian financial markets or is it limited to only a handful of companies? Regarding tax policy, another angle to consider is how various changes to the ITA may have affected 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.

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