Business Organization and Taxation of High-Income Professionals: Evidence from Canadian Doctors

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Preliminary

Abstract

Small businesses including high-income professionals choose to operate as corporations or pass-through entities such as sole proprietorship on the basis of non-tax and tax considerations. Incorporation may offer businesses lower effective tax rates on income earned and distributed to the owner-manager, as well as opportunities to defer taxes to the future. We show how taxes affect labor and investment decisions over the life cycle and derive a "sufficient statistics" formula for the impact of incorporation on social welfare. Using longitudinal administrative tax data from 2001 to 2017, we study the businesses of Canadian physicians and dentists. We identify the causal effects of taxes using a triple-difference design that exploits a 2006 reform that facilitated incorporation by doctors in Ontario. Incorporation rates in the treated group rose sharply after the reform compared to a matched control group of doctors in other provinces and business owners in other industries. Employment and business investment rose. Combined personal-plus-corporate incomes rose initially following the reform and then fell gradually for doctors in their 50s and 60s. Effective tax rates fell marginally, mainly due to the shifting of income to family members. Doctors accumulated substantial retained earnings inside their corporations, suggesting they are used as deferred-tax retirement savings vehicles. Taken together, these results are consistent with both tax avoidance through a corporation and real response via business expansion after incorporation.

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1 Introduction

Small businesses can choose from a range of organizational forms including sole-proprietorship, partnerships, corporations, and others depending on the legal regime in place at a given time and country. These decisions are shaped by both non-tax considerations (limited liability, regulatory environment, administrative and accounting costs, and legal standing) and tax implications (the relationship between individual and corporate tax rates, deductions and base for both, capital gains tax rates, special tax regimes and other tax incentives, and tax enforcement). Importantly, analyzing the behavior of (especially but not just, small) businesses should not be done while abstracting from their owners. In fact, the line between business and individual considerations is often blurry or non-existent, especially for closely-held businesses, with business activity potentially mixed with personal consumption and saving objectives of the owners (see e.g., Alstadsæter, Kopczuk and Telle, 2014; Kopczuk and Zwick, 2020; Leite, 2024). Smith et al. (2019) show that the growth of pass-through businesses (partnerships and corporations subject to individual income taxation) in the United States since the 1990s has been the driving force behind the growth of income inequality. The compositional change in organizational forms of business activities that correspond to it has been massive (Clarke and Kopczuk, 2017) and, yet, poorly understood.

Incorporation offers owner-managers flexibility about the timing of distributions from the firm and so, in some cases, the tax advantages that flow from deferral of tax liabilities. Tax deferral through small business corporations may be advantageous if it lowers the user cost of capital for reinvested earnings. If income deferred for tax purposes is eventually taxed at the same tax rate, however long in the future, then the present value of taxes saved through deferral will be zero—an idea known as the "New View of Dividend Taxation" (Auerbach, 1979). But the New View rests on strong assumptions about the choices facing the firm and the effectiveness of the tax system in controlling tax avoidance. If deferral leads to long-run tax advantages, it raises obvious concerns about the loss of tax revenues and the horizontal inequity in the treatment of business owners and other high-income earners who cannot adopt the corporate form.

Tax deferral also offers incorporated taxpayers opportunities to engage in intertemporal shifting in response to tax reforms (Saez, Slemrod and Giertz, 2012). One prominent example is precisely an income shifting between individual and corporate tax base that is possible by choosing appropriate organizational form, pursuing incorporation, retaining earnings, reclassifying wages as profits, and various forms of tax avoidance (see Kopczuk, 2023, for discussion). Recent interest in the extent of tax evasion at the top of the distribution has also

focused on closely-held businesses that tax authorities have difficulty seeing through (Guyton et al., 2021). Finally, different countries have different legal and tax environments and, as the result, business income can be taxed predominantly by corporate taxation, as in Canada and United Kingdom, or have a half or more of it subject to individual income taxation, as in the United States, Germany and Japan (Clarke and Kopczuk 2017; Joint Committee on Taxation 2013). Hence, these organizational issues are central to understanding behavioral responses to taxation; the extent, evolution and cross-country comparability of inequality; tax avoidance; and policy actions motivated or implied by all of these.

In order to evaluate the effects of incorporation by high-income professionals, we must know the long-run effective tax rate paid on income that is deferred from current taxation, and the changes in economic activity that result from it. In this paper, we show that the welfare costs of tax deferral can be estimated, to a first-order approxiamtion, by measuring the long-run effects of deferral on government revenue alone, i.e. the "fiscal externality" from tax deferral. Public finance economists have long understood that the marginal excess burden of a tax is, under fairly general conditions, equal to its marginal effect on government revenue through behavioral channels. Using this idea, Hendren (2016) and Hendren and Sprung-Keyser (2019) have proposed simple rules for evaluating the welfare impacts of a wide variety of policies based on a minimal set of elasticities and tax–transfer parameters. More recently, Lee et al. (2019) have proposed estimating the deadweight loss of unemployment insurance policies by measuring their fiscal externalities in a reduced form way. We show how these insights can be applied to evaluating tax avoidance through incorporation and deferral, even in complex, dynamic environments.

In this paper, we apply our welfare framework to assess real and tax implications of incorporation by Canadian doctors. We exploit the 2006 reform in Ontario which allowed physicians' family members to own shares in these businesses. We leverage administrative datasets that merge individual tax returns with ownership information on both incorporated and unincorporated businesses, allowing us to trace their individual and businesses incomes for over 12 years following the reform. The Canadian tax system has a lower business tax rate for small businesses coupled with corporate tax integration, which nevertheless creates significant opportunities for tax planning through a corporation (Wolfson et al., 2016; Smart, 2021). Since the administrative data links tax records of individuals with their family members and businesses that they own, we can comprehensively observe household income (important for understanding income shifting within a family), income from all sources including that retained in closely held businesses, tax liability including individual income taxes, capital gains taxation, business-side taxation, and some aspects of real business activ-

ities (i.e., employment and capital investment). This rich data environment is crucial in the context where physicians can incorporate and represent income that was previously reported as individual professional income, but now gives rise to business revenue and profits instead.

We study physicians in Canada for the following reasons. First, it is a specific example of high-income professionals of the kind that played an important role for growing inequality (Smith et al., 2019; Gottlieb et al., 2023). Second, this is a group known to respond to tax incentives on the incorporation margin in some other countries (Romanov, 2006). These two reasons make it a potentially fruitful area for studying behavioral responses in an important and well-defined context with required data.[1]

To estimate the causal impacts of the reform, we use a triple-difference design, where we compare the outcomes of physicians in Ontario with the outcomes of other high-income professionals in Ontario, and make the same comparisons in the control provinces. We find that the reform substantially increased the rate of incorporation by physicians. Subsequently, we find significant changes in their overall taxable income and effective tax rates, which reflect behavioral responses beyond a simple reallocation, such as business expansion (discussed in Section 4). In the next sections, we describe first institutions governing professional corporations in Canada, and then our data, outcome variables, and empirical strategy.

2 Institutional Details

2.1 Professional corporations

Businesses in Canada may be organized as corporations or operate in unincorporated form as sole proprietorship or partnership. For regulated professions, including doctors, lawyers, and others, access to the corporate form has traditionally been restricted in Canada, but regulatory reforms over the past 20 years have liberalized these rules. As in the United States (Gottlieb et al., 2020), doctors comprise a substantial minority of taxpayers in the top one percent of incomes. But six out of ten Canadian provinces did not permit medical corporations at all before 1996 and, where they were permitted, management of and share ownership in them has traditionally been restricted to licensed physicians. These rules have

[1]This context is also tied with the political economy of public expenditures: while the Canadian supply of health care is to a large extent private, spending is predominantly public and policy-makers choose to partially compensate physicians through tax breaks, with implications for the true fiscal cost and industrial organization of this important sector. However, we can abstract from these considerations by comparing across provinces and providing corroborating evidence for dentists who are not subject to the same considerations.

been gradually liberalized across the country and, by 2010, all provinces permitted family members of physicians to own shares. Assigning shares to family members has the key advantage for tax planning that we discuss in detail in the next section.

In Ontario, the largest province, doctors and dentists were first permitted to incorporate their practices in 2001. The extension of non-voting ownership rights to family members (spouses, children and parents of doctors) was enacted in 2006 as part of collective negotiations on compensation between doctors and the provincial medicare plan (Nielsen and Sweetman, 2018). The 2006 reform also provided regulatory guidance to professionals and their tax advisers on how to structure their corporate entities.[2]

The data suggest that the 2006 reform led to a fundamental change in organizational decisions. The corporate form was relatively unpopular until the 2006 reform permitting shareholding by family members, and then rose steadily for younger cohorts. Cohorts receiving medical degrees before 1970 (and therefore nearing retirement at the reform) responded comparatively little. There is a clear life-cycle pattern to incorporation among later cohorts. Many physicians pursue post-graduate training in hospitals after graduation and receive salaries, leaving few opportunities for tax planning through corporations. The rise in incorporation occurs later in the life cycle, as physicians transition towards private practice and fee-for-service payment systems.

By contrast, physicians in British Columbia have been allowed to give non-voting shares to their family members since the 1991 reform that permitted incorporation. Therefore, physicians in British Columbia serve as a natural control group to physicians in Ontario. On the other hand, a reform similar to the one in Ontario was implemented in 2010 Alberta and in 2007 Quebec; physicians in Alberta and Quebec were allowed to give shares of their clinics after the reform. For this reason, we drop physicians in Alberta and Quebec from our analysis and plan to use them as separate treated groups in the future. Furthermore, a similar reform was implemented in 2006 Ontario for dentists; since the reform, they are allowed to give shares to their family members. For now, we include them as part of the treated group, but we plan to explore the differences between physicians and dentists, as the latter group's service fee system is not regulated by the government.

[2]While doctors were in most provinces the first regulated profession to benefit from these reforms, the same treatment is now extended to lawyers, accountants, and engineers in all provinces.

2.2 Tax rules

Unincorporated businesses by definition receive flow-through tax treatment; that is, business income flows through to owners as personal income and, with exceptions noted below, is fully taxed on accrual as ordinary income. Incorporated business income, on the other hand, is subject to corporate taxation, and distributions to owners are taxed again at the personal level.[3] However, through the Small Business Deduction (SBD), Canadian-controlled private corporations (CCPCs) with assets less than $15 million are subject to corporation tax at substantially reduced rates, on active business incomes up to $500,000 annually.[4] While tax rates vary by province of corporate residence, the statutory tax rate for small CCPCs averaged 12 percent in 2020, compared to an average top personal marginal tax rate of 53 percent. (In contrast, large corporations pay the general corporate tax rate, which averages 26 percent across the provinces.[5]) The gap between top personal and small business corporate tax rates has widened in recent years, as federal and provincial governments alike have slashed small business tax rates, while increasing marginal rate progressivity in the personal income tax. As such, the value of tax deferral through the corporate form is now large.

While corporate income is in effect taxed twice, at the corporate and personal levels, the system features a form of corporate-personal tax integration. Dividends from taxable Canadian corporations paid to domestic shareholders are "grossed up" to impute, and a personal tax credit is applied to offset, corporate taxes deemed to already have been paid on the underlying corporate earnings. Since 2006, dividend tax credit rates have differed for "eligible" dividends paid from earnings subject to the general corporate tax rate, and "non-eligible" dividends paid from earnings subject to the low rate, with the two credit rates corresponding to the respective corporate tax rates. Thus, the dividend tax credit effectively eliminates double taxation of earnings distributed as dividends, for large and small tax-paying corporations alike. However, the system may lead to undertaxation for corporations with effective tax rates below statutory rates (Smart, 2017), and for shareholders who receive distributions in the form of capital gains rather than as dividends.

Realized capital gains on corporate shares are subject to tax at one-half the shareholder's personal marginal tax rate. In addition, taxpayers are eligible for a lifetime capital gains exemption (LCGE) from taxation of approximately $900,000 on the disposition of qualified

[3] Under Canadian tax law, there are no fiscally transparent entities like S-corporations in the United States.

[4] The maximum deduction is reduced for corporations with taxable capital over $10 million, falling to zero at taxable capital of $15 million. **(Get these amounts for 2006, say?)** The income threshold has increased from $200,000 in 2000, or about 70 percent in real terms.

[5] Tax rate data reported here are drawn from the Finances of the Nation data project at https://financesofthenation.ca/statutory-tax-rates/.

small business shares.[6] Ignoring the LCGE for now, the effective tax rate on corporate earnings distributed as capital gains is therefore

$$\tau_e = \tau_c + .5(1 - \tau_c)\tau_p \tag{1}$$

where τ_c is the statutory corporate tax rate and τ_p the shareholder's personal marginal tax rate. The effective tax rate on income paid out as capital gains has decreased over time relative to other income streams, first with the 1999-2000 federal reform that reduced the capital gains inclusion rate from 75 to 50 percent, and then further with reductions to small business corporate tax rates in the province beginning in 2008. Since 2015, federal and provincial top bracket marginal tax rates have increased, leading to a pronounced increase in effective tax rates on salaries and dividends, further widening the gap.

Coincident with these tax changes, there has been a marked rise in incorporation of high-income taxpayers in Canada, and resulting decline in unincorporated business income. There has been a steady decline in tax rates since 2000, and a concomitant decline in unincorporated business income.

While the objective of integration is tax neutrality for alternative forms of capital income and forms of business organization, there are reasons to believe that the effective tax rate on earnings of small CCPCs is lower than business owners' personal marginal tax rate on ordinary income. This is particularly true for business owners who use CCPCs as vehicles to earn passive investment income, who engage in "income sprinkling" and "surplus stripping" transactions for tax planning purposes, or who use them for estate planning.

In principle, the small business deduction is available only for income from active business assets of the corporation other than certain investment and personal services businesses. Other income is deemed to be passive investment income that is subject to additional taxes. But the passive income rules are complicated, leading to a concern that CCPCs are used to reduce taxes on passive investment portfolios as well (Department of Finance, 2017). In particular, until 2017, a taxpayer who paid annual dividends (a situation that fits many physicians who need to finance their current consumption) for any reason and out of any source of corporate income could credit the same year's passive income taxes against personal income tax on dividends, effectively nullifying the impact of the corporate-side passive income top-up tax.

Income sprinkling refers to the practice of paying salaries or dividends to family mem-

[6]The LCGE for qualified small business shares is $892,218 in 2021. For farm properties, the limit is $1 million.

bers who face a lower personal tax rate than the manager-owner.[7] While there are rules to discourage the practice,[8] income sprinkling appears to be widespread (Department of Finance, 2017), leading to a persistent albeit probably small tax advantage to small business owners. Surplus stripping refers to transactions among related corporations with the effect of characterizing corporate cash distributions to shareholders as capital gains rather than dividends.[9] The resulting distributions face lower capital gains tax rates. In some cases, the taxpayer may also claim the LCGE, exempting the first $1 million of the distribution from tax entirely.

CCPC owners also have certain advantages in estate planning. In Canada, there is no estate tax, but there is deemed realization of capital gains at death. It is common for high-wealth CCPC owners to engage in "estate freeze" transactions that permit the transfer of shares in the business to family members without tax during the owner's lifetime, deferring indefinitely capital gains taxes that would otherwise be payable at death. In addition to the advantages just enumerated, CCPC owners can also use deferral to re-time income, and so arbitrage differences in tax rates over time and through the life cycle.

Mindful of these tax planning opportunities, the federal government enacted in 2018 certain changes to the rules just described. Notably, the tax on split income was expanded to apply to more types of payments to family members, including dividends paid to adult family members, except where the shareholder is "actively engaged" in the business. Additionally, the new rules reduce the small business deduction for corporations with more than $50,000 in annual passive investment income, and implement other changes intended to reduce incentives for tax-preferred saving through corporations. Finally, the government had proposed new rules to limit surplus stripping from corporations but, after strenuous objections from tax professionals, these proposals were ultimately withdrawn. In all, this review of tax rules suggests that considerable advantages remain for CCPC owners, relative to the taxes they would pay if their income were classified as unincorporated business income and subject to tax on a flow-through basis at personal tax rates.

The reforms to professional corporation rules permitting share ownership by family members that we study in this paper create clear tax advantages through income sprinkling and

[7] In Canada, the unit of taxation is the individual rather than the family, and so CCPC owners may frequently face higher marginal tax rates than their spouses and children.

[8] For example, since 1999, the "Tax on Split Income" provision applies the top federal marginal tax rate to dividends paid by private corporations to minor children (Bauer, Macnaughton and Sen, 2015).

[9] In the canonical surplus stripping transaction, shares in an operating company with retained earnings are sold to a holding company, resulting in a capital gains to the shareholder. In some circumstances, cash in the holding company can then be paid out to the shareholder as a tax-free return of capital, rather than as a dividend. While specific anti-avoidance rules exist under Section 84.1 of the Income Tax Act, they do not apply to all surplus-stripping transactions (Roopra and Saverino, 2020).

surplus stripping. In some cases, it may also have permitted professionals to multiply their access to the lifetime capital gains exemption, with each shareholding family member claiming the exemption in respect of gains on their own shares, in the case of arm's-length sales of the business.

Professionals and their tax advisers perceive a significant value to the deferral of taxes through professional corporations. In a 2024 policy brief, for example, the Canadian Medical Association (a professional advocacy group) wrote "It is widely known that the use of a corporation can provide a tax deferral for individual shareholders where funds are left in the corporation instead of being fully extracted as dividends or salary. Much has been said about the supposed 'advantage' that medical professionals have, as more money can accumulate in a corporation for investment purposes because of the lower rates of corporate tax. However, ... professional corporations play a significant role in providing a physician with the security they require to save for their retirement." (Canadian Medical Association, 2024).

3 Model

This section presents our conceptual framework that describes how a policy inducing incorporation may affect the reallocation of income from a personal side to a corporate form, and subsequently may affect the overall taxable income and tax burdens of a business owner. Then we use our model to describe which behavioral responses are relevant for evaluating the policy that provides tax incentives for incorporation.

Taxation and the entrepreneurial firm. Consider an owner-manager who supplies labor L_t to produce output $F_t(L_t)$ and consumes X_t in each period of life $t = 1, \ldots, H$. Income that is not immediately consumed may be saved inside the business entity and accrues interest at a fixed rate r.

The firm may be organized as either a passthrough entity ($i = P$) or a corporate entity ($i = C$). Income may be subject to taxation when it is earned, when it is consumed, or both, and tax rates depend on organizational form $i = P, C$. We will assume for the moment that tax rates are constant over time but we will relax it later. Let τ_c^i denote the rate paid on current business income F_t, τ_d^i the tax rate on distributions from the business to the shareholder for consumption, and τ_f^i on financial income inside the business entity. To be succinct in notation, we assume that all saving occurs inside the business.[10] The transition

[10]In the corporate form, it will be the case if distribution tax rate is constant over time, and the tax rate on interest income inside the business does not exceed that applying to saving on personal account. In

equation for financial wealth is

$$X_t = (1-\tau_d^i)(1-\tau_c^i)F_t(L_t) + (1-\tau_d^i)[(1+(1-\tau_f^i)r)A_{t-1} - A_t] \qquad t = 1,\ldots,H \tag{2}$$

We assume that the business begins and ends operations with no financial assets;[11] accumulating (2) at the after-tax interest rate $1+(1-\tau_f)r$ and applying the terminal conditions $A_0 = A_H = 0$ yields the lifetime present-value budget constraint

$$\sum_{t=1}^{H} R_t^i \left[(1-\tau_e^i)F_t(L_t) - X_t\right] \geq 0 \tag{3}$$

where

$$1-\tau_e^i = (1-\tau_d^i)(1-\tau_c^i)$$

is the take-home share of current business income, after deducting business-level taxes and distribution taxes, and

$$R_t^i = (1+(1-\tau_f^i)r)^{-t} \tag{4}$$

is the present-value price of period-t consumption at the after-tax interest rate. (Likewise, let $R_t^0 = (1+r)^{-t}$ denote the corresponding pre-tax price of consumption.)

Corporate and passthrough businesses. For a corporate firm, business income is subject to tax at the corporate rate τ_c, passive financial income at rate τ_f, and distributions from the corporation to the shareholders in the form of dividends or capital gains are taxed again at rate τ_d. For a passthrough entity, the business's full operating cash flow and the return to saving on personal account are both subject to tax at the shareholder's personal tax rate τ_p. For a passthrough firm, we therefore have

$$\tau_c^P = \tau_f^P = \tau_p \quad \tau_d^P = 0 \implies \tau_e^P = \tau_p$$

As discussed in Section 2, the Canadian tax system exhibits a small business corporate tax rate substantially below top personal marginal tax rates $\tau_c \ll \tau_p$. Corporate and personal taxes are partially integrated through a dividend gross-up-and-credit system that approximately equalizes the effective corporate-plus-personal taxes on corporate dividends with the

the pass-through form with no distribution taxes, saving in a business is equivalent to saving in a personal account.

[11] In particular, this is not a limiting assumption even in the presence of the bequest motive in the Canadian context because inheritance may be interpreted as the final period consumption and deemed realization rules imply taxation of accumulated retained earnings at the distribution rate, so that the tax treatment of effective inheritance is the same as the tax treatment of consumption in any other period.

shareholder's personal tax rate. However, capital gains income is underintegrated, so that $\tau_e^C < \tau_p$ for income that is earned as capital gains on corporate shares. Moreover, passive financial income earned in corporations was subject to a complex tax system with implied $\tau_f^C < \tau_p$ for most taxpayers.

These inequalities imply that the rate of return to saving is higher in the corporate form. This has implications for the age profile of consumption and labor supply, which we discuss next.

Life cycle variation in tax rates. In practice, personal income and distribution taxes may vary over time. For example, the tax rate on personal income may be different in retirement than right now. We denote time dependence of a tax rate imposed at time t on base z under business form i as $\tau_{z,t}^i$.

The budget constraint is now

$$\frac{X_t}{1-\tau_{d,t}^i} = (1-\tau_{c,t}^i)F_t(L_t) + (1+(1-\tau_{f,t}^i)r)A_{t-1} - A_t \qquad t = 1,\ldots,H \tag{5}$$

and, using the same assumptions as before (and having R_t^i incorporate time-dependence of tax rates on financial income), it yields

$$\sum_{t=1}^{H} R_t^i \left[(1-\tau_{c,t}^i)F_t(L_t) - \frac{X_t}{1-\tau_{d,t}^i} \right] \geq 0 \tag{6}$$

There are two observations that are important to make at this point. First, the relative price of consumption in periods m and j is no longer $\frac{R_m^i}{R_j^i}$, but rather $\frac{R_m^i}{R_j^i} \cdot \frac{1-\tau_{d,j}^i}{1-\tau_{d,m}^i}$: variation in the distribution tax rate further distorts consumption incentives. Analogously, labor supply incentives are additionally distorted if the profit tax rate varies over time, $\frac{1-\tau_{c,j}^i}{1-\tau_{c,m}^i}$.[12]

Second, the corporate integration system now implies that the effective tax rate on corporate profits varies over time, in particular with the timing of distributions.

Life cycle savings and labor supply. Under ownership structure $i = C, P$, the entrepreneur chooses $\{(X_t, L_t)\}$ to solve

$$V^i = V(\tau_e^i, \tau_f^i) = \max \sum \delta^t U_t(X_t, L_t) \quad \text{subject to (3)–(4).} \tag{7}$$

[12] In particular, if $\tau_{c,j}^i$ does not vary over time, the only distortion to the intertemporal margin of labor supply is due to taxation of financial income.

The first-order conditions for (7) imply that consumption choices satisfy the Euler equation

$$\delta(1+(1-\tau_f^i)r)U_{Xt} = U_{Xt-1} \tag{8}$$

Labor supply is chosen in each period to equate the marginal rate of substitution within period to the marginal product of labor, net of all taxes $\tau_e^i = \tau_c^i + (1-\tau_c^i)\tau_d^i$:

$$-\frac{U_{Lt}}{U_{Xt}} = (1-\tau_e^i)F_{Lt} \tag{9}$$

A reduction in the taxation of financial income causes saving to rise, as shown in (8). But the entrepreneur can increase saving either by deferring consumption, or by increasing labor supply early in the life cycle. The corporation is like a tax deferred account, but contributions to the account are achieved by working and generating corporate earnings to be saved. This can be seen most directly in the special case in which within-period utility is of the additive iso-elastic form

$$U_t(X_t, L_t) = \frac{X_t^{1+\eta}}{1+\eta} - \frac{L_t^{1+\gamma}}{1+\gamma} \tag{10}$$

In this case, the life-cycle path of consumption satisfies the familiar condition

$$\delta[1+(1-\tau_f)r]X_t^{\eta} = X_{t-1}^{\eta} \tag{11}$$

so that $1/\eta$ is the intertemporal elasticity of substitution. If the production function is linear, $F_t(L_t) = w_t L_t$, we may substitute (11) into (9) to obtain a closed-form expression for the life-cycle path of labor supply:

$$\log\frac{L_t}{L_{t-1}} = \frac{1}{\gamma}\left[\log\frac{w_t}{w_{t-1}} - \log\delta - \log(1+(1-\tau_f)r)\right] \tag{12}$$

In the iso-elastic model, labor grows proportionally with growth in productivity of labor. As shown in (12), $1/\gamma$ is the Frisch elasticity of substitution between labor at each date.

The effect of a decrease in the tax rate on financial income can be obtained by differentiating (12) to obtain

$$\frac{\partial\log(L_t/L_{t-1})}{\partial\tau_f} = \frac{1}{\gamma}\frac{r}{1+(1-\tau_f)r}$$

A decrease in τ_f therefore causes the age-earnings profile to decline more steeply over time. Faced with a higher after-tax return to saving inside the corporation, the entrepreneur responds by increasing labor supply early in life, relative to labor at later dates. The effect of

τ_f on the age-earnings profile is proportional to the Frisch elasticity $1/\gamma$.

For simplicity, our model does not incorporate a retirement decision, instead assuming that optimal labor supply is interior at each date. A simple extension of this model would add a fixed cost of working in each period; retirement (or zero labor supply) would then occur when the marginal rate of substitution in (9) at zero labor supply exceeded the after-tax wage. In this extension, the model would also imply that a decrease in the tax on financial income would lead to earlier retirement, due to the wealth effect.

Welfare analysis. Is a shift from passthrough to corporate taxation socially desirable? The answer depends on the effects of incorporation on the taxpayer and on tax revenues. In this model, an exogenous shift of an entrepreneur from passthrough to corporate organization is equivalent to the vector of tax changes

$$(\Delta\tau_e, \Delta\tau_f) = (\tau_e - \tau_p, \tau_f - \tau_p)$$

If $(\Delta\tau_e, \Delta\tau_f) < 0$, effective tax rates on active and passive business income fall with incorporation. Such changes lead to mechanical revenue losses and a transfer to the entrepreneur from the treasury. But the behavioral changes in labor and savings may offset the mechanical effects, reducing revenue loss. We can evaluate the resulting equity–efficiency tradeoff in a dynamic sufficient statistics framework.

Using the budget constraint (3), we write tax revenue in each organizational form as a function

$$T^i = T(\tau_e^i, \tau_f^i) = \tau_e^i \sum R_t^0 F_t - \sum (R_t^i - R_t^0) N_t \tag{13}$$

where

$$N_t = (1 - \tau_e) F_t - X_t \tag{14}$$

are net additions to retained earnings in the current period. This expression shows that the tax system $(\tau_c^i, \tau_d^i, \tau_f^i)$ is equivalent to a tax on business income F_t as it accrues at rate τ_e^i, together with a tax or subsidy to net earnings deferred within the business N_t at effective rate $R_t^i - R_t^0$. All net earnings are eventually paid out, so that it is a subsidy when the business retains earnings, $N_t > 0$, and a source of revenue when earnings are distributed, $N_t < 0$.

The gain from incorporation to the taxpayer can be approximated using (7) as

$$V^C - V^P \approx \frac{\partial V}{\partial \tau_e}(\tau_e - \tau_p) + \frac{\partial V}{\partial \tau_f}(\tau_f - \tau_p) > 0$$

where the marginal mechanical effects are

$$\begin{aligned}\frac{\partial V}{\partial \tau_e} &= \lambda \sum R_t F_t \\ \frac{\partial V}{\partial \tau_f} &= \frac{\lambda r}{1+(1-\tau_f)r} \sum t R_t N_t\end{aligned} \tag{15}$$

and λ is the marginal utility of income. These first-order gains to the entrepreneur from incorporation are offset by corresponding mechanical losses in tax revenue,

$$M = -\frac{V^C - V^P}{\lambda}$$

In addition, the switch to corporate form has behavioral effects on revenue, due to the changes in the life-cycle path of consumption and labor supply discussed above. We may approximate the behavioral effect on revenues by differentiating (13) at $\tau_e, \tau_f = \tau_p$ to obtain

$$B = \tau_p \sum R_t^0 \Delta F_t - \sum (R_t^P - R_t^0) \Delta N_t \tag{16}$$

We can evaluate the welfare effects of the shift to incorporation by calculating the marginal cost of public funds (also called the "marginal value of public funds" in Hendren and Sprung-Keyser, 2020). The social value of the mechanical transfer to the entrepreneur is $-(1-g)M$, where g is the marginal social value of a \$1 lump-sum transfer from tax revenues. The social benefit of the switch to incorporation per dollar of revenue lost is therefore

$$MCPF = \frac{(1-g)M}{\Delta T} = (1-g)\frac{M}{M+B}$$

In summary, we can estimate the mechanical and behavioral impacts on revenue from an exogenous switch from pass-through to corporate organization. The behavioral effect can be approximated by the long-run change in combined (corporate and personal) income of the physician, multiplied by the tax rate that would have applied to the passthrough entity, plus the corresponding change in taxes paid on income deferred through the corporate form. The size of the behavioral gain in revenues, relative to the mechanical loss in revenues, is a sufficient statistic for the impact of the change on social welfare.

4 Data and outcome variables

For our empirical analysis, we use the following datasets all merged at the individual level using the unique ID: (1) individual tax returns data (T1PMF) to identify individual income and tax information, (2) family data file (T1FF) to identify family-level income and tax information, (3) ownership data on incorporated businesses (T2S50), (4) firm-level balance sheet data (NALMF) to identify corporate income and tax information, and (5) ownership data on unincorporated businesses. We link these datasets at the individual level so that we have comprehensive information on the person's various income sources, taxes, ownership rates of incorporated and/or unincorporated businesses and their balance sheets. If the person is married, we also construct the combined income and tax information that accounts for the spouse and children.

All of these data are from 2001 to 2017, except for the ownership data on unincorporated businesses, which start in 2005. The relevant analysis sample is all individuals who ever own any incorporated or unincorporated business starting from 2005 (given that our data on unincorporated businesses start from 2005). We make this sample restriction to identify and focus on high-income professionals (i.e., doctors) since we do not observe the individual's occupation, but instead only observe the industry code for each business – i.e., an individual who has ownership in a clinic (NAICS 6211, offices of physicians) must be a doctor in Ontario prior to the 2006 reform, and is still most likely to be a doctor, rather than a nurse or health care staff, even after the reform. From the family files, we can differentiate a doctor from her family members among all owners in a medical business. The main limitation due to the unincorporated data starting from 2005 is that we cannot test for parallel pre-trends for outcomes related to businesses alone, such as employment, capital investment, and total revenue. For example, to examine what happens to capital investment or employment after incorporation, we need to be able to follow the investment and the number of workers before and after a business is incorporated. Because the unincorporated business data starts from 2005, we cannot test whether the trends were parallel relative to the control group before 2005. But for all the other key outcome variables at the individual level, such as their taxable income and tax burdens, we can follow from 2001.

The main outcome variables are various measures of individual- and family-level income, such as their taxable income, capital income (i.e., dividends), and labor income. We also look at taxes paid on their income (combining federal and provincial levels). To assess whether there is any income shifting from the personal side to the corporate one after incorporation, we directly examine the key outcomes at the firm level, such as pre-tax business income

(defined as changes in retained earnings plus corporate taxes) and corporate taxes paid (federal and provincial taxes combined). For individuals who incorporate their businesses only after the reform, these variables would be mechanically zero prior to the reform. Any subsequent changes in these outcomes reflect both the reallocation of income (from personal to corporate) and changes in businesses activities (i.e., firm expansion after incorporation). Therefore, we also examine overall taxable income and taxes paid, combining pre-tax personal income and taxes with pre-tax corporate income and taxes paid. Note that the overall taxable income would remain the same after incorporation if there is no change in real business activities. However, the combined taxes paid may decrease after incorporation via reallocation of income given that the marginal tax rate on corporate income is lower than the marginal tax rate on personal income. On the other hand, if there are large increases in business activities through firm expansions after incorporation, corporate income may increase significantly, which may lead to increases in corporate income. To check whether there is any change in real business activities, we look at changes in the number of workers, capital investment, and revenue.

5 Empirical strategy

We use a triple-difference design to estimate the impact of decisions to incorporate on the business activities of small firms, and on the incomes received and taxes paid by business owners. The decision to incorporate reflects multiple factors, creating challenges in identifying the causal impact of incorporation events. To provide causal evidence, we focus on incorporation by Canadian physicians. In particular, we exploit the 2006 reform in Ontario which allowed physicians' family members to own shares in these businesses, creating opportunities for "income sprinkling" to family members and other forms of tax avoidance via the corporate form.

To assess the effects of this reform on the key outcomes, we first compare the outcomes of physicians in the treated province (Ontario) with the outcomes of physicians in other provinces (i.e., British Columbia) before and after the policy change. The intuition is that physicians across different provinces are similar in terms of their income level, but their incentives to incorporate their businesses were unaffected by the reform. To absorb any province-specific or other policy changes, we make the same difference-in-differences comparisons using business owners in similar professions (i.e., other health care professionals, lawyers, accountants). Our triple difference design would absorb any province-specific shocks or industry-specific shocks that may have coincided with the policy. The key identifying as-

sumption behind our empirical design is that affected and unaffected groups' outcomes would have trended similarly in the absence of the reform.

To validate our empirical design and visualize the reform's effects on the key outcomes, we estimate the following model:

$$Y_{it} = \theta_t \cdot Doctor_i \cdot ON_i + \gamma_t \cdot Doctor_i + \lambda_t \cdot ON_i + \alpha_i + \phi_t + u_{it}, \tag{17}$$

where Y_{it} is the outcome of individual i in year t, $Doctor_i$ is an indicator equal to one if the individual is a physician or dentist, ON_i is an indicator equal to one if the individual is in Ontario, α_i are individual fixed effects, and ϕ_t are year fixed effects. Each coefficient θ_t measures the change in Y_{it} for treated relative to control individuals in year t, with θ_{2005} is normalized to zero. Standard errors are clustered at the individual level.

To ensure that the control group (in other industries/occupations) is comparable to physicians, we first find 2-digit sectors of business owners that had a similar pre-reform incorporation rate prior to the reform compared to that of physicians in Ontario. Then among business owners within these industries as well as physicians in other provinces, we match them based on their experience bins, gender, marital status, and family size measured in 2005.[13] Table 1 shows that while the overall income and tax burdens of doctors in Ontario are larger compared to those of doctors in other provinces, the difference is comparable to that of other high-income professionals between Ontario and other provinces. Furthermore, the demographics of physicians in Ontario, such as their average age, share of males, marital status, and family size, are also comparable across provinces and other high-income professionals.

To study the life-cycle impacts of incorporation in more detail, we plan to exploit heterogeneous responses across different birth cohorts (defined as doctors in their 30s, 40s, ..., in 2005) because the incentives to incorporate and behavioral responses to incorporation may differ significantly across their life cycle. For example, we would expect younger physicians to expand their businesses much more upon incorporation and experience a larger increase in their overall taxable income compared to older physicians.

[13] A business owner's experience is defined as the difference between the age of the owner in a given year minus the median graduation age of a given 4-digit industry. The graduation age is computed by aggregating individual information on the last year in which a person claims tuition credits for a subset of people who claim these.

6 Results

To evaluate the impacts of the reform, we first look at the share of incorporated businesses. We compare the incorporation rates of physicians in Ontario relative to those of physicians in other provinces before and after the reform. Then we compare these differences relative to the same differences among other high-income professionals. As Figure 1 shows, we find a large and significant increase in incorporation rates for physicians in Ontario after the reform. Column (1) of Table 2 shows that the incorporation rate increases by 15.3 percentage points (from the mean of 16.6 percent), meaning that it almost doubles after the reform. There is also some evidence of tax planning sophistication on the part of these taxpayers. The number of corporate businesses rises more sharply than the proportion of doctors who have a corporation, indicating that some doctors incorporate multiple entities. The proportion with financial and other non-medical corporations also rise. All this is suggestive of the role of incorporation in creating holding company structures that facilitate the reinvestment of earnings and may play a role in tax planning as well.

Note that these estimate is based on comparing physicians in Ontario relative to physicians in other provinces, and comparing the same differences among other high-income professionals between Ontario and other provinces. To simplify, we will describe our triple-difference estimates as the outcomes for physicians in Ontario relative to those of the control group after the reform.

Next, we assess how pre-tax individual income and taxes change after the reform. As Figure 2 and Table 2 show, the personal income of physicians and the family-level personal income (including the spouse's income when married) in Ontario decrease by 22,895 dollars and 13,840 dollars on average, relative to the control group after the reform. By contrast, the corporate income and retained earnings of incorporated businesses at the family level increase by 25,450 dollars and 40,065 dollars on average after the reform. These results suggest significant reallocation of family-level income from the personal side to the business side.

In particular, as Figure 3 and Table 3 show, the physician's employment income decreases sharply and almost immediately, by 28,511 dollars on average, while the dividend incomes rises by 4,399 dollars (but not to the level where it offsets the fall in the labor income). By contrast, the spouse's employment and dividend income increase by 3,622 dollars and 1,860 dollars, respectively, on average, showing evidence of income-splitting of physicians with their spouses (with a lower tax base) after the reform.

Subsequently, as Figure 4 and Table 4 show, the personal taxes paid (the federal and

provincial taxes combined) decreases by 8,475 dollars on average. By contrast, we see increases in corporate income taxes paid (combining both federal and provincial ones), by 6,997 dollars on average. These findings suggest the reform not only provided strong incentives for physicians in Ontario to incorporate their businesses, but also to subsequently shift to and retain part of their income in the lower-taxed organizational form.

Assessing overall taxable income and taxes paid (combining both the personal side and the corporate side), however, shows that these results reflect something beyond the pure reallocation and tax-saving behaviors. We find that the combined taxable income goes up in the medium run, with a fall in the long run after the reform. Consequently, the overall tax burdens rise in the medium run and fall in the long run, leading to a reduction in the average effective tax rates (defined as total taxes divided by overall taxable income). Table 5 shows that overall taxable income goes up by 15,028 dollars, but overall taxes paid and average effective tax rates decrease by about 1,000 dollars and 0.64 percentage points (3-percent reduction) on average after the reform.

While incomes and taxes fall over time, doctors retain a significant deferred-tax asset in their corporate retained earnings. Figure 5 shows the estimated effect on retained earnings in the corporation. These amounts are recorded on a pre-tax basis. An important question for our future research is the way in which these funds are ultimately distributed from the firm, and the effective tax rate that is paid. Panel (b) of the figure shows that treatment effects on capital gains income is insignificant, suggesting that there is no evidence of surplus stripping transactions, at least over the 12-year horizon after thew reform that we observe.

While incorporation therefore seems to serve a role in tax planning, there are real effects as well. We find that the number of workers, capital investment, and revenue of their firms increased for the treated group after the reform, providing evidence of firm expansion (Figure 6). These results suggest that the post-reform increases in firms' retained earnings reflect not only reallocation effects, but also increased business activities and intertemporal substitution of labor after incorporation.

There are significant differences across graduation cohorts in incorporation effects and intention to treat effects on outcomes. This is indicative of the heterogeneous life-cycle patterns in the take-up of the corporate form, and in the way that corporations are used in business decisions. Panel (a) of Figure 7 shows heterogeneous impacts on incorporation and on total incomes. Take-up of the corporate form was initially largest among doctors with 10-30 years experiences. These professionals are in middle age, when the potential to save on a tax-deferred basis through the corporate form may be most advantageous. Panel (b) of the figure shows the corresponding ITT effects on total incomes. In this case, the effects are

largest for the youngest cohort. This may reflect a failure of parallel trends for this group, if doctors are somewhat slower to enter the labor market, and experience faster income growth thereafter.

Figure 8 shows cohort effects on taxes paid and retained earnings. As with incomes, we see the largest effects for the youngest cohorts.

To estimate the welfare impacts of this reform, we plan to measure the change in excess burden per dollar of lost tax revenues using our reduced-form estimates on these behavioral responses and mechanical effects. We also plan to exploit heterogeneous responses across age cohorts to proxy their life cycle, so that we can account for important dynamic effects we document in our current results.

References

Alstadsæter, Annette, Wojciech Kopczuk, and Kjetil Telle. 2014. "Are Closely-Held Firms Tax Shelters?" *Tax Policy and the Economy*, 28: 1–32.

Bauer, Andrew M, Alan Macnaughton, and Anindya Sen. 2015. "Income splitting and anti-avoidance legislation: Evidence from the Canadian 'kiddie tax'." *International Tax and Public Finance*, 22(6): 909–931.

Canadian Medical Association. 2024. "Implications of 2024 Federal Tax Changes for Physicians." Submission to the Deputy Prime Minister and Minister of Finance.

Clarke, Conor, and Wojciech Kopczuk. 2017. "Business Income and Business Taxation in the United States since the 1950s." *Tax Policy and the Economy*, 31: 121–59.

Department of Finance. 2017. "Tax Planning Using Private Corporations."

Gottlieb, Joshua D, David Hémous, Jeffrey Hicks, and Morten G Olsen. 2023. "The Spillover Effects of Top Income Inequality." National Bureau of Economic Research Working Paper 31366.

Gottlieb, Joshua D., Maria Polyakova, Kevin Rinz, Hugh Shiplett, and Victoria Udalova. 2020. "Who Values Human Capitalists' Human Capital? Healthcare Spending and Physician Earnings." University of Chicago.

Guyton, John, Patrick Langetieg, Daniel Reck, Max Risch, and Gabriel Zucman. 2021. "Tax Evasion at the Top of the Income Distribution: Theory and Evidence." National Bureau of Economic Research Working Paper 28542. Current version: November 2023.

Joint Committee on Taxation. 2013. "Foreign Passthrough Entity Use in Five Selected Countries." Report prepared by the Staff of the Joint Commitee on Taxation.

Kopczuk, Wojciech. 2023. "The messy boundary between pass-through and corporate taxation." *Oxford Review of Economic Policy*, 39(3): 451–459.

Kopczuk, Wojciech, and Eric Zwick. 2020. "Business Incomes at the Top." *Journal of Economic Perspectives*, 34(4): 27–51.

Leite, David. 2024. "The Firm as Tax Shelter: Micro Evidence and Aggregate Implications of Consumption Through the Firm." Paris School of Economics, mimeo.

Nielsen, Lars, and Arthur Sweetman. 2018. "Measuring Physicians' Incomes with a Focus on Canadian-Controlled Private Corporations." *Healthcare Papers*, 17(4): 77–86.

Romanov, Dmitri. 2006. "Corporation as a Tax Shelter: Evidence from Recent Israeli Tax Changes." *Journal of Public Economics*, 90(10-11): 1939–54.

Roopra, Danvir S., and Claudio R. Saverino. 2020. "The Decision To Use a Holding Corporation." In *Taxation of Private Corporations and Their Shareholders.* . 5th ed., , ed. Rachel Gervais, John Sorensen, David Stevens and Dave Walsh. Toronto:Canadian Tax Foundation.

Saez, Emmanuel, Joel B. Slemrod, and Seth H. Giertz. 2012. "The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review." *Journal of Economic Literature*, 50(1): 3–50.

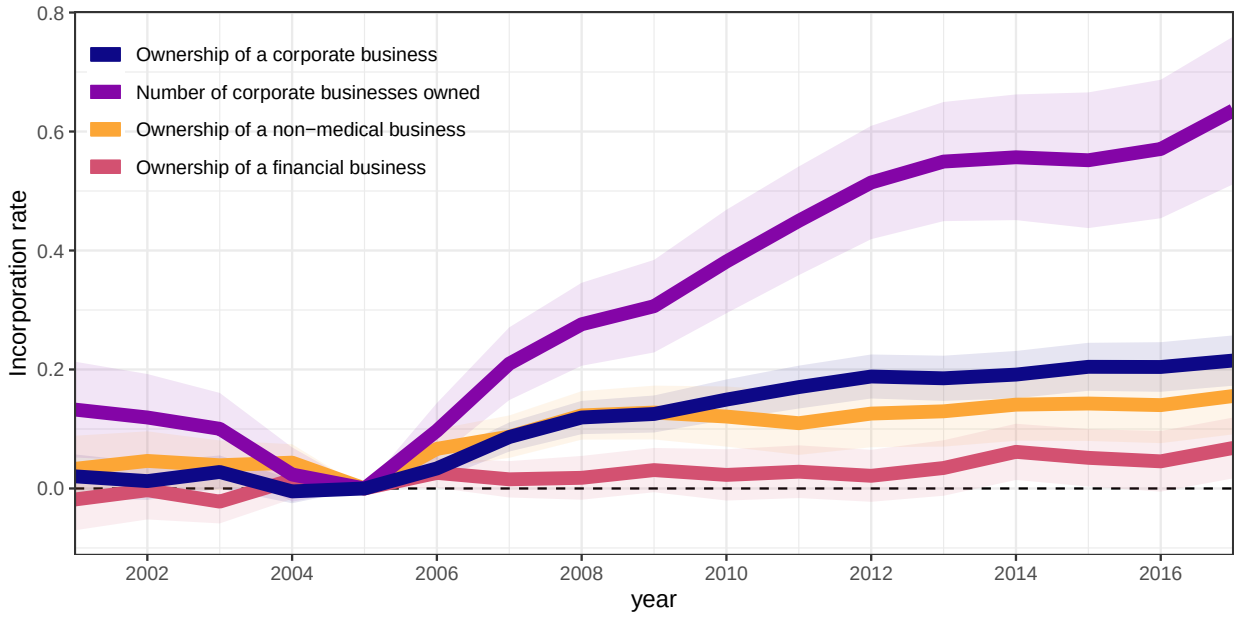
Smart, Michael. 2017. "Dividend taxation in Canada: Rates and revenues since 1972." *Canadian Tax Journal*, 65:2: 419–433.

Smart, Michael. 2021. "Small Business Taxation and Income Inequality: The View from Canada." *National Tax Journal*, 74(2): 493–512.

Smith, Matthew, Danny Yagan, Owen Zidar, and Eric Zwick. 2019. "Capitalists in the Twenty-First Century." *Quarterly Journal of Economics*, 134(4): 1675–1745.

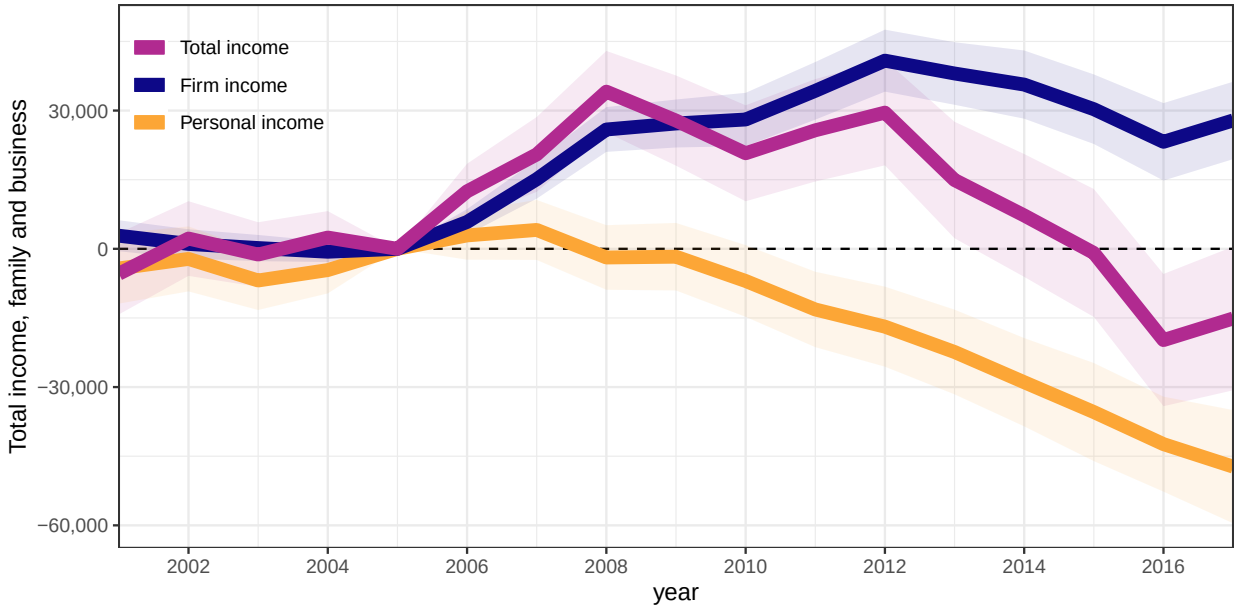
Wolfson, Michael, Michael Veall, Neil Brooks, and Brian B. Murphy. 2016. "Piercing the Veil – Private Corporations and the Income of the Affluent." *Canadian Tax Journal/Revue Fiscale Canadienne*, 64(1).

Figure 1: Reform effects on incorporation



Notes: Estimated treatment effects of the 2006 Ontario reform on various measures of incorporation by doctors. The solid vertical line indicates the reform year. Shaded are 95 percent confidence intervals.

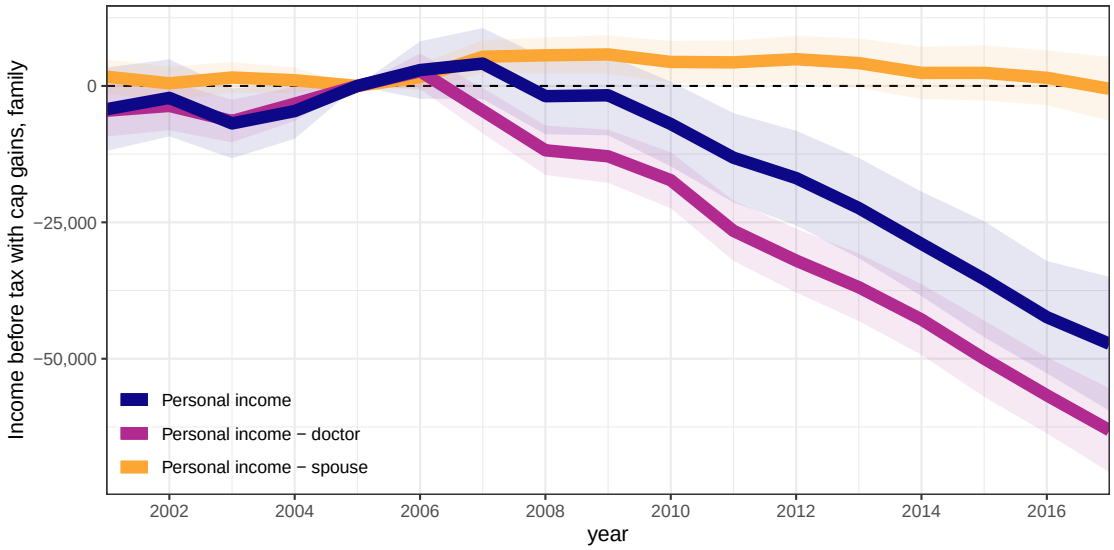
Figure 2: Reform effects on components of income



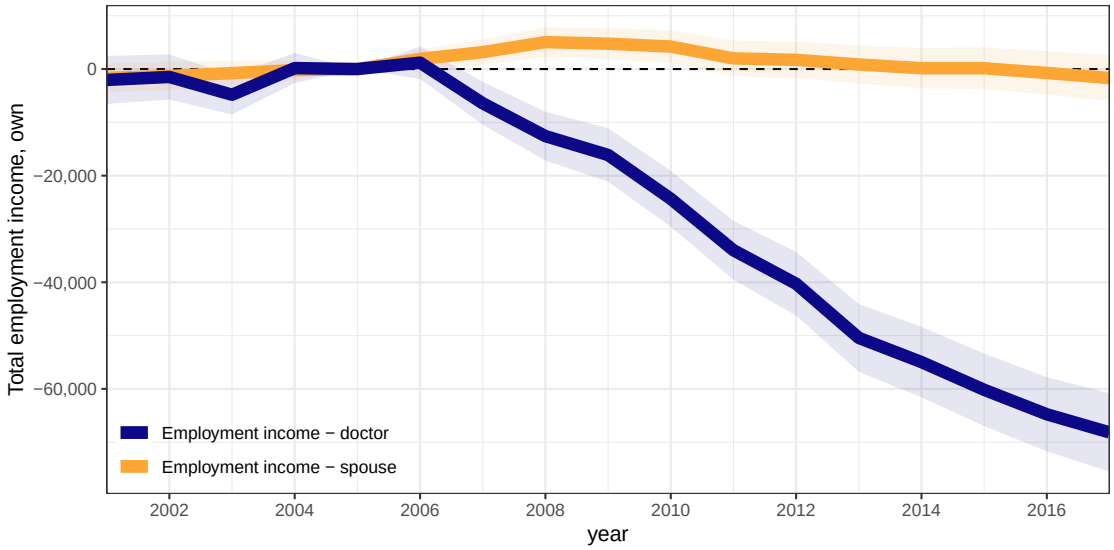
Notes: Estimated treatment effects of the 2006 Ontario reform on total family income and its components. The solid vertical line indicates the reform year. Shaded are 95 percent confidence intervals.

Figure 3: Income shifting within the family

(a) Total personal incomes



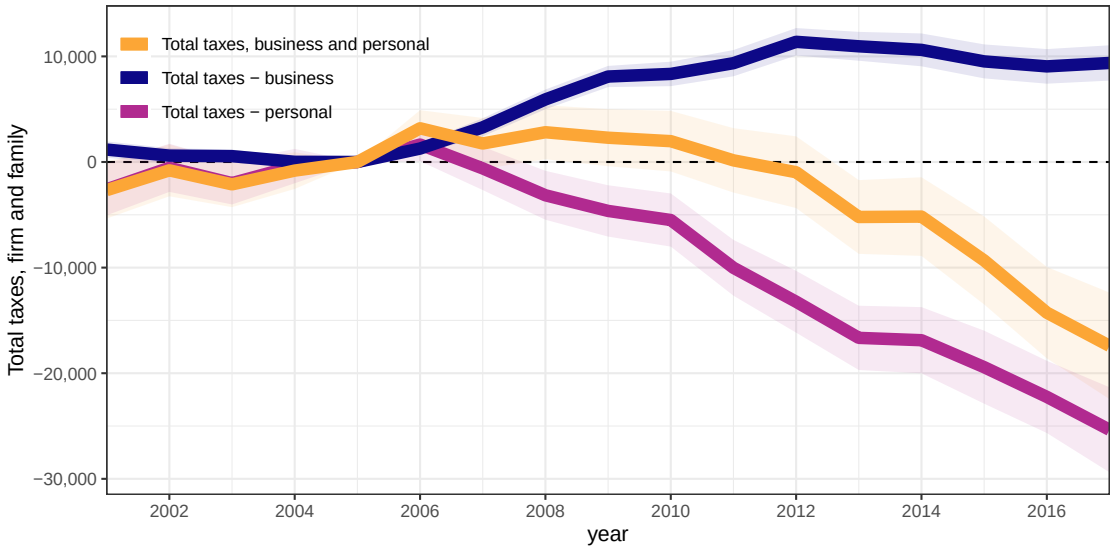
(b) Employment incomes



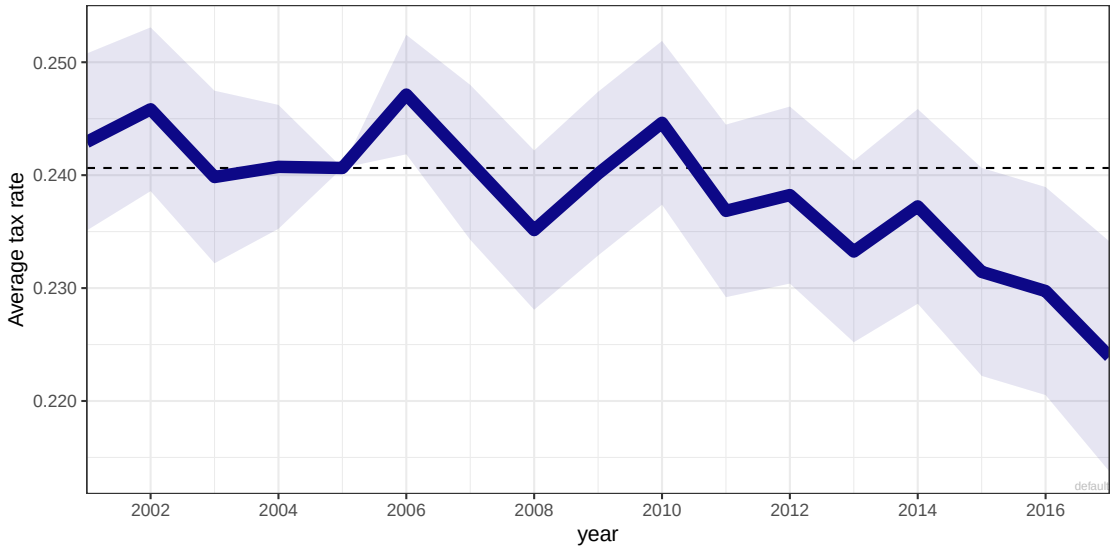
Notes: Estimated treatment effects of the 2006 Ontario reform on components of income for the doctor and spouse. The solid vertical line indicates the reform year. Shaded are 95 percent confidence intervals.

Figure 4: Reform effects on taxes paid

(a) Total taxes



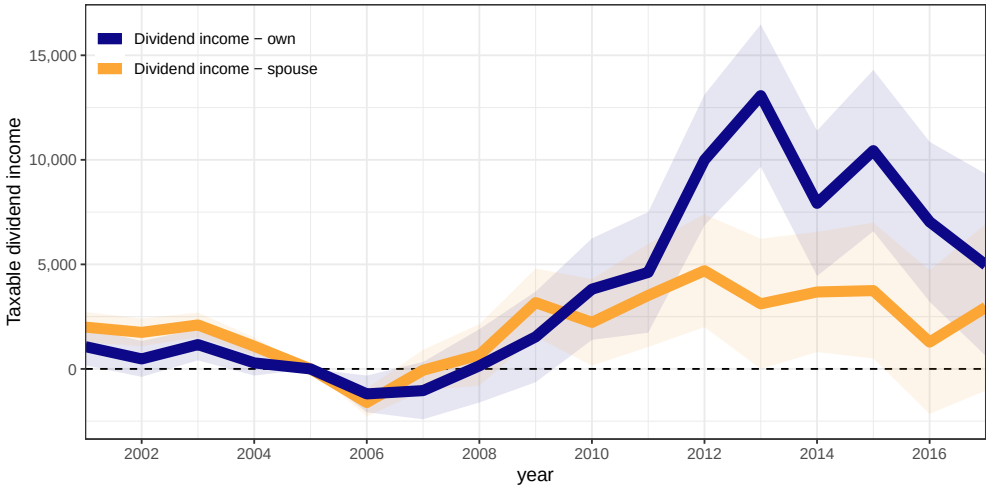
(b) Average tax rate



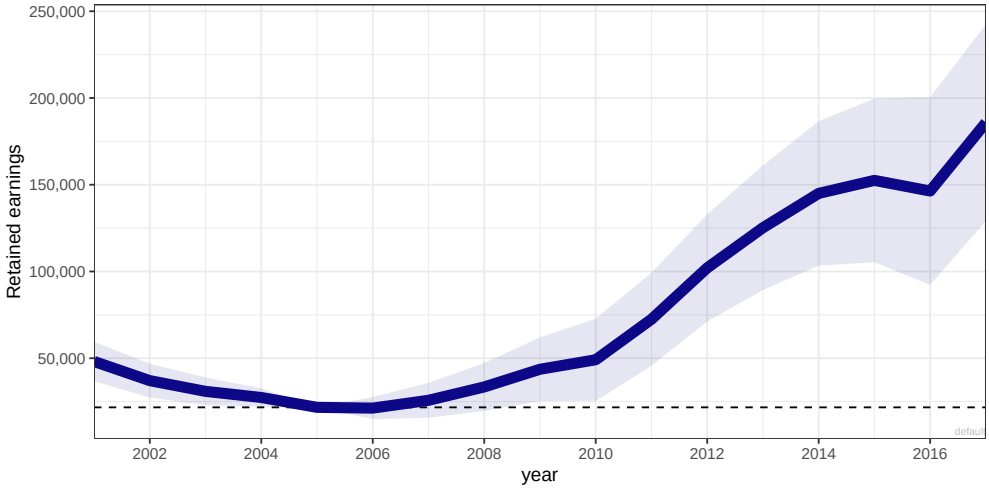
Notes: Estimated treatment effects of the 2006 Ontario reform on personal and corporate taxes paid by the doctor's family. The first panel shows effects on taxes paid in dollars. The second panel shows effects on the family average tax rate. The solid vertical line indicates the reform year. Shaded are 95 percent confidence intervals.

Figure 5: Corporate distributions and retentions

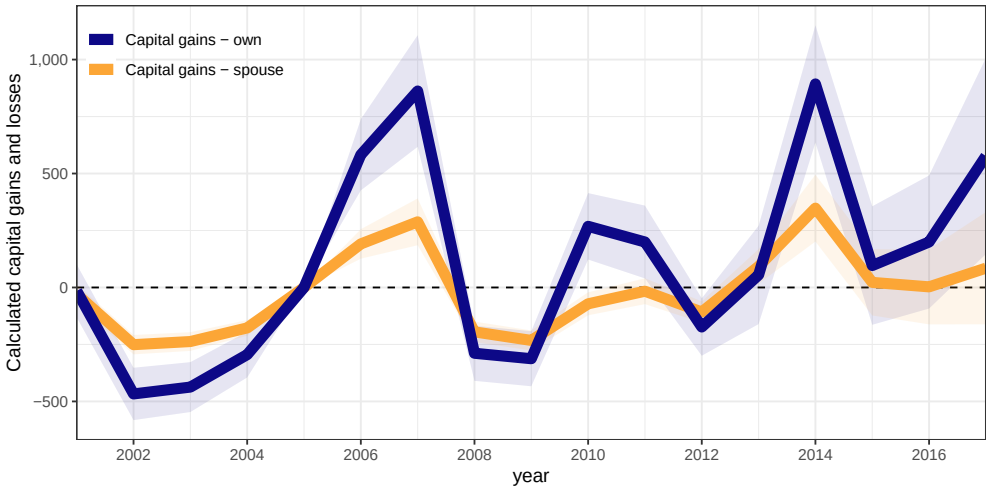
(a) Dividend incomes



(b) Retained earnings



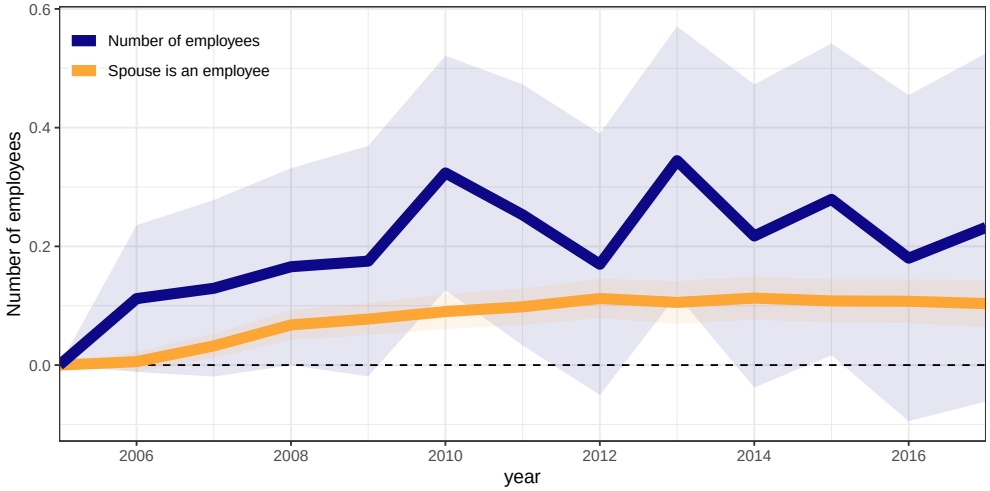
(c) Capital gains



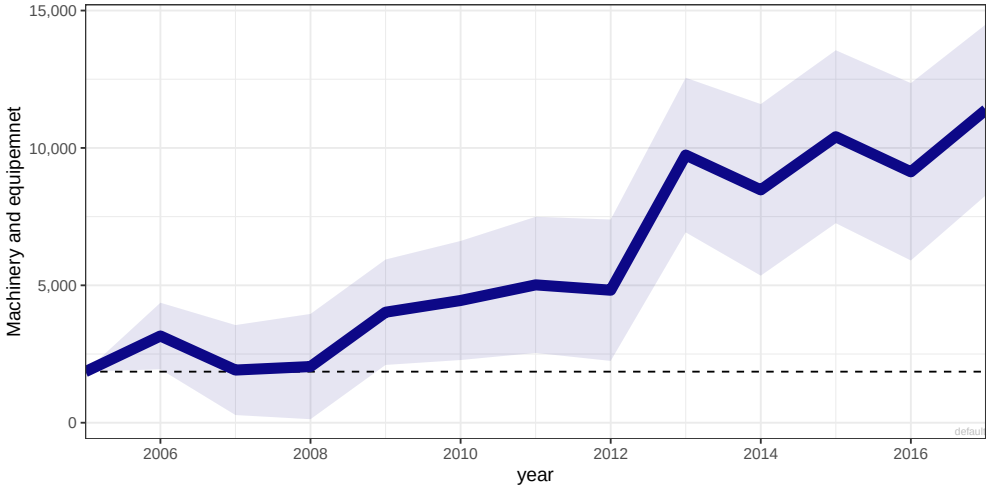
Notes: Estimated treatment effects of the 2006 Ontario reform on dividend income received, retained earnings of the corporation, and capital gains realized. The solid vertical line indicates the reform year. Shaded are 95 percent confidence intervals.

Figure 6: Firm-level outcomes

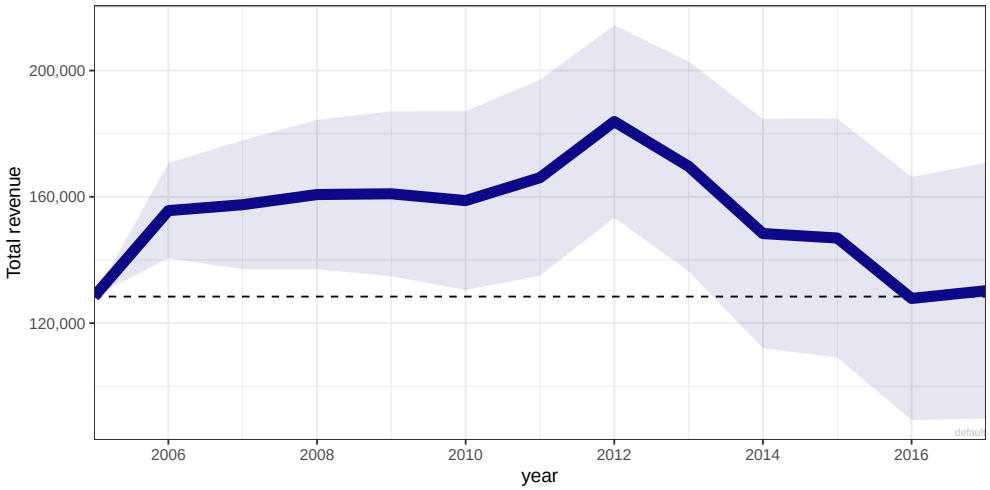
(a) Employment



(b) Machinery and equipment investment



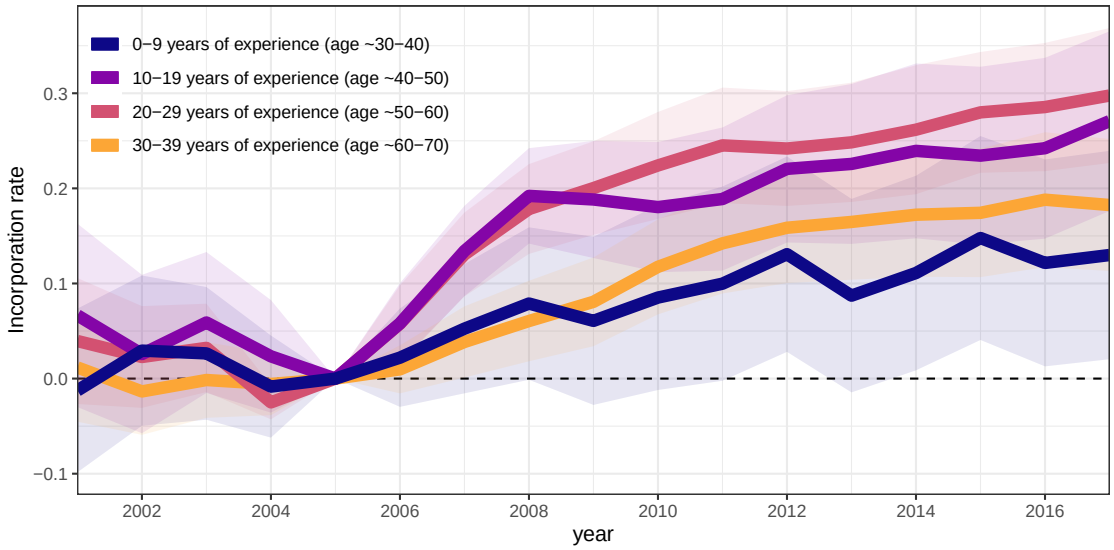
(c) Total revenue



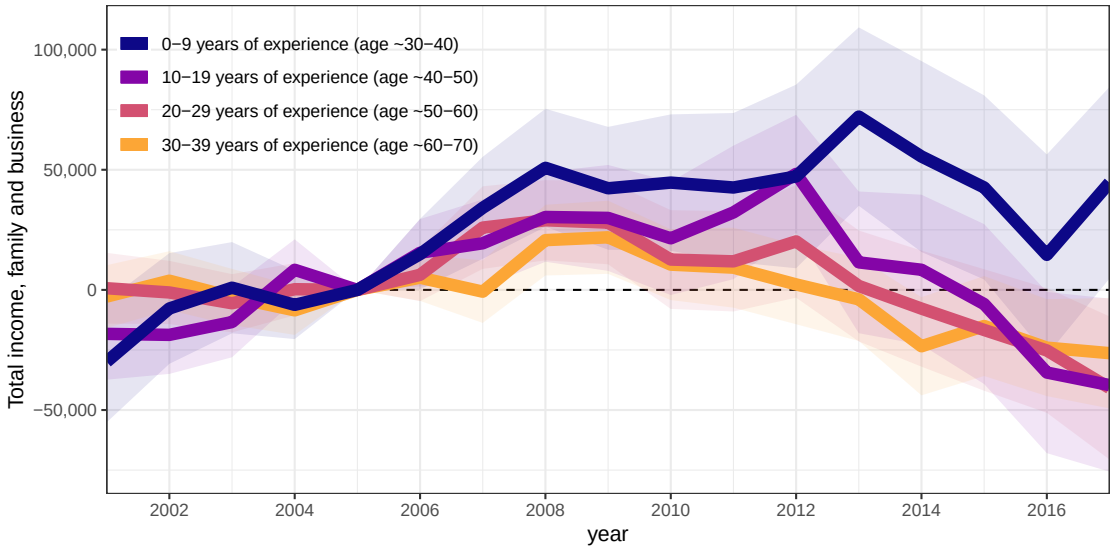
Notes: Estimated treatment effects of the 2006 Ontario reform on measures of firm-level activities. The solid vertical line indicates the reform year. Shaded are 95 percent confidence intervals.

Figure 7: Reform effects by birth cohort

(a) Incorporation



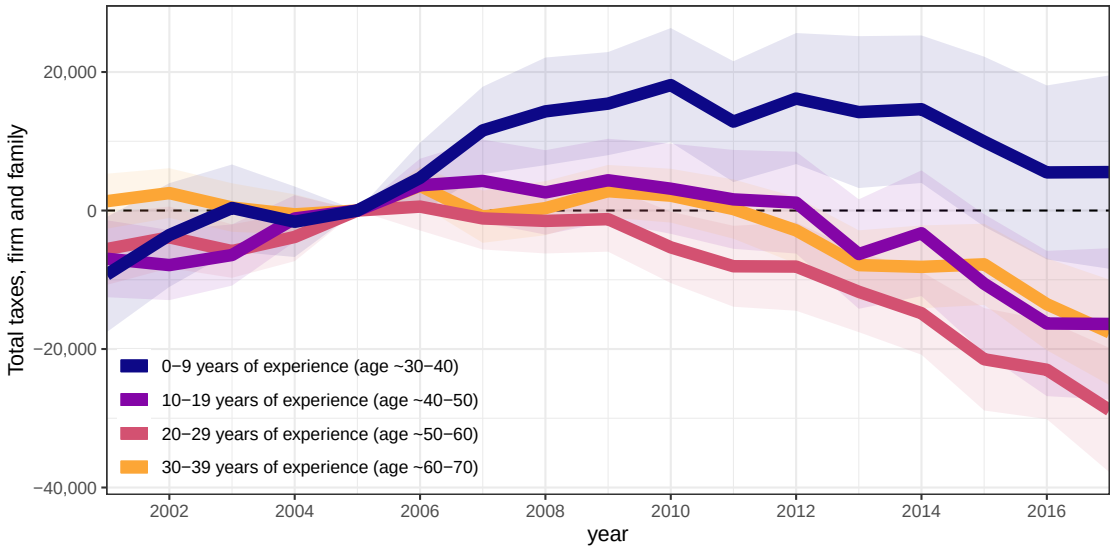
(b) Total incomes



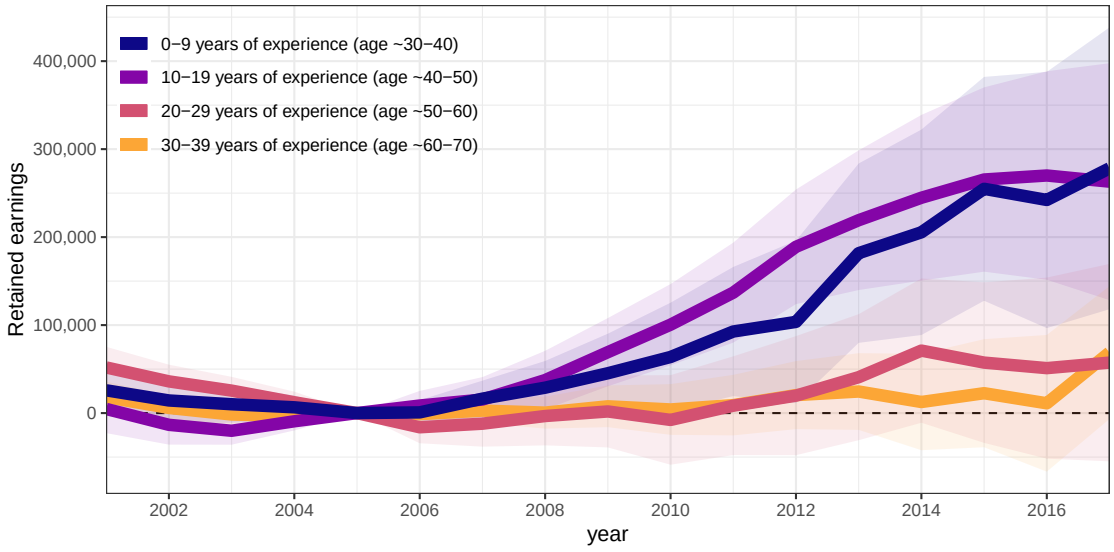
Notes: Estimated treatment effects of the 2006 Ontario reform by birth cohort of the doctor. The solid vertical line indicates the reform year. Shaded are 95 percent confidence intervals.

Figure 8: Reform effects by birth cohort (continued)

(a) Total taxes paid



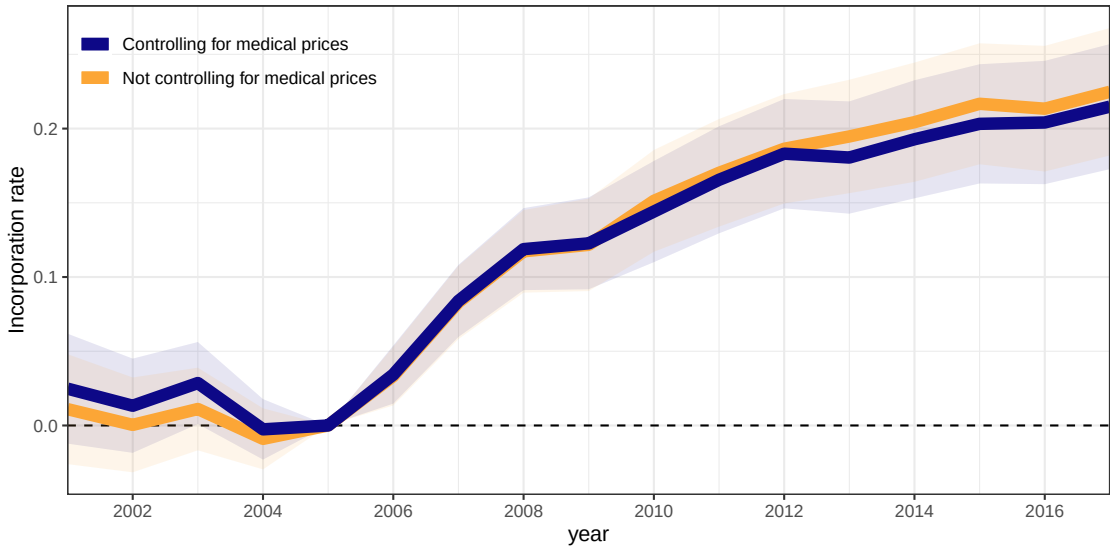
(b) Retained earnings



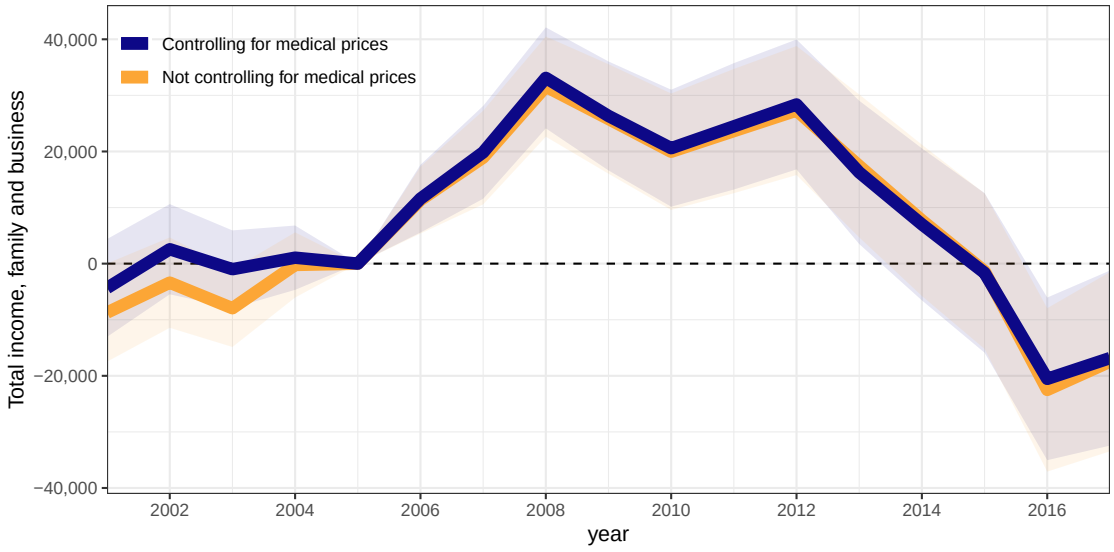
Notes: Estimated treatment effects of the 2006 Ontario reform by birth cohort of the doctor. The solid vertical line indicates the reform year. Shaded are 95 percent confidence intervals.

Figure 9: Robustness of estimates to price of physician services

(a) Incorporation



(b) Incomes



Notes: Estimated treatment effects of the 2006 Ontario reform on total family income. The yellow line depicts our baseline estimates. The blue line depicts annual treatment effects from an alternative model that controls for changes in the price index of physician services, as estimated by the Canadian Institute of Health Information. See text for details.

Table 1: Descriptive Statistics on Matched Sample (pre-reform)

	Ontario		Other Provinces	
	Doctors	Others	Doctors	Others
Overall Income	300,011.03	134,515.31	255,352.56	110,193.08
Overall Taxes	88,313.59	30,510.13	68,000.77	24,193.78
Average Tax Rate	0.24	0.18	0.23	0.15
Age	46.44	45.53	43.39	44.45
Male	0.62	0.63	0.57	0.62
Married	0.80	0.81	0.77	0.79
Family Size	2.97	3.08	2.85	2.99

Notes: This table reports descriptive statistics on doctors in Ontario and other provinces, as well as their matched control business owners across provinces. Overall income is the sum of both pre-tax personal income and pre-tax business income. Average tax rates are defined as the total taxes paid scaled by overall taxable income. All of these variables are measured as pre-reform averages.

Table 2: Reform Effects on Incorporation Rate, Taxable income, and Retained Earnings

	(1) Incorporation Rate	(2) Taxable Income	(3) Taxable Income	(4) Business Income	(5) Retained Earnings
Post × Doctor × ON	0.1526***	-22895.2555***	-13840.3650***	25450.0413***	40065.3749***
	(0.0153)	(1959.1400)	(3073.0693)	(2150.5949)	(14835.3888)
Observations	598,920	600,565	600,565	600,565	600,565
Clusters (Treat)	22,650	22,660	22,660	22,660	22,660
Clusters (Control)	22,630	22,640	22,640	22,640	22,640
Pre-reform Treated Mean	0.166	186,653.8	283,114.3	6,594.83	21,783.97
Adjusted R Squared	0.721	0.757	0.800	0.524	0.602

Notes: This table reports the triple-differences estimates for the impact of the reform on incorporation rate, taxable income, business income, and retained earnings. Taxable income is defined as the total pre-tax personal income. Column (2) indicates the taxable income at the individual level, while Column (3) indicates the taxable income at the family level. Business income is defined as changes in retained earnings plus corporate income taxes. The standard errors are clustered at the family level.

Table 3: Reform Effects on Employment Income and Dividend Income

	(1) Employment Income	(2) Employment Income	(3) Dividend Income	(4) Dividend Income
Post × Doctor × ON	-28,511.93***	3,622.35***	4,399.50***	1,860.48**
	(2,255.93)	(1,323.48)	(1,013.07)	(937.57)
Observations	600,565	600,565	598,920	598,920
Clusters (Treat)	22,660	22,660	22,650	22,650
Clusters (Control)	22,640	22,640	22,630	22,630
Pre-reform Treated Mean	189,083.40	51,661.87	1,085.59	670.86
Adjusted R Squared	0.730	0.707	0.444	0.481

Notes: This table reports the triple-differences estimates for the impact of the reform on incorporation rate, taxable income, business income, and retained earnings. Column (1) indicates employment income of doctors, while Column (2) indicates employment income of the spouse. Column (3) indicates dividend income of doctors, while Column (4) indicates dividend income of the spouse. The standard errors are clustered at the family level.

Table 4: Reform Effects on Personal Income Taxes and Corporate Income Taxes

	Personal Income Taxes	Corporate Income Taxes
Post × Doctor × ON	-8,475.49***	6,997.79***
	(1,080.32)	(508.66)
Observations	600,565	600,565
Clusters (Treat)	22,660	22,660
Clusters (Control)	22,640	22,640
Pre-reform Treated Mean	81,820.7	1,748.21
Adjusted R Squared	0.747	0.614

Notes: This table reports the triple-differences estimates for the impact of the reform on personal income taxes and corporate income taxes. The standard errors are clustered at the family level.

Table 5: Reform Effects on Overall Taxable Income, Taxes Paid, and Average Tax Rates

	Overall Taxable Income	Overall Taxes Paid	Average Effective Tax Rates
Post × Doctor × ON	15,028.96***	-977.90	-0.0064**
	(4,429.52)	(1,341.33)	(0.0027)
Observations	600,565	600,565	598,685
Clusters (Treat)	22,660	22,660	22,650
Clusters (Control)	22,640	22,640	22,630
Pre-reform Treated Mean	294,417.7	84,901.13	0.2403
Adjusted R Squared	0.806	0.795	0.668

Notes: This table reports the triple-differences estimates for the impact of the reform on overall taxable income, total taxes paid, and average effective tax rates. Column (1) indicates overall taxable income, measured as the sum of both pre-tax personal income and pre-tax business income. Column (3) indicates average effective tax rates, defined as the total taxes paid scaled by overall taxable income. The standard errors are clustered at the family level.