Do Swedish multinationals pay less in taxes than domestic firms?

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ABSTRACT

In recent years, there has been growing concern that multinational enterprises (MNEs) engage in strategic tax planning in order to shift profits to low-tax jurisdictions. This common perception is generally confirmed by empirical evidence, which is foremost provided for countries with high corporate taxes and relatively complex tax systems. We investigate whether multinational firms in a country with a comparatively more competitive tax system undertake profit shifting. We do this by using detailed census data from corporate income statements and balance sheets filed by Swedish manufacturing firms between 1997 and 2007. Many previous studies have used tax-rate differences to identify profit shifting. These studies, however, run the risk of overestimating the amount of tax shifting as this method entangles tax-planning activities with the effect a lower corporate tax rate has on resulting profits. We avoid this by comparing MNEs with domestic firms unable to benefit from other tax jurisdictions. In particular, we identify systematic differences in tax payments, earnings (before interest and taxes), and equity ratios between multinational and comparable domestic firms based on propensity score matching. In addition, we examine the tax behavioral impact of acquiring multinational status using difference-in-differences estimations and/or propensity-score matching. Our results reveal that the extent to which multinational firms' have lower tax payments than their domestic counterparts depends on their production characteristics and foreign market outreach. In particular, we find evidence indicating that firms operating in few foreign markets and firms that become multinational engage in profit shifting from Sweden.

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1. INTRODUCTION

There has been growing concern about multinational enterprises' (MNEs) increased use of tax-avoidance schemes, enabling them to pay very little tax. MNEs can reduce their tax payments in several ways. For instance, they can shift revenues by overpricing inputs produced in low-tax jurisdictions (transfer pricing), or they can set up favorable debt structures between entities of the MNE which take advantage of differences in interest deductions and interest payments across countries. Such strategic tax-planning activities lead to lost tax revenues in countries with uncompetitive tax systems, and distorted competition vis-à-vis domestic firms that do not have the same possibilities. In response, attempts have been made for international cooperation and coordination of tax laws, strongly initiated by the G20 2012 initiative and the OECD 2013 action plan.[1] Currently, more than a hundred countries collaborate to counteract base erosion and profit shifting (BEPS) by, for example, country-by-country reporting to mitigate transfer pricing. In addition, several countries have taken unilateral action to restrain MNE cross-border income shifting, typically by restricting interest deductions.[2]

The common perception that MNEs engage in strategic tax planning is generally confirmed by research evidence (Hines, 1999; Devereux, 2006; Heckemeyer and Overersch, 2013). There is, however, considerable variation regarding the empirically quantified magnitudes of tax-planning activities. One challenge is the difficulty in identifying the effects of these activities. Most previous studies have estimated semi-elasticities based on corporate tax-rate differences between home and host country, typically focusing on the impact of tax-rate reductions in the host country. The problem with this method is that it entangles strategic tax planning with the effect a lower corporate tax rate may have on profitability, resulting in an upward bias in the identified profit shifting. In addition, many studies ignore the influence on tax payments of firm-level factors that are not due to strategic tax planning (such as leveraged firms benefit from interest deductions).

In this study, we address these shortcomings. Our approach allows us to detect systematic differences between multinational and domestic firms without relying on changes in corporate tax rate differentials. Also, we have detailed information on various accountancy characteristics that makes it possible to assess the form of profit shifting. We can trace profit shifting through revenue and/or debt shifting by comparing differences in tax payments, earnings before interest and taxes (EBIT), and equity ratios between firms that can exploit their access to foreign tax jurisdictions and firms without such opportunities. To do this we identify differences between multinational firms and comparable domestic firms using propensity score matching techniques. The matching procedure mitigates the endogeneity problem arising from firms' self-selection into multinational status. In addition, we examine whether firms that become multinational change their tax-planning behavior compared to firms that remain domestic using regression analysis and propensity score matching to obtain difference-in-differences estimates. We also perform two-stage least squares estimations including the predicted multinational status as instrument, allowing us to address endogeneity bias in an alternative way.

Our approach most closely resembles contributions by Egger et al. (2010) and Finke (2013) but differs in important ways. First, we study tax planning in a country with a fairly neutral and competitive corporate tax

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[1] This action plan involves measures equipping national governments with means to prevent tax erosion and secure that profits are taxed where they are generated by economic activity

[2] For example, Belgium, Germany and Italy have adopted thin capitalization rules limiting the leverage of multinational firms and other regulations restricting intra-corporate debt transfers.

system,[3] which can yield novel insights into the tax behavior of MNEs compared to results obtained across EU countries (Egger et al., 2010) or for Germany (Finke, 2013). Indeed, our findings indicate that there is considerable heterogeneity in multinational firms' tax-planning strategies stemming from their characteristics and outreach behavior. In addition, we extend the analysis to investigate whether firms that become multinational alter behavior using difference-in-differences estimation methods. This allows us to focus more directly on the behavioral impact of acquiring foreign market links. Our results suggest that firms that become multinational and have limited foreign market outreach engage in profit shifting from Sweden.

The remainder of this paper is organized as follows. Section 2 provides an overview of MNEs' tax-planning strategies with reference to related literature. Section 3 contains a detailed description of our data and a short description of the Swedish corporate tax system. In section 4, the empirical approach is described and motivated. The empirical results are presented and discussed in Section 5 and section 6 concludes.

2. MNEs AND PROFIT SHIFTING

There is mounting evidence that tax competition does occur and that investment and location decisions are affected by corporate tax rates (see, e.g., Devereux and Loretz, 2013). Corporations can avoid taxation without investing or locating operations in a low-tax country, however. They can simply shift profits between jurisdictions to lower their tax burden. Profits are typically shifted in two main ways: by transfer pricing or by strategically structuring intra-company debt. Transfer pricing uses intra-company sales that deviate from the arms' length principle to locate costs in high-tax countries and gains in low-tax countries. MNEs can also establish internal debt structures to reduce company tax payments by allocating more debt to countries that provide generous interest-rate deductions. For example, MNEs can establish intra-company debt, borrowing in jurisdictions with generous interest deductions and channeling interest payments to jurisdictions that tax interest payments at low or zero rates. The two forms of tax-shifting behavior are interrelated and can work as substitutes (Schindler and Schelderup, 2016).

Tax-motivated profit shifting has interested researchers since the late 1980s/early 1990s. Wheeler (1988) and Dworin (1990) observed that foreign-owned subsidiaries in the US reported lower profits than domestic firms. Grubert et al. (1993) investigated this phenomenon further, showing that approximately 50 percent of the difference could be explained by foreign-owned firm characteristics (such as age), national discrepancies in write-off rules and other standard determinants of profit. The remaining difference was attributed to profit shifting. Since then, many studies have investigated the existence and extent of profit-shifting activities. The most common approach in the research field to date is to follow Hines and Rice (1994) and estimate how MNEs allocate profits among foreign affiliates depending on tax-rate differences between home and host countries. This results in a semi-elasticity of profit measuring the percentage change in profit caused by a one percentage point change in the incentive to shift profits abroad. The incentive to shift profits abroad is usually identified as a reduction in the corporate tax differential between the home and host country, typically by a rate decrease in the host country.

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[3] The Swedish tax system, and its place in an international context, is described in the data section.

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The general consensus in the research field is that MNEs shift profits, though estimates vary substantially depending on the applied empirical approach and country studied. The strong evidence of profit and revenue shifting found in the research field may, to some extent, reflect that the most popular research targets are MNEs in either the US or the German tax jurisdiction. Both of these countries face relatively high corporate tax rates and quite efficient tax-avoidance regulation to prevent debt shifting.[4] Hines and Rice (1994) identify a profit semi-elasticity for EBIT of 3 percent, implying that a one percentage point increase in the host country's corporate tax rate reduces EBIT reported by US subsidiaries by 3 percent. In subsequent research the estimates vary substantially depending on the empirical approach applied. Clausing (2009) and Blouin et al. (2012) report semi-elasticities ranging from 3.39 to 0.31 percent. Large semi-elasticities of profit for US multinationals are confirmed by a recent study by Clausing (2016), who found an on average semi-elasticity of 2.29 across specifications using country-fixed effects or controlling for macroeconomic and/or firm-specific production characteristics.

Similarly, several studies indicate that MNEs shift profits from Germany to other European countries.[5] For example, Egger et al. (2010) analyze whether foreign-owned subsidiaries pay less in taxes than subsidiaries owned by domestic firms. Using firm-level data from the AMADEUS database[6] for the 1999-2006 period, they estimate that a foreign-owned subsidiary pays approximately 32 percent less tax than a comparable domestic firm in a high-tax country. The paper also shows that these tax savings mainly stem from MNEs moving profits from high-tax to low-tax locations (such as through transfer pricing) rather than shifting debt to countries in which taxes are relatively high. The authors address the endogeneity issue of tax payments and firm status (i.e., being domestic or multinational) using a propensity score matching approach. This approach improves comparability between MNEs that are able to shift profits and the control group of domestic firms that cannot. Finke (2013) uses the same estimation technique to investigate differences in the tax payments of German MNEs compared with domestic firms for the years 2007 and 2009. She finds that MNEs pay significantly less taxes but that the German tax reform in 2008 (which lowered the corporate tax rate from approximately 40 to 30 percent and introduced stricter anti-avoidance regulation) has led to less profit shifting by these firms.

Other studies using firm-level data and the AMADEUS database include Huizinga and Laeven (2008) who estimate intra-European profit shifting among European MNEs in 1999, and find a semi-elasticity of reported profits with respect to the top statutory tax rate of 1.3 percent. They conclude that there is substantial redistribution of corporate tax revenues within Europe, and their results suggest that many small European countries gain revenues, mainly at Germany's expense. This result coincides with that obtained by Weichenrieder (2009), who investigates profit shifting using firm-level data on German inbound and outbound foreign direct investments (FDI). He provides evidence showing that a ten-percentage point increase in the parent's home country tax rate leads to approximately half a percentage point increase in the reported profits of the German affiliate.

Dharmapala and Riedel (2013) estimate the existence and magnitude of tax-motivated profit shifting among European MNEs for the 1995-2005 period using the AMADEUS database. Instead of corporate tax rate

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[4] See Altshuler and Hubbard (2003), Ruf and Weichenrieder (2012), Overesch and Wamser (2010), Buettner et al. (2012), and Buettner and Wamser (2013).

[5] See, e.g., Huizinga and Laeven (2008) and Weichenrieder (2009).

[6] AMADEUS database provides firm-level information on European MNEs.

differentials, they use exogenous earnings shocks at the parent company to identify the incentive to shift profits and analyze how these shocks disseminate across low- and high-tax affiliates. They find that a positive earnings shock at the parent company leads to a significantly positive increase in pre-tax profit in low-tax subsidiaries compared with the change in pre-tax profit in high-tax subsidiaries. The authors conclude that the magnitude of profit shifting is substantial and that it is mainly driven by strategic use of debt structures among subsidiaries. However, their more targeted empirical approach results in smaller effects than those regularly found in previous studies.

Heckemeyer and Overesch (2013) undertake a meta-analysis of 25 studies on tax-driven profit shifting. They obtain a semi-elasticity of pre-tax profit of approximately 0.8. However, in contrast to Dharmapala and Riedel (2013), they find that two-thirds of the profit shifting stems from transfer pricing activities, confirming the general consensus in the literature that transfer pricing is the dominant form of profit shifting undertaken by MNEs.[7] This view is in line with empirical and theoretical evidence that debt shifting based on tax differentials is modest.[8]

3. DATA

We use census data on firms active in the Swedish manufacturing sector between 1997 and 2007. The data set contains information on domestic production characteristics (with the exception of employee education data which are obtained from a yearly performed labor market survey), domestic accountancy-related factors, and firms' engagement in foreign direct investment (FDI). To ensure that the data are representative of ordinary firm behavior, and that our results are comparable to those of other studies, we restrict the data to include Swedish privately owned manufacturing firms with over 10 employees. Swedish ownership is defined by a national shareholder ownership of at least 50 percent. The data on foreign engagement are based on the number of employees in foreign affiliates and we classify a firm as multinational if it has at least one employee in a foreign country. Other firms are referred to as domestic. In total, there are 33,033 firms in the sample of which 3,266 have a foreign link sometime over the period. Under the observed period, approximately 14 percent of the firms changed from being domestic to becoming multinational according to our definition. Firms are categorized into industries based on the 2-digit level Swedish classification (SNI2002), which corresponds to the EU industry classification NACE Rev 1.1.[9]

Table 1 presents descriptive statistics for the domestic and multinational firms in our sample. Notably, these two firm categories display considerable differences in various characteristics. Firms that are multinational have more than 10 times larger net sales on average and capital stocks that are almost 16 times larger than their domestic counterparts. Multinational firms also have higher capital intensity (measured as the capital stock per employee in natural logarithms) and higher skill intensity (measured as the share of employees with tertiary education)

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[7] Further empirical evidence supporting this conjecture is presented by, e.g., Pak and Zdanowicz (2001) and Bartelsman and Beetsma (2003).

[8] See, e.g., Bartelsman and Beetsma (2003), Desai et al. (2004), Mintz and Smart (2004), Buettner et al. (2009), Pak and Zdanowicz (2001) and Schindler and Schjelderup (2016).

[9] Observations for the 1997-2002 time period have been reclassified to conform to this standard using concordance tables from Statistics Sweden.

compared to domestic firms, and they are much more prone to import and export. There are 61.1 percent importers and 63.6 percent exporters in the multinational category, compared to 22.6 percent importers and 25.4 percent exporters in the domestic category. Likewise, there are large discrepancies in accountancy-related characteristics between these categories. Multinational firms have almost 11 times higher earnings, and more than 11 times higher tax payments than domestic firms. On the other hand, their equity ratio – measured as adjusted equity (the sum of equity and untaxed reserves) divided by the sum of adjusted equity and debt – is below that of domestic firms. As can be seen in the table, the raw data standard deviations are substantial in relation to mean values. In our forthcoming analysis, we therefore take natural logarithms of variables that display large uneven variation when performing probit and least squares estimations, to more effectively comply with assumptions underlying our applied estimation methods.

TABLE 1

Descriptive firm statistics

Sample	Variable	Mean	Min	Max	Std
Domestic firms	Net sales	$2.78\cdot10^4$	0.716	$2.23\cdot10^7$	$2.70\cdot10^5$
	Capital stock	$2.11\cdot10^4$	0.747	$2.86\cdot10^7$	$3.64\cdot10^5$
	Capital intensity	4.91	-3.03	13.47	1.32
	Skill intensity	0.137	0	1	0.147
	Importer	0.226	0	1	0.381
	Exporter	0.254	0	1	0.404
	Earnings (EBIT)	1130	$-4.68\cdot10^5$	$1.32\cdot10^6$	$2.00\cdot10^4$
	Equity ratio	0.400	0.002	0.995	0.194
	Tax payments	268	$-1.75\cdot10^5$	$3.29\cdot10^5$	4250
Multinational firms	Net sales	$2.81\cdot10^5$	0.929	$6.86\cdot10^7$	$1.75\cdot10^6$
	Capital stock	$3.35\cdot10^5$	0.942	$5.97\cdot10^7$	$2.18\cdot10^6$
	Capital intensity	5.64	-2.54	14.74	1.56
	Skill intensity	0.212	0	1	0.183
	Importer	0.611	0	1	0.460
	Exporter	0.636	0	1	0.457
	Earnings (EBIT)	$1.21\cdot10^4$	$-6.84\cdot10^5$	$3.34\cdot10^6$	$9.87\cdot10^4$
	Equity ratio	0.365	0.006	0.995	0.184
	Tax payments	3116	$-3.44\cdot10^5$	$1.06\cdot10^6$	$2.82\cdot10^4$

All firm data are from Statistics Sweden and Swedish Agency for Growth Policy Analysis and were provided by Growth Analysis under a strict confidentiality agreement. Tax payments, earnings, and net sales are reported in corporate income statements. Capital stocks, equity, untaxed reserves, and debts are reported in corporate balance sheets. Pecuniary data, which are reported in the unit of thousand Swedish crowns (SEK),[10] have been inflation adjusted by industry producer price indices from Statistics Sweden.

Figure 1 shows a histogram of multinational firms' market outreach as defined by the number of foreign markets on which they operate (identified in terms of foreign employment). The multinational firms in our sample display a regular outreach pattern. Most enterprises are present in only one foreign market, a majority of enterprises have operations in few markets, and only some enterprises are active in a large number of markets.

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[10] On average, a Swedish crown corresponds to about 0.11 euro in the investigated time period.

FIGURE 1

Histogram of multinational firms' market outreach
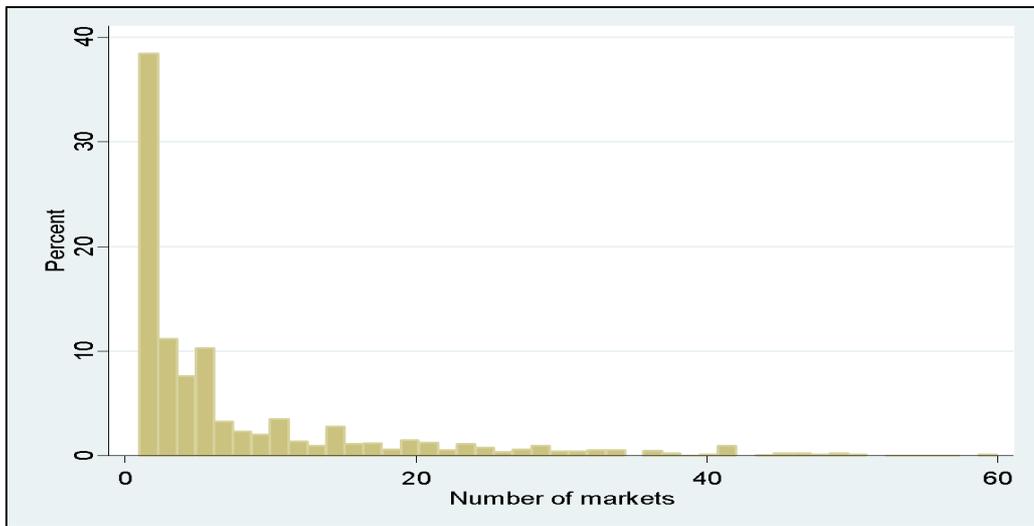
Source: Statistics Sweden. Authors' calculation.

3.1 The Swedish tax system

In our sample period 1997-2007 the Swedish corporate tax system was characterized by a constant tax rate of 28 percent, which made Sweden fairly competitive compared to similar countries.[11] Figure 2 presents the corporate tax rate development in Sweden, Germany, the US, and averages for OECD and the EU countries over the time period. Until 2003, Sweden's tax rate was well below the corporate tax rates of comparable countries. After the 2004 EU enlargement, the average EU rate declined below the Swedish rate. The time period is characterized by a general tendency for the EU and OECD countries to reduce their corporate tax rates, a tendency well established in the tax competition literature. In addition, the pattern displayed in Figure 2 is in accordance with the literature suggesting that it is easier for larger countries to stay competitive with higher corporate tax rates than smaller countries (Wilson, 1991; Bucovetsky 1991). However, fiercer tax competition from smaller countries will place larger countries under stronger competitive pressure and force them to adapt their tax systems (see, e.g., Baldwin and Krugman, 2004; Hansson and Olofsdotter, 2013).

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[11] In 1991, the tax corporate tax rate was lowered from 52 to 30 percent in a tax-cut base-broadening overall tax reform. In 1994 the rate was reduced further to 28 percent.

FIGURE 2

Corporate tax rate development in Sweden, Germany, the US, OECD and EU, 1997-2007.
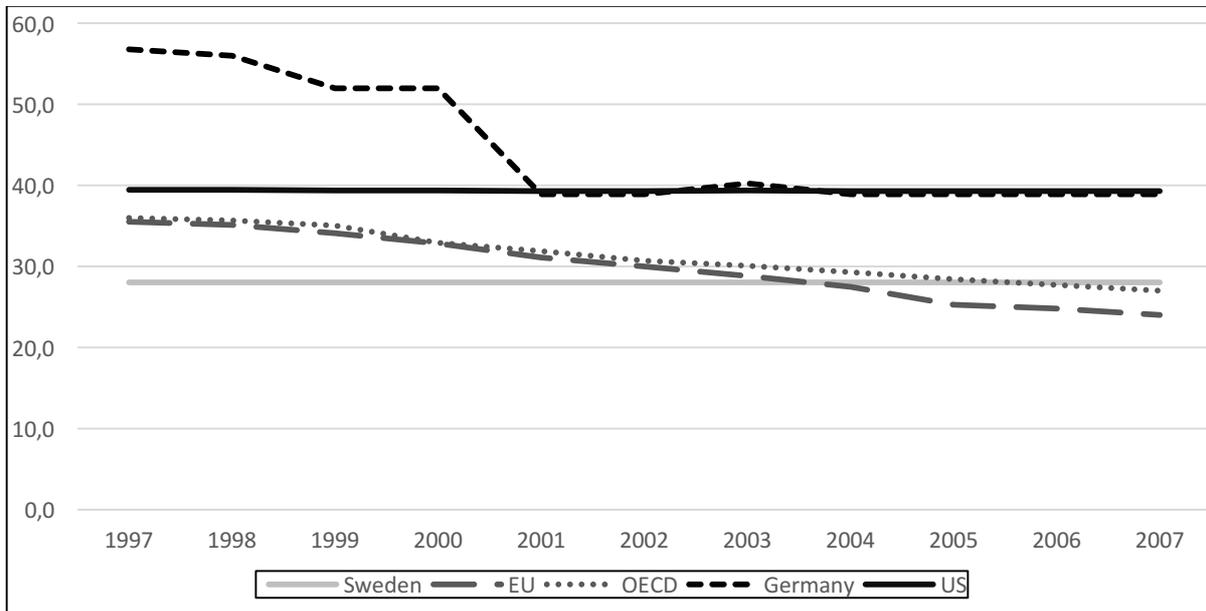
Source: OECD Tax Database

The Swedish tax system is fairly simple and rests on the main principle of neutrality, with the objective to treat all organizational forms neutrally in order not to impact the choice of organizational form.[12] Apart from interest deductions the tax system offered limited deductions and allowances, especially in the time period studied (Thomann, 2014).[13] This makes the Swedish case suitable for tracing tax-driven profit shifting by comparing tax payments and other accounting-related measures of domestic and multinational firms.

The Swedish tax system taxes each firm individually and does not employ corporate group taxation. Hence, in order to obtain neutrality between individual firms and firms within a group, group contributions are allowed without any tax consequences. That is, firms within a group can transfer losses to profit-making firms in order to reduce tax payments, resulting in equal treatment of a group of firms and an individual firm. Likewise, to create tax neutrality between firms that have a smooth profit profile over years to those firms with time-varying profit profiles, accrual funds and loss carryforwards are granted. However, despite the aim of neutrality, differences in firm-related factors can make the tax system non-neutral in practice. For example, like most other countries, the Swedish tax system grants allowance for interest deductions but not for costs of equity giving debt-financed firms a tax advantage over equity-financed firms. Another factor that could affect the neutrality is depreciation rules. Even though the rules concerning depreciations in Sweden are simple and straightforward since the 1991 tax reform, there are situations, especially for capital assets, where accelerated depreciation is allowed.

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[12] The overarching 1991 tax reform simplified the system and reduced allowances, deduction, reservations, and loopholes.
[13] Until 2009 there were no limitations to interest deductions. In 2009, limitations were introduced for groups in order to counteract tax-planning activities after a Swedish Tax Authority evaluation had found indications of abusive use of interest deductions.

7

3.2 Firms' access to foreign tax jurisdictions

Figure 3 shows a histogram of the minimum foreign corporate tax rate accessed by the MNEs' in our sample. The lowest foreign corporate tax rates that these corporations face range from zero to 57.5 percent. Interestingly, more than 40 percent of the MNEs do not have access to a lower tax rate through foreign market establishment than the Swedish rate. In fact, the largest share of foreign operations is located in countries that also have a 28 percent tax rate. This can be explained by the fact that many FDI destinations are in other Nordic countries which had an equivalent corporate tax rate during at least part of the investigated time period.

FIGURE 3

Histogram of minimum corporate tax rate accessed by MNEs
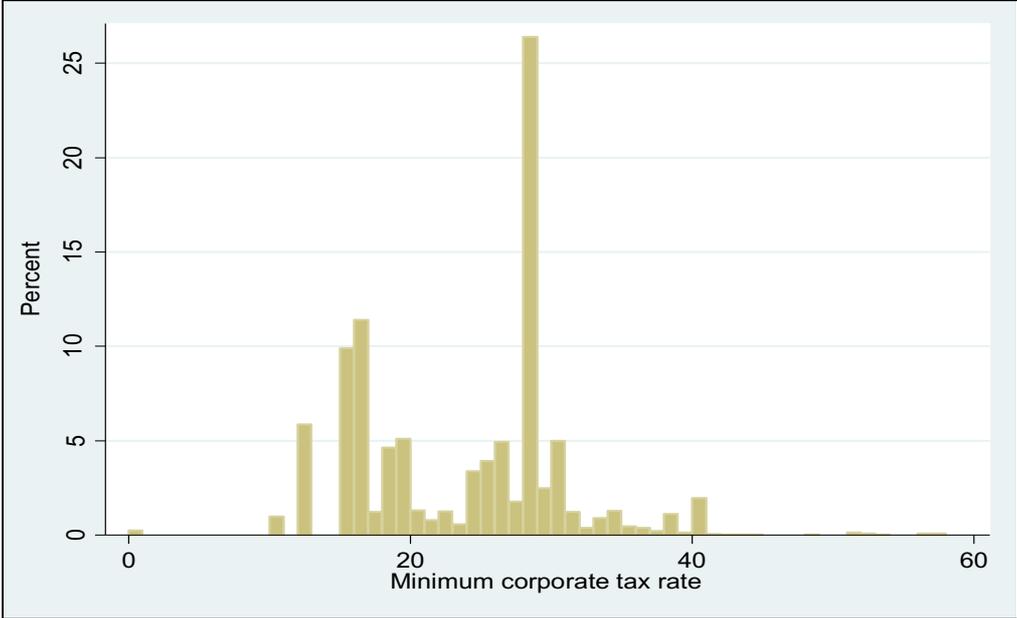
Source: Statistics Sweden. Authors' calculation.

The tax-planning opportunities for multinational firms will depend on their access to low-tax jurisdictions. Figure 4 shows a box plot of the lowest corporate tax rate attained through foreign market links by firms in terms of the number of markets in which they operate. As seen, firms with links to more markets access more favorable tax jurisdictions. This is clear from comparing the lowest foreign tax rate faced by the median firm in each category. It is slightly above (28.9) the Swedish rate for firms with one market link, indicating that most firms in this category encounters a higher tax rate via their foreign market. For firms with two to five links, the lowest foreign tax rate of the median firm is 28 percent. The median foreign tax rate continues to descend down to 15.1 percent for firms with more than 25 market linkages. This pattern is consistent with prior evidence on European multinational firms' behavior showing that manufacturing firms are more prone to invest in larger markets and in markets with lower trading costs (see, e.g., Mayer and Ottaviano, 2008). From a Swedish perspective, these are regularly locations with at least as high corporate taxes as in Sweden.

FIGURE 4

Firms' outreach to low-tax destinations
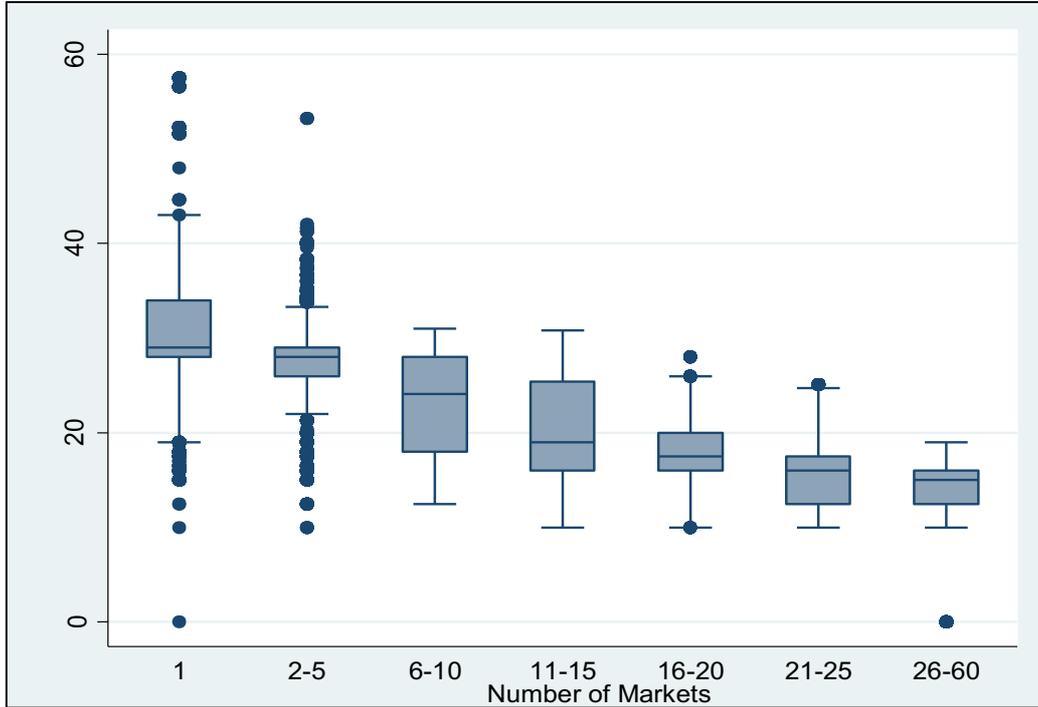
Source: Statistics Sweden. Authors' calculation.

4. EMPIRICAL APPROACH

To detect systematic differences in the tax planning behavior of multinational and domestic firms, we use propensity score matching techniques to compare tax payments for these firm categories. We argue that this is a more appropriate method than the commonly used regression analysis tracing the impact of tax rate changes, which intertwines increased profits from multinational activity with profit shifting. Since we include only Swedish firms, our approach has the additional advantage of comparing more homogenous firms with ownership in the same market. This differs from, for example, Egger et al. (2010) who instead study firms with ownership spread over multiple European countries incorporating other country specific factors as well.

Propensity score matching relies on the computation of a propensity score PS, which is the probability that firm i is multinational instead of domestic, based on a vector of observable variables X taking the values characteristic of multinationals x, $PS(x) = \Pr(MNE_{it} = 1| X = x)$. We use kernel- and radius-matching algorithms to identify counterfactual outcomes. The kernel-matching algorithm includes all domestic firms in the control group and constructs a synthetic outcome equal to a weighted average according to a selected distribution function (in our case a quartic (biweight) function) in which closer matches to the propensity score of the depicted multinational receive greater weight. The radius-matching algorithm includes domestic firms within a radius defined by a

propensity score deviation threshold (set to 0.01 in our case) in the control group. There is a tradeoff between bias and precision in using these algorithms. While kernel matching has a larger bias than radius matching because it includes very different domestic firms in the control group, it also gives stronger precision. The two matching algorithms are therefore complementary.

Using these techniques, domestic firms are ranked by the propensity score obtained from a probit estimation of multinational status. To find appropriate determinants of being a multinational firm, we draw upon the heterogeneous-firm literature in the international economics research field. There is strong evidence that the larger and more productive firms become multinational more frequently, and that firms' self-select into multinational status regardless of whether foreign production is set up to establish a sales platform or source intermediate inputs (Antràs and Helpman, 2004; Helpman et al., 2004).[14] Firms with higher capital intensity are more prone to engage in FDI because they face lower transaction costs in establishing international production networks and, like firms with high skill intensity, they gain more from internalizing foreign intermediate input production (Antràs, 2003; Corcos et al., 2013; Thede, 2017).[15] Firms regularly pursue a gradual internationalization process whereby they establish intermediate input sourcing channels through importing and/or sales distribution networks through exporting before becoming multinational. This sequencing can be explained by productivity enhancement from the use of imported intermediate inputs due to learning, variety and/or quality effects (Kasahara and Rodrigue, 2008; Kugler and Verhooven, 2009; Colantone and Crinò, 2014) and reduced market uncertainty from opening up foreign sales channels through exporting (Concini et al., 2016).

The following probit model depicts the probability that firm i, in industry j, is multinational at time t:

$$\Pr(MNE_{ijt} = 1) = \Phi(\alpha_j + \alpha_t + \beta_0 Production\ size_{ijt} + \beta_1 Capital\ intensity_{ijt} \qquad (1)$$

$$+\beta_2 Skill\ intensity_{ijt} + \beta_3 Importer_{ijt} + \beta_4 Exporter_{ijt})$$

where MNE_{ijt} is an indicator variable of firm i's multinational status at time (year) t, $\Phi(\cdot)$ is the cumulative standard normal distribution function, α_j and α_t are industry and time (year) specific effects, $Production\ size_{it}$ is firm i's production size measured as net sales (in natural logarithms) in the home market at time t, $Capital\ intensity_{it}$ and $Skill\ intensity_{it}$ are firm i's capital and skill intensity in home-market production at time t, while $Importer_{it}$ and $Exporter_{it}$ are indicator variables of firm i's importing and exporting status at time t.

We trace discrepancies in firm behavior by computing the average differences in tax payments, EBIT, and equity ratios between firms in the multinational category (treated) and matched firms (untreated). We compute the average treatment effect on the treated (ATT) to extract the effect of multinational status on firm behavior. To control for systematic firm-related differences between multinational and domestic firms that are unrelated to tax reallocations across foreign markets, we also compute corresponding ATT estimates based on subsamples of firms. Specifically, subsamples are based on characteristics central for tax-planning opportunities such as being part of a

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[14] See Greenaway et al. (2007) and Antràs (2014) for surveys on findings in the research field.

[15] It should be noted that empirical evidence on the impact of skill intensity on firms' FDI engagement is mixed. Nunn and Trefler (2008), Bernard et al. (2010) and Corcos et al. (2013) provide statistical support of this relationship, which is not found by Antràs (2003) and Yeaple (2006).

corporate group and/or having large capital stock.

Another way to investigate differences in tax planning behavior between multinational and domestic firms is to examine whether firms that become multinational alter their tax planning behavior. To identify the behavioral change of firms that change organizational form, difference-in-differences estimates are obtained from the following linear regression equation:

$$y_{ijt} = \alpha_j + \alpha_t + \beta_0 MNE_{ijt} + \beta_1 Time\ after_{ijt} + \beta_2 MNE_{ijt} \cdot Time\ after_{ijt} + \varepsilon_{ijt} \qquad (2)$$

where y_{ijt} is the outcome variable (tax payments, earnings, or equity ratio),[16] $Time\ after_{it}$ is a dummy variable that takes the value 1 in the entire time period after the status change and ε_{ijt} is an error term. The parameter β_2 is the difference-in-differences parameter estimate, which captures the effect of status change in form of the average treatment effect (ATE) comparing the outcome variable change of firms acquiring multinational status (treated) to other firms (untreated). The ATE effect is the impact of becoming multinational in relation to all (unmatched) firms that remain domestic. Equation 2 is estimated using OLS with robust standard errors.

An advantage of using equation 2 to identify the ATE is that the estimate is unbiased with respect to time and industry invariant effects. A disadvantage is that it is biased by the inherent difference between firms that are domestic and multinational. To remedy this endogeneity problem, which correlates the regular difference-in-differences parameter with the error term, we also adopt an instrumental variable approach. Specifically, we use the standard method of estimating a two-stage least squares difference-in-differences parameter based on the predicted treatment status using a probit model estimated at the first stage.[17] To instrument the multinational status indicator in equation 2, we predict the MNE_{ijt} value using the probability that firm i is multinational at time t based on the probit model estimated in equation 1.

We also compute difference-in-differences ATT estimates extracting the average effect of becoming multinational (treated) compared to remaining domestic (untreated) at a given time of observation using propensity score matching. This is done for the outcome variable changes previously used to estimate ATE effects. Firms are matched by applying previously described algorithms on a propensity score equal to the probability that a firm acquires multinational status. In the underlying probit model, an indicator variable of status change depends on previously described explanatory factors of multinational status. Since we investigate the impact of the status change, the sample size is reduced compared to our prior difference-in-differences estimations.

5. ESTIMATION RESULTS

We start this section by investigating the impact of the Swedish tax system on the behavior of multinational firms compared to domestic firms using the previously described propensity score approach. Table 2 reports the results for the probit model of MNE status (equation 1). The estimates lend strong statistical support to the explanatory variables, showing that the probability of being a multinational increases with production size, capital and skill intensity, and if the firm is an importer or exporter.

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[16] Tax payments and earnings are in natural logarithms.
[17] See Woolridge (2002).

TABLE 2

Probit regression results of multinational status

Variable	Estimate
Production Size	0.494 (0.007)***
Capital intensity	0.083 (0.006)***
Skill intensity	1.136 (0.052)***
Importer	0.197 (0.020)***
Exporter	0.157 (0.021)***
Industry dummy	X
Year dummy	X
Log likelihood	-20511.756
Pseudo R2	0.263
Nobs	65534

Notes: Standard errors reported in parentheses.
***p < 0.01.

Table 3 presents unmatched and matched differences between multinational and domestic firms for the whole sample. In comparison, the matched differences are much smaller, and for the equity ratio even of different sign. This indicates that the bias reduction obtained through matching is important. Testing for this, we find that our propensity score matching reduces the bias down to as much as between 0.3 to 4.1 percent using kernel matching, and between 0.5 to 3.3 percent using radius matching. Turning to the results, the matched tax differences are positive and significant (at the five percent level). Multinational firms pay on average about 1.01 to 1.37 million SEK more in taxes than comparable domestic firms. The matched earnings differences are positive and significant (at the five percent level). Earnings are on average about 4.55 to 5.14 million larger in multinational firms compared to matched domestic firms. The matched equity ratio differences are negative and significant (at the one to ten percent level). The equity ratio is on average 1.7 to 1.9 percent lower for multinationals, implying that these firms have higher leverage than their matched domestic counterparts. The results are consistent with profit shifting to Sweden, in line with previous results obtained in research on intra-European tax planning (Huizinga and Laeven, 2008), through both transfer pricing and debt reallocation.

TABLE 3

Propensity score matching results for the whole sample

Variable	Method	Treated (Support)	Untreated (Support)	Difference (S.E.)
Tax payments	Unmatched	5828	596	5231 (246)***
	Matched, Kernel	5828 (9896)	4819 (55638)	1009 (564)*
	Matched, Radius	5828 (9896)	4463 (55638)	1365 (564)**
Earnings (EBIT)	Unmatched	28030	2543	25487 (943) ***
	Matched, Kernel	28030 (9910)	23476 (55639)	4555 (2151)**
	Matched, Radius	28030 (9910)	22887 (55639)	5143 (2153)**
Equity ratio	Unmatched	0.357	0.338	0.019 (0.002)***
	Matched, Kernel	0.357 (6215)	0.363 (37707)	-0.006 (0.003)*
	Matched, Radius	0.357 (6215)	0.365 (37707)	-0.007 (0.003)***

Note:*1.645 ≤ |t| < 1.96, **1.96 ≤ |t|< 2.576, ***|t| ≥ 2.576.

Belonging to a corporate group allows for intra-group transfers that could reduce tax payments. Also, firms with large capital stocks benefit from debt financing and interest deductions as well as accelerated depreciation rules. We therefore proceed to estimate our outcome variables for firms belonging to domestic corporate groups, firms with large capital stocks (exceeding the median value), and the combination of these firm categories. The results are presented in Table 4. A first observation is that the absolute values of tax payments and earnings become larger for both treated and untreated firms. This indicates that we are dealing with large firms. Second, we observe that while the results for firms with large capital stocks are similar to those for the whole sample (in Table 3), the findings are different when focusing on domestic corporate-group firms. In particular, there is no indication of strategic tax planning as the matched tax differences are now insignificant. The matched earnings differences are also insignificant. In contrast, the result that multinationals have on average lower equity ratios is upheld for domestic corporate-group firms (at the five to ten percent significance level). The consistently lower equity ratios of multinational firms indicate that they are more leveraged and reap larger benefits from generous interest deductions provided by the tax system.

TABLE 4

Propensity score matching results for firms in domestic corporate groups and/or with large capital stocks

Firms in domestic corporate groups				
Variable	*Method*	*Treated (Support)*	*Untreated (Support)*	*Difference (S.E.)*
Tax payments	Unmatched	5903	911	4992 (348)***
	Matched, Kernel	5903 (9749)	5256 (28170)	647 (579)
	Matched, Radius	5903 (9749)	5243 (28170)	660 (579)
Earnings	Unmatched	28523	3860	24663 (1331)***
	Matched, Kernel	28523 (9763)	25176 (28171)	3347 (2206)
	Matched, Radius	28523 (9763)	25649 (28171)	2874 (2209)
Equity ratio	Unmatched	0.358	0.344	0.132 (0.003)***
	Matched, Kernel	0.358 (6126)	0.364 (18991)	-0.007 (0.003)**
	Matched, Radius	0.358 (6126)	0.368 (18991)	-0.010 (0.003)***
Firms with large capital stocks				
Variable	*Method*	*Treated (Support)*	*Untreated (Support)*	*Difference (S.E.)*
Tax payments	Unmatched	6222	766	5456 (300)***
	Matched, Kernel	6222 (9211)	5133 (40034)	1089 (608)*
	Matched, Radius	6222 (9211)	4656 (40034)	1566 (608)***
Earnings	Unmatched	29953	3297	26656 (1152)***
	Matched, Kernel	29953 (9224)	25127 (40034)	4826 (2318)**
	Matched, Radius	29953 (9224)	23672 (40035)	6281 (2320)***
Equity ratio	Unmatched	0.360	0.347	0.123 (0.003)***
	Matched, Kernel	0.360 (5957)	0.365 (29522)	-0.007 (0.003)*
	Matched, Radius	0.360 (5957)	0.367 (29522)	-0.007 (0.003)**
Firms in domestic corporate groups with large capital stocks				
Variable	*Method*	*Treated (Support)*	*Untreated (Support)*	*Difference (S.E.)*
Tax payments	Unmatched	6290	1102	5188 (406)***
	Matched, Kernel	6290 (9089)	5617 (22180)	673 (623)

	Matched, Radius	6290 (9089)	5710 (22180)	580 (624)
Earnings	Unmatched	30425	4692	25733 (1552)***
	Matched, Kernel	30425 (9102)	27011 (22181)	3413 (2377)
	Matched, Radius	30425 (9102)	27608 (22181)	2816 (2381)
Equity ratio	Unmatched	0.360	0.353	0.007 (0.003)***
	Matched, Kernel	0.360 (5877)	0.367 (16049)	-0.007 (0.003)*
	Matched, Radius	0.360 (5877)	0.368 (16049)	-0.008 (0.004)**

Note: *1.645 ≤ |t| < 1.96, **1.96 ≤ |t|< 2.576, ***|t| ≥ 2.576.

So far, our investigation has focused on the multinational aspect per se, without taking the multinational firm's market links into account. To narrow down the question of MNEs' strategic tax planning, the tax regime in foreign locations should be considered. Due to the outreach behavior of firms described in section 3.2, low-tax jurisdictions may not be reached by typical multinationals operating on/in few markets. We proceed by focusing on multinational firms that have at least one link to either a high-tax country or low-tax country, respectively. A high-tax country is defined by a corporate tax rate above or equal to the Swedish tax rate of 28 percent and a low-tax country is defined as a country with a corporate tax rate below or equal to 28 percent. The results are provided in Table 5. For multinational firms accessing high-tax jurisdictions, only the unmatched differences are significant. This further weakens previous findings of profit shifting to Sweden, and indicates that earlier results may stem from a comparison with systematically different domestic firms. Hence, we find no evidence that profits are strategically located to Sweden when comparing with similar firms.

For multinational firms accessing low-tax jurisdictions, the pattern is similar to the results obtained for the whole sample (in Table 3). That is, multinational firms pay more in taxes and have higher earnings. We also notice that the absolute levels of the outcome variables and the size differences between treated and untreated firms are larger. As the subsample of firms in Table 5 are firms with more international linkages (as shown in Figure 4), these findings are an indication of that we are dealing with larger firms and, hence, that they have higher earnings and tax payments.

TABLE 5

Propensity score matching results for multinational firms with high- and low-tax links

Multinational firms with high-tax links				
Variable	*Method*	*Treated(Support)*	*Untreated(Support)*	*Difference (S.E.)*
Tax payments	Unmatched	1936	572	1363 (120)***
	Matched, Kernel	1936 (4136)	1908 (55627)	27.5 (257)
	Matched, Radius	1936 (4136)	2021 (55627)	-85.2 (255)
Earnings (EBIT)	Unmatched	9890	2455	7435 (457)***
	Matched, Kernel	9890 (4141)	8838 (55628)	1052 (765)
	Matched, Radius	9890 (4141)	9129 (55639)	761 (751)
Equity ratio	Unmatched	0.358	0.338	0.020 (0.003)***
	Matched, Kernel	0.358 (2727)	0.359 (37706)	-0.000 (0.004)
	Matched, Radius	0.358 (2727)	0.360 (37706)	-0.002 (0.004)
Multinational firms with low-tax links				

Variable	Method	Treated(Support)	Untreated(Support)	Difference (S.E.)
Tax payments	Unmatched	7726	596	7130 (292)***
	Matched, Kernel	7726 (6220)	5746 (55638)	1980 (836)**
	Matched, Radius	7726 (6220)	5959 (55638)	1767 (837)**
Earnings (EBIT	Unmatched	35407	2543	32864 (1114)***
	Matched, Kernel	35407 (6232)	28638 (55639)	6769 (3169)**
	Matched, Radius	35407 (6232)	29234 (55639)	6173 (3171)*
Equity ratio	Unmatched	0.355	0.338	0.016 (0.003)***
	Matched, Kernel	0.355 (3889)	0.363 (37707)	-0.008 (0.004)**
	Matched, Radius	0.355 (3889)	0.365 (37707)	-0.011 (0.004)***

Note: *$1.645 \leq |t| < 1.96$, **$1.96 \leq |t| < 2.576$, ***$|t| \geq 2.576$.

To check how the low-tax link results are affected by restricting the sample to firms favored by the tax system, we repeat the propensity score matching exercise for domestic corporate-group firms and/or firms with larger than median capital stock. The results, which are presented in Table 6, display a similar pattern to our previous findings though a main difference is that firms in domestic corporate groups (with and without larger capital stocks) have significantly larger tax payments. We also notice that the absolute levels of tax payments and earnings are larger in these categories (compared to Table 5), which indicates that these are larger firms (with wider outreach).

TABLE 6

Propensity score matching results for firms with low-tax links in domestic corporate groups

and/or with large capital stocks

Firms in domestic corporate groups				
Variable	Method	Treated(Support)	Untreated (Support)	Difference (S.E.)
Tax payments	Unmatched	7841	911	6930 (412)***
	Matched, Kernel	7841 (6124)	6206 (28170)	1634 (855)*
	Matched, Radius	7816 (6111)	6142 (28170)	1674 (857)*
Earnings (EBIT)	Unmatched	36113	3860	32252 (1570)***
	Matched, Kernel	36113 (6136)	30913 (28171)	5200 (3238)
	Matched, Radius	35672 (6123)	29647 (28171)	6025 (3244)*
Equity ratio	Unmatched	0.335	0.344	0.010 (0.003)***
	Matched, Kernel	0.335 (3829)	0.364 (18991)	-0.009 (0.004)**
	Matched, Radius	0.335 (3829)	0.365 (18991)	-0.010 (0.004)**
Firms with large capital stocks				
Variable	Method	Treated(Support)	Untreated (Support)	Difference (S.E.)
Tax payments	Unmatched	8193	766	7427 (355)***
	Matched, Kernel	8193 (5837)	6156 (40034)	2037 (892)**
	Matched, Radius	8193 (5837)	6325 (40034)	1869 (893)**
Earnings (EBIT)	Unmatched	37546	3297	34249 (1354)***
	Matched, Kernel	37546 (5848)	30939 (40035)	6607 (3383)*
	Matched, Radius	37546 (5848)	31965 (40035)	5581 (3385)*
Equity ratio	Unmatched	0.356	0.347	0.009 (0.003)***
	Matched, Kernel	0.356 (3756)	0.365 (29522)	-0.009 (0.004)**

Variable	Method	Treated (Support)	Untreated (Support)	Difference (S.E.)
	Matched, Radius	0.356 (3756)	0.367 (29522)	-0.010 (0.004)**

Firms in domestic corporate groups with large capital stocks

Variable	Method	Treated (Support)	Untreated (Support)	Difference (S.E.)
Tax payments	Unmatched	8299	1102	7197 (479)***
	Matched, Kernel	8299 (5758)	6660 (22180)	1639 (917)*
	Matched, Radius	8338 (5744)	6682 (28180)	1656 (910)*
Earnings (EBIT)	Unmatched	38222	4692	33530 (1823)***
	Matched, Kernel	38222 (5769)	33282 (22181)	4940 (3454)
	Matched, Radius	38222 (5753)	32332 (22181)	5517 (3464)
Equity ratio	Unmatched	0.357	0.353	0.004 (0.003)
	Matched, Kernel	0.357 (3702)	0.366 (16049)	-0.009 (0.004)**
	Matched, Radius	0.357 (3678)	0.366 (16049)	-0.010 (0.004)**

Note: *$1.645 \leq |t| < 1.96$, **$1.96 \leq |t| < 2.576$, ***$|t| \geq 2.576$.

The multinationals that we focus on in Table 6 are likely to be quite different from their domestic counterparts as seen in Table 1. One way to deal with this heterogeneity is to restrict the treatment group to multinational firms that operate in few foreign markets and therefore are more similar to domestic firms (see, e.g., Yeaple, 2009). The results for MNEs with low-tax links operating in at most three foreign market are presented in Table 7.[18] These multinational firms display a quite different pattern compared to other types of MNEs. In contrast to previous results, we now find matched negative differences for tax payments (at the one percent level with radius matching), earnings (at the one to five percent level), and equity ratios (at the one percent level). Interestingly, the difference in leverage is now considerably larger. On average, these multinational firms pay up to 19 percent less in taxes (365 thousand SEK), earn at least 27.8 percent less (1.48 million SEK), and have 6 percent lower equity ratios than comparable domestic firms. Compared to our previous results, these findings are consistent with profit shifting based on transfer pricing and debt shifting from Sweden to low-tax jurisdictions.

TABLE 7

Propensity score matching results for multinational firms with low-tax links and small outreach

Variable	Method	Treated (Support)	Untreated (Support)	Difference (S.E.)
Tax payments	Unmatched	1675	757	918 (115)***
	Matched, Kernel	1588 (1785)	1735 (28934)	-148 (134)
	Matched, Radius	1519 (1784)	1884 (28934)	-365 (115)***
Earnings (EBIT)	Unmatched	6437	3236	3201 (559)***
	Matched, Kernel	6098 (1786)	7576 (28935)	-1477 (673)**
	Matched, Radius	5849 (1785)	8104 (28935)	-2255 (625)***
Equity ratio	Unmatched	0.335	0.344	-0.009 (0.005)*
	Matched, Kernel	0.335 (1203)	0.356 (19425)	-0.021 (0.005)***
	Matched, Radius	0.335 (1203)	0.357 (19425)	-0.022 (0.005)***

Note: *$1.645 \leq |t| < 1.96$, **$1.96 \leq |t| < 2.576$, ***$|t| \geq 2.576$.

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[18] In order to have a sufficient number of observations that have propensity scores in the common support, we disregard subdivision into corporate group and/or large capital stock firms.

To further investigate whether Swedish multinationals engage in profit shifting, we now turn to analyze what happens when a firm goes from being domestic to become a multinational. Such firms display production characteristics more similar to domestic firms, thus making the two groups more comparable (cf. Table 1 in section 3 and Table A1 in Appendix).

We start out estimating equation 2 for each outcome variable using both a standard and an IV approach. In Table 8, we present the difference-in-differences estimate β_2 together with corresponding nominal effects computed at domestic firm averages. For both the standard and IV approach the results show that the difference-in-differences estimates are negative and significant (at the one percent level) for earnings and tax payments, which implies that firms earn less and make lower tax payments after becoming multinational. Again, the results are consistent with profit shifting from Sweden, although now only through transfer pricing. With endogeneity problems taken into account, firms that become multinational reduce their tax payments by 148 thousand SEK on average and their earnings by 549 thousand SEK on average. This corresponds to an accumulated tax effect of 55 percent over the years following a status change.

TABLE 8

Difference-in-differences parameter estimates and effects

Variable	β_2	Nobs	R2	Effect	β_2 (IV)	Nobs	R2	Effect
Ln Tax payments	-0.538***	5203	0.149	-112***	-0.800***	52036	0.198	-148***
	(0.099)	6		(27.9)	(0.124)			(35.4)
Ln Earnings (EBIT)	-0.818***	5344	0.231	-631***	-0.665***	53442	0.299	-549***
	(0.068)	2		(79.5)	(0.086)			(101)
Equity ratio	0.004	4392	0.017	0.002	0.007	43922	0.017	0.003
	(0.008)	2		(0.003)	(0.013)			(0.005)

Notes: Robust standard error reported in parenthesis. Effect computed at domestic firm averages. *$1.645 \leq |t| < 1.96$, **$1.96 \leq |t| < 2.576$, ***$|t| \geq 2.576$.

In addition, we obtain difference-in-differences estimates comparing firms that become multinational (treated) to firms that remain domestic (untreated) based on propensity score matching in the treatment year.[19,20] Table 9 reports the results together with corresponding nominal effects computed at domestic firm averages. While there are no differences between firms without matching, firms that become multinationals pay less in taxes than comparable domestic firms (confirmed at the five percent significance level using radius matching) and earn less than matched domestic firms (verified at the five percent level). These results are in line with the results in Table 8. The magnitude is considerably lower though: the tax payment reduction is 11 percent (29 thousand SEK) and the corresponding reduction in earnings is 7 percent (81 thousand SEK). There is no evidence, however, that equity ratios are affected by the acquisition of multinational status. Compared to the accumulated effects of status change (reported in Table 8), the lower effects found in Table 9 could indicate that most of the behavioral change occurs in the years following the transition. This, again, suggests that it takes time for firms to adjust their tax-

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[19] There is only a sufficient number of observations that have propensity scores in the common support in the year of treatment.
[20] The probit estimation result for the propensity score is presented in Table A2 in the appendix.

planning behavior.[21]

TABLE 9

Difference-in-differences estimates based on propensity score matching (at treatment)

Variable	Method	Support (Treated, Untreated)	Difference (S.E.)	Effect (S.E)
Ln Tax payments	Unmatched	901, 33318	-0.015 (0.049)	-3.99 (13.5)
	Matched, Kernel	901, 33318	-0.088 (0.057)	-22.6 (15.7)
	Matched, Radius	899, 33318	-0.115(0.058)**	-29.1 (16.0)*
Ln Earnings (EBIT)	Unmatched	960, 32988	-0.020 (0.036)	-22.4 (41.4)
	Matched, Kernel	960, 32988	-0.064 (0.032)**	-70.1 (36.7)*
	Matched, Radius	960, 32988	-0.074 (0.033)**	-80.6 (37.9)**
Equity ratio	Unmatched	785, 27166	-0.000 (0.003)	-0.000 (0.001)
	Matched, Kernel	785, 27166	0.001 (0.004)	0.000 (0.002)
	Matched, Radius	785, 27166	0.001 (0.004)	0.000 (0.002)

Notes: Effect computed at domestic firm averages. *$1.645 \leq |t| < 1.96$, **$1.96 \leq |t| < 2.576$, ***$|t| \geq 2.576$.

5. CONCLUDING REMARKS

We investigate whether Swedish multinational firms in the manufacturing sector make use of global tax-planning opportunities. Our results indicate a considerable heterogeneity in multinational firms' tax-planning strategies. These stem both from firm characteristics that determine the opportunities to use favorable conditions built into the tax system, and their access to foreign-market jurisdictions. Our empirical results reveal that suggested profit-shifting to Sweden disappears when account taken to features of the tax system and/or when comparison is made to more similar domestic firms. Using propensity score matching and appropriate control groups, we find evidence consistent with profit shifting from Sweden for firms having access to low-tax jurisdictions. In particular, these MNEs pay on average 19 percent less in taxes than comparable domestic firms. This is in line but lower than the estimates from the studies by Egger et al. (2010) and Finke (2013). Our results suggest that the profit shifting that takes place is both through revenue and debt shifting, as the corresponding earnings and equity ratios are on average 28 percent and 6 percent lower than in the domestic counterparts.

We also examine whether firms that become multinational change their behavior in a way consistent with profit shifting. Based on matched difference-in-differences estimates, we find that these firms pay on average 11 percent less in taxes than firms that remain domestic in the year they change status. The effect can become quite substantial as our results suggest that the differences in tax payments increase over time. For firms that become MNEs, transfer-pricing seem to be the main mechanism to shift profits. A possible reason for this could be that undertaking debt shifting is less affordable for these firms compared to more established MNEs, as suggested by prior evidence of Møen et al. (2011) and Schjelderup (2016).

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[21] We have also investigated the time dimension following the behavioral effects of firms that become MNEs up to three years after the status change using propensity score matching. This provides support of a gradually increasing annual tax difference between firms that become multinational and firms that remain domestic.

Despite a fairly competitive corporate tax system, Swedish MNEs seem to engage in profit shifting. We can only observe this for certain subgroups–particularly involving smaller and less established firms–as our method hinges on a comparison with similar domestic firms. There are reasons to believe, however, that larger and more established MNEs engage in strategic tax planning as well. This further motivates the need for the ongoing international cooperation and coordination of tax laws.

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APPENDIX

TABLE A1

Descriptive statistics of firms that become multinational

Variable	Mean	Min	Max	Std
Net sales	$1.89 \cdot 10^5$	1.032	$2.30 \cdot 10^7$	$8.75 \cdot 10^5$
Capital stock	$1.18 \cdot 10^5$	0.942	$1.87 \cdot 10^7$	$8.23 \cdot 10^5$
Capital intensity	5.501	-0.681	12.283	1.240
Skill intensity	0.182	0	0.933	0.157
Importer	0.682	0	1	0.462
Exporter	0.713	0	1	0.449
Earnings (EBIT)	8992	$-7.28 \cdot 10^5$	$1.52 \cdot 10^6$	$7.72 \cdot 10^4$
Equity ratio	0.354	0.022	0.993	0.177
Tax payments	2518	$-6.18 \cdot 10^4$	$8.38 \cdot 10^5$	$2.50 \cdot 10^4$

Note: Pecuniary value in thousand SEK.

TABLE A2

Probit regression results of acquiring multinational status

Variable	Estimate
Production Size	0.354 (0.017)***
Capital intensity	0.019 (0.015)
Skill intensity	0.499 (0.131)***
Importer	0.207 (0.047)***
Exporter	0.284 (0.052)***
Industry dummy	X
Year dummy	X
Log likelihood	-3525.57
Pseudo R2	0.154
Nobs	34219

Notes: Standard errors reported in parenthesis.
***$p < 0.01$.