International Taxation and Takeover Premiums in Cross-border M&As

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Abstract:
Cross-border M&As can trigger a higher international taxation of the target's income. Non-resident dividend withholding taxes may be imposed by the target country, while additional corporate income taxation can be imposed by the acquiring country. Our evidence suggests that takeover premiums fully reflect non-resident dividend withholding taxes, while there is some evidence that they reflect corporate income taxation by the acquiring country as well. In contrast, acquiring firm stock market returns around the bid announcement do not appear to reflect either type of taxation. These results are consistent with previous findings that the gains of M&As primarily accrue to target shareholders.

Key words: international taxation, takeover premiums
JEL Classification: F23, G34

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1. Introduction

A cross-border takeover creates a new multinational firm with the target becoming a foreign subsidiary or branch and the acquirer becoming the parent firm. The creation of a new multinational firm through a takover may have important tax costs. Specifically, the new foreign subsidiary may have to pay non-resident withholding taxes on dividends distributed to the parent, while the parent may be liable to pay additional corporate income tax in the parent country on income received from the new foreign subsidiary. Additional corporate income tax levied by the parent country amounts to international double taxation of the new foreign subsidiary's income. This paper examines how additional tax liabilities of this kind affect takeover premiums in international M&As as well as excess returns achieved by acquirers.

Among developed countries, non-resident dividend withholding taxes remain quite common. Only some OECD member countries, among them the United Kingdom and the United States, have completely or almost completely eliminated such taxation. At the same time, roughly half of the developed countries, including the United Kingdom, the United States and Japan, tax the worldwide corporate income of their resident multinationals, potentially giving rise to international double taxation of the target's income.

Additional taxation of the target's income triggered by an international takeover clearly reduces the net-of-tax gains from the takeover to be shared between acquirer and target shareholders. If target shareholders bear part of the additional international taxation, then this should be reflected in a lower takeover premium. Similarly, lower acquirer firm excess stock market returns around the announcement bid would suggest that acquirer firm shareholders effectively bear part of the additional taxation.

This paper provides empirical evidence on the responsiveness of international takeover premiums and acquirer firm excess returns to the international taxation triggered by cross-border M&As. We consider both non-resident dividend withholding taxes in the target country and corporate income taxation in the acquirer country. For this purpose, we have gathered detailed information on the international taxation of dividend flows among a set of European countries, Japan and the United States. This information includes non-resident withholding tax rates, corporate tax rates and details of the double tax relief conventions applied by the countries in our

sample. We examine international M&As over the 1985-2004 period. On average, these M&As create an additional tax burden of about 4 percent of the target's net income.

Our empirical results suggest that non-resident dividend withholding taxes are fully reflected in reduced international takeover premiums. In fact, in our benchmark regression the estimate of the coefficient measuring the 'pass-through' of non-resident withholding taxes into lower premiums is not statistically different from one. Hence, the incidence of non-resident dividend withholding taxes appears to be fully on target firm shareholders. In addition, there is evidence of a pass-through of corporate income taxes into lower takeover premiums for deals involving manufacturing firms, even if the pass-through is somewhat weaker than in the case of non-resident withholding taxes. In contrast, we find no evidence that either non-resident withholding taxes or corporate taxes are systematically reflected in lower acquiring firm announcement returns.

The finding that takeover premiums and not acquirer firm announcement returns are systematically affected by the additional international tax burdens suggest that the incidence of the additional taxation rests with target firm shareholders and not acquiring firm shareholders. This outcome is consistent with previous research indicating that any gains from (domestic) M&As tend to accrue mainly to target shareholders. Andrade, Mitchell and Stafford (2001), for instance, report that targets experience a highly significant positive average abnormal returns of 20.1 percent over a three day window around the announcement date in case of cash-financed acquisitions. Acquirer shareholders, instead, have a statistically insignificant average abnormal return of 0.4 percent in this instance.[2]

There are several potential explanations for the result that non-resident dividend withholding taxes are more clearly discounted into lower international takeover premiums than parent country corporate income taxes. First, multinationals resident in some countries are allowed to engage in worldwide income averaging. This enables these multinationals to claim a foreign tax credit for the taxes paid in high-tax countries against the tax due on the multinational's income in low-tax countries. Second, calculated double tax liabilities may be too large, if firms rationally expect a reduction in future parent country taxes at the moment of profit repatriation.

[2] See also Jensen and Ruback (1983) and Jarrell, Brickley and Netter (1988) for early surveys.

U.S. multinationals, for instance, may expect future reductions in the tax on repatriated earnings on the basis of their experience with the American Jobs Creation Act of 2004. This legislation temporarily allowed U.S. multinationals to repatriate profits subject to a low flat tax rate of 5.25 percent until the end of 2005.

As indicated, our international tax variables are based on tax rates and on other institutional details of the international tax system. Somewhat surprisingly, the coefficients measuring the pass-through of our constructed international tax burden variables into lower takeover premiums are in some specifications estimated to be statistically larger than one. This could reflect that the expected average tax rate (i.e., the expected tax payment divided by the expected taxable income) can exceed the statutory tax rate, if there is imperfect off-setting of losses against positive taxable income in other years or areas. Within multinational firms, there certainly tends to be limited, if any, offset of a foreign subsidiary's losses against any taxable income within the parent country. Consistent with an imperfect loss-offset explanation, we find that the pass-through of international taxation into lower takeover premiums is relatively pronounced for firms that are prone to suffer losses.

Ayers, Craig, Lefanowicz and Robinson (2003) have previously shown that personal-level capital gains taxation on selling shareholders positively affects takeover premiums for domestic U.S. deals. Specifically, the takeover premium is positively related to the personal capital gains tax rate in the U.S., and negatively to the share of exempt institutional ownership. Ayers et al. (2003) essentially find a capital gains tax effect on takeover premiums, because an acquisition brings already overhanging capital gains taxation forward. This paper differs from Ayers et al. (2003) in three important respects. First, we consider business-level dividend taxation on the buyer side rather than personal-level capital gains taxation on the seller side. This explains that we find a negative rather than positive effect of taxation on takeover premiums. Second, the additional dividend taxation triggered by a cross-border takeover can be taken to be unexpected, as cross-border takeovers from a particular country are imperfectly anticipated events. Thus, we consider the pricing effect of the imposition 'new' taxation, rather than the bringing forward of already existing taxation. Third, we know the exact identity of the buying firm, and hence can estimate a pricing effect of dividend taxation using detailed information on dividend taxation regimes applicable across the various international transactions. The present paper contributes to an existing literature on the capitalization effects of dividend

taxation on share prices, including Harris, Hubbard and Kemsley (2001) and Gentry, Kemsley and Mayer (2003), that similarly lacks exact information on asset ownership that could identify the appropriate tax regime.

There has been a considerable literature on how firm and deal characteristics affect takeover premiums and abnormal returns of acquiring and target firms around the announcement date. Servaes (1991) shows that target, bidder and total returns are larger when targets have low q ratios and bidders have high q ratios. Dong, Hirshleifer, Richardson and Teoh (2006) construct measures of acquiring and firm overvaluation, such as the price-to-book ratio, and relate these to deal characteristics such or the means of payment and the bid premium. They find that a higher acquiring firm price-to-book ratio is related to a higher bid premium, while a higher target firm price-to-book ratio is related to a lower bid premium. Rau and Vermaelen (1998) find that low book-to-value acquiring firms have a relatively poor long-term performance after mergers. Moeller, Schlingemann and Stulz (2005) show that low-book-to-market firms have made relatively many large loss deals in the 1998-2001 period. Moeller, Schlingemann and Stulz (2004) further find that the announcement return is higher for small acquirers. Stock finance appears to create relatively small (negative) returns for acquirers (see, for instance, Andrade, Mitchell and Stafford (2001)). Bates and Lemmon (2003) and Officer (2003) consider the impact of termination fees on merger outcomes, while Comment and Schwert (1995), Cotter, Shivdasani and Zenner (1997) and Moeller (2005) examine anti-takeover measures such as poison pills, independent directors and indices of shareholder control, respectively. Based on this literature, we select several firm and deal characteristics as controls in our premium regressions.

Several papers have previously considered how international double taxation affects the volume and direction of foreign direct investment and M&As. Hines (1996) finds that countries with worldwide taxation invest relatively much in U.S. states with high corporate income taxes. This reflects that U.S. state taxes are generally creditable against corporate income taxes in countries with worldwide taxation. Di Giovanni (2005) finds that a country's real gross M&A inflows are negatively related to its average corporate tax rate. Desai and Hines (2002) examine the role of international double taxation in 26 cases of so-called inversions of U.S. multinationals. In these transactions, the corporate structure is inverted in the sense that the U.S. parent becomes a subsidiary, and the earlier foreign subsidiary becomes the parent firm. Huizinga and Voget (2008) examine the parent-subsidiary structure of

multinational firms that are newly created through cross-border M&As. The actual parent firm is found to face a lower international tax burden than the actual subsidiary would face if it were the parent. This evidence on the direction of M&As is consistent with the present paper where across M&As it is found that the firms facing relatively low international tax burdens can offer relatively large takeover premiums.

The remainder of this paper is organized as follows. Section 2 discusses the implications of the international tax system for cross-border M&As. Section 3 discusses the M&A data. Section 4 presents the empirical results. Section 5 concludes.

2. The international tax system and the takeover premium

This section first describes the main features of the international tax system. The aim is to see how the creation of a multinational firm by a cross-border takeover may introduce additional international taxation of the target's income. Next, we introduce a simple model of the determinants of the takeover premium, including international taxation.

2.1. The international tax system

Let us consider a multinational firm created by an international takeover. To fix ideas, let us assume that a firm in country *i* takes over a firm in country *j*, resulting in a parent firm in country *i* and a foreign subsidiary in country *j*. The subsidiary's income in country *j* is first subject to a corporate income tax t_j. The first column of Table 1 indicates the statutory tax rate on corporate income for our sample of European countries, Japan and the United States in 2004. The tax rates in Table 1 include regional and local tax rates as well as specific surcharges. Among the European countries, Germany has the highest tax rate at 38.3 percent, while Estonia is at the bottom with a zero tax rate. For each of the years 1985-2004, we have collected corporate tax rates and all other tax system information from the International Bureau of Fiscal Documentation and several other sources.[3] These and other data sources and variable definitions are listed in Appendix A. Tax rates display considerable variation over time, which we exploit in our empirical analysis. For example, the average top statutory tax rate among countries in our sample involved in M&As in both 1985 and 2004 falls from 48.1% to 33.7% in the intervening period.

[3] For Eastern European countries, data are only available from 1990.

The subsidiary can retain its after-tax corporate income or return it to the parent company as a dividend. The subsidiary country may levy a bilateral non-resident withholding tax w_{ij} on any outgoing dividend income. Bilateral dividend withholding taxes among countries in Europe, Japan and the United States for 2004 are presented in Table 2. These rates are zero in many instances. Specifically, they are zero among long-standing EU member states on account of the EU Parent-Subsidiary Directive adopted in 1990. New EU member states such as the Czech Republic, Hungary and Poland still maintain non-zero dividend withholding taxes vis-à-vis considerable numbers of European countries at the time of their accession in 2004. Non-EU member states in 2004 such as Bulgaria, Japan, Romania and the United States similarly maintain non-zero dividend withholding taxes in a considerable number of cases. The combined corporate and withholding tax rate in the subsidiary country is seen to be $t_j + (1-t_j)\, w_{ij}$.

Parent country *i* may tax the income generated abroad at a rate t_i. Let τ_{ij} be the resulting double tax rate defined as the tax rate to be paid by the multinational firm on income from country *j* in excess of the corporate tax rate t_j in country *j*. In the absence of any double tax relief, the double tax τ_{ij} equals $t_i + (1-t_j)\, w_j$. In practice, most countries provide some form of international double tax relief. Some countries operate a territorial or source-based tax system, effectively exempting foreign source income from taxation. In this instance, the double tax rate τ_{ij} equals $(1-t_j)\, w_{ij}$. Alternatively, the parent country operates a worldwide or residence-based tax system. In this instance, the parent country in principle subjects income reported in country *j* to taxation, but it generally provides a foreign tax credit for taxes already paid in the subsidiary country. The OECD model treaty, which summarizes recommended practice, gives countries the choice between an exemption and a foreign tax credit as the only two ways to relieve double taxation (OECD, 1997).

The foreign tax credit reduces domestic taxes on foreign source income one-for-one with the taxes already paid abroad. The foreign tax credit can be indirect in the sense that it applies to both the dividend withholding tax and the underlying subsidiary-country corporate income tax. Alternatively, the foreign tax credit is direct and applies only to the withholding tax. In either case, foreign tax credits in practice are limited to prevent the domestic tax liability on foreign source income from

becoming negative. In an indirect credit regime, the multinational effectively pays no additional tax in the parent country on account of the foreign tax credit, if the parent country tax rate t_j is less than $t_j + (1 - t_j)w_{ij} \geq t_i$. Similarly, in a direct credit regime, the multinational pays no tax in the parent country due to the foreign tax credit limitation if $w_{ij} \geq t_i$. A few countries with worldwide taxation do not provide foreign tax credits, but instead allow foreign taxes to be deducted from the multinational's taxable income. For the various double tax relief conventions, Table 3 summarizes expressions for the double tax rate τ_{ij} that, in the case of a foreign tax credit, depend on whether the foreign tax credit limitation is binding.

Countries tend to vary their method of double tax relief, i.e. through an exemption, credit or deduction, conditional on the existence of a double tax treaty with the other country. Columns 2 and 3 of Table 1 provide information on the double taxation rules applied to incoming dividends from treaty signatory and non-signatory countries. Finland and Spain, for instance, exempt dividend income from treaty partners, while they provide a direct and indirect foreign tax credit in the case of non-treaty counties, respectively. In these instances, the existence of a tax treaty makes the method of double tax relief more generous. Across the categories of treaty and non-treaty countries, the exemption system is seen to be the most common method of double tax relief, followed by foreign tax credits. At the same time, indirect foreign tax credit regimes are somewhat more common than direct foreign tax credits. As an exceptional case, the Czech Republic is seen to apply the deduction method to foreign dividends from non-treaty countries. The tendency to discriminate double tax relief on the basis of the existence of a tax treaty makes it necessary to know whether a bilateral tax treaty is effective in any given year. Such information for 2004 is available from, for instance, Huizinga and Voget (2008, Table W-II).

In describing the international tax system, we have assumed that the target firm becomes a foreign subsidiary of the new multinational firm. In a minority of cases, however, the target firm may instead become a foreign branch. In that instance, the additional taxation of the income of the target in country *i* generally differs. First, non-resident dividend withholding taxes normally do not apply in case a branch is created. Second, the parent country may apply a different method of double tax relief in case of foreign branch income. The relevant relief methods for foreign branch income with and without a tax treaty are listed in columns 4 and 5 of Table 1,

respectively. Foreign tax credits rather than exemptions are seen to be the dominant method of providing double tax relief in case of a tax treaty. Thus, the additional parent country corporate income tax on the foreign-source income may on average be somewhat higher if a branch rather than a subsidiary is created.

Even in the absence of a cross-border takeover, the firm in country *j* has to pay tax in this country at a rate t_j.[4] This suggests that the proportional reduction in net-of-tax income and ultimately dividends due to the takeover, denoted o_{ij}, is given by $\frac{\tau_{ij}}{1-t_j}$. By construction, this 'overall' additional international tax, o_{ij}, represents both the non-resident dividend withholding tax and the additional parent country corporate tax brought on by the cross-border takeover. In the empirical work, it will also be interesting to consider these two components of the overall tax separately. For comparability, the withholding tax part and the parent country part both need to be expressed as shares of the target's net-of-corporate-tax income. The dividend withholding part straightforwardly equals the dividend withholding tax rate, w_{ij}, as the dividend withholding tax applies to the target's income after corporate income tax. The part due to parent country corporate income tax, called parent tax below and denoted p_{ij}, is calculated as the remainder or $o_{ij} - w_{ij}$.

2.2. Determinants of the takeover premium

In the empirical work, we will relate the takeover premium to the additional taxation of target firm *j*'s income brought on by the cross-border takeover.[5] Prior to the takeover, the target's share price is assumed to represents the present discounted value of the net-of-corporate tax income stream that is paid out as dividends.[6] By itself, the overall additional international tax *o* (with subscripts omitted) reduces this

[4] Firm *j* then will not be subject to a non-resident dividend withholding tax, if we assume the target's shareholders to be local. Dividends paid to local shareholders may be subject to a resident dividend withholding tax, but this tax is generally a (partial) prepayment of the personal income tax on dividends. The analysis of this paper is restricted to business-level income taxation.

[5] Egger, Eggert and Winner (2007) find that foreign-owned firms pay relatively less corporate income tax in Germany. This could be on account of profits shifted out of Germany. In our setting, we cannot estimate a foreign ownership effect per se, as all cross-border M&As result in a foreign owned target firm. Rather, we estimate the impact of varying additional non-resident dividend withholding taxation and parent country corporate income taxation across different bilateral national relationships.

[6] A foreign takeover by a firm from a particular country is taken to be a low-probability event so that the expectation of such a takeover does not materially affect target firm pricing before a foreign bid announcement.

firm valuation proportionately. To motivate a cross-border takeover, there have to be efficiency or synergy gains that more than offset the additional tax burden. To reflect this, let γ be the permanent proportional increase in the target's income and dividends due to the takeover. We can now model the takeover premium as follows

$$\text{Premium} = \sigma\left[(1+\gamma)(1-o)-1\right] \qquad (1)$$

where σ is the extent to which target shareholders can appropriate the net gains from the merger. Efficiency gains from a takeover may stem from several sources and at the same time additional taxation comes in the form of non-resident withholding taxation and parent country corporate income taxation. Acquirer and target shareholders could share the various efficiency benefits and tax costs of the merger in different ways. For simplicity's sake, however, we will maintain a uniform sharing parameter, σ. For γ and *o* rather small, we can now approximate the premium in eq. 1 as follows

$$\text{Premium} \approx \sigma(\gamma - o) \qquad (2)$$

In the empirical work below, the synergy gains rate γ is taken to be a function of a set *x* of firm and deal characteristics so that $\gamma = \beta x$. Substituting for γ into eq. 2, we get the following expression for the premium which will serve as the starting point for our empirical work:

$$\text{Premium} \approx \hat{\beta} x - \sigma o \qquad (3)$$

where $\hat{\beta} = \beta\sigma$. Straightforwardly, we can replace *o* in eq. 3 by the distinct withholding tax and parent country tax variables, *w* and *p*, and estimate the impact of these two tax variables on the takeover premium separately.

3. The data

The M&A data are taken from the Thomson Financial SDC database. This database provides pricing information and other deal characteristics as well as some accounting information of the two merging firms. Additional accounting data are obtained from Compustat North America and Compustat Global, while additional stock price data for acquirers are retrieved from Datastream. Our sample consists of 948 mergers and acquisitions involving any two countries in a set of European countries, Japan and the United States between 1985 and 2004. A cross-border M&A leads to the creation of a new multinational firm, of which the target firm becomes a

foreign establishment. The database does not inform us whether the new foreign establishment takes the form of a subsidiary or a branch. As indicated, this choice matters as some countries tax the income derived from foreign subsidiaries and branches differently. As a benchmark case, we will assume that the target firm becomes a foreign subsidiary. In the empirical work, however, we also consider the alternative scenario where the target firm is converted into a foreign branch.

As seen in Table 4, acquiring firms in many instances reside in one of the larger countries in our sample. France, the United Kingdom and the United States each are home to at least 100 acquirers. Among the smaller countries, the Netherlands and Switzerland harbor a least 50 acquirers. Aggregate deal values are shown to exceed 100 billion U.S. dollars for France, Germany, the United Kingdom and the United States, while they exceed 75 billion dollars for the Netherlands and Switzerland. The bid premium is calculated as the bid price relative to the market price of the target four weeks prior to the bid announcement, adjusted for the overall market price movement in the target country in the four intervening weeks. As in Officer (2003), we discard observations with a negative takeover premium or a takeover premium in excess of 2. This yields an average takeover premium for the overall sample of 0.45. Average takeover premiums per acquiring country differ substantially, with the few acquiring firms in Iceland paying a high average premium of 1.00 and the 14 acquiring firms in Spain paying a low average premium of 0.25. Among the large countries, France and Japan pay a relatively high average premium of 0.56.

Next, the table provides information on the additional tax burdens created by the takeovers. The overall additional tax burden as a share of income net of the target's corporate income tax is on average 3.95 percent. Japan and the United States are countries with residence-based corporate income tax system and relatively high tax rates, which explains high average values of the additional tax burden of 20.65 and 11.07 percent, respectively. Austria has an average value of the overall additional tax of 2.86, even though it exempts foreign source income from taxation. In this instance, the value of the overall tax is entirely due to non-resident dividend withholding taxation in the target country. We see that Finland, Iceland, Luxembourg and Portugal have average values of the overall tax of zero. This reflects that these countries exempt foreign source income and have only several targets in countries without non-resident dividend withholding taxation. The break-down of the overall

tax into the withholding tax and the parent tax reveals that the average withholding tax at 0.79 is much smaller than the average double tax due to the parent-country corporate income taxation at 3.16 percent. U.S. acquirers are shown to pay a relatively high average withholding tax rate of 2.39 percent and a similarly high parent country tax of 8.73 percent. British acquirers instead pay an average withholding tax of only 0.27 percent, with zero withholding taxes inside the EU due to the Parent and Subsidiary Directive of 1990. The table finally shows the percentage of observations per acquiring country with a positive value of the overall tax. The share of observations with a positive value of the overall tax in the overall sample is 51.4%.[7] All U.S. acquirers are shown to face an additional tax burden, as the U.S. corporate income tax exceeds the target country corporate income tax or there is a non-resident dividend withholding taxation in the target country.

Summary information on our sample from a target country perspective is provided in Table 5. The table indicates that targets are highly concentrated in the United Kingdom and the United States, with 221 and 389 targets in these two countries. Total values of targets in these two countries similarly exceed 200 billion dollars. Next, we see that U.S. targets command a relatively high average premium of 0.53, only topped by an average premium of 0.67 for Danish targets. Next, the overall additional tax rate is highest for targets in Croatia and Estonia at 16.15 and 21.50 percent, respectively, through a combination of high withholding tax rates and low corporate income tax rates. Targets in Greece and Luxembourg instead generate overall tax rates of zero, as the corresponding acquirers do not face double tax burdens in their home countries and pay no dividend withholding taxes in the target countries. Turning to the withholding tax rate, we see that Croatia, Estonia, Hungary and Japan impose average non-resident withholding taxes of at least 7.50 percent, while only five countries, among them the United Kingdom and the United States, abstain from levying such taxes in all cases. All the same, targets in the United Kingdom and the United States are taxed at average rates of 6.77 and 2.20 percent, respectively, by the acquiring countries, as seen by the values of parent tax variable. Specifically, targets in the U.S. are taxed by Japan, and by Belgium, France, Germany and Italy, as these latter four countries exempt only 95 percent of dividends. Correspondingly, substantial numbers of targets in the United Kingdom and the

[7] The number of observations with a positive overall tax, withholding tax and parent tax is 487, 443 and 116, respectively.

United States generate positive values of the additional overall tax burden as seen in the table.

A main interest of this paper is to investigate the relationships between additional tax burdens created by international M&As and takeover premiums. Next, we examine whether any relationships are apparent in the raw data. Specifically, we present scatter diagrams of the additional tax rates, i.e. the overall tax, withholding tax and parent tax, against the takeover premium for the entire sample. First, Figure 1 plots the overall tax against the takeover premium, yielding no apparent relationship. The correlation coefficient between the overall tax and the premium is estimated to be 0.002 and it is not statistically significant. Next, Figure 2 plots the withholding tax against the premium, suggesting a negative relationship. Note that the withholding tax rate only takes on values of 0, 5, 10 or 15 percent in our sample. As a result, the scatter diagram essentially collapses to several line segments for withholding tax rates of 0 and 5 percent. To better gauge the distribution of the premium, Figure 3 represents the same information after slightly 'jittering' the data points. This confirms an apparent negative relationship between the withholding tax and the premium. The correlation coefficient between these two variables is estimated to be -0.14 and it is significant at the 1 percent level. Finally, Figure 4 plots the parent tax variable against the premium, yielding no clear relationship. The correlation coefficient between these two variables is positive at 0.07, but it is not statistically significant. Simple correlations, of course, ignore a host of firm and deal characteristics affecting the premium, as taken into account in the empirical work below.

Table 6 provides summary statistics for the premium, the tax variables and the control variables in the subsequent empirical work. A first control is the log of the market value of the target as a measure of the target's size. Larger targets are expected to command a smaller premium. Next, the book-to-market variable is the ratio of the target's book value to market value. A relatively large book-to-market ratio suggests that the target is undervalued, and hence could command a larger premium. The leverage variable is the ratio of the target liabilities to target assets. A highly leveraged target could be prevented from additional borrowing to finance worthwhile investments. This suggests that a highly leveraged target can obtain a higher takeover premium.

Several deal characteristics are included in the empirical work. Equity is a dummy variable that takes on a value of one if only equity is offered to target

shareholders, while cash is a dummy variable that takes on a value of one if only cash is offered. All-equity deals, of course, provide target shareholders less certainty about the longer-term value of the deal, but it could have the advantage of postponing capital gains taxation. Thus, equity deals could generate either higher or lower takeover premiums. Hostile is a dummy variable that takes on a value of one, if the takeover is not supported by the board of the target firm. The bidding firm may need to pay relatively much, if target management does not support the takeover and correspondingly. Moeller (2005) finds a significant positive impact of the hostile nature of the takeover bid on the premium. Poison pill is a dummy variable indicating the presence of a defense measure against a takeover in the form of a poison pill. Comment and Schwert (1995) find a positive impact of poison pills on takeover premiums.

Tender is a dummy variable that is one, if the takeover is preceded by a tender offer for all shares. If a bid is for more shares than necessary to gain control, the bidding firm may wish to bid relatively less. Moeller (2005) in fact finds a negative impact of the tender variable on the premium. At the same time, a tender offer may be called for, if target ownership is dispersed. With dispersed target ownership, it is more likely that the benefits from the takeover accrue to target shareholders in the form of a higher bid premium. Consistent with this, Officer (2003) and Rossi and Volpin (2004) find a positive impact of the tender offer variable on the takeover premium. Finally, cleanup is a dummy variable that takes on a value of one, if the bidder already owns at least 50 percent of the shares and seeks to acquire the remaining shares. In this instance, the bidder already has control over the target and hence may bid relatively little to acquire the remaining interest. Officer (2003) indeed finds a relatively small premium in case of a cleanup.

4. Empirical results

This section first presents evidence on the relationship between international taxation and takeover bid premiums. This relationship appears to be stronger for firms that are more likely to suffer losses as can be explained by an imperfect offset of losses against other taxable income. This is examined next. Finally, the section

discusses the results of regressions of acquirer firm excess returns on the international tax variables.

4.1. The takeover premium and international taxation

Table 7 presents our basic regressions. All regressions in the table provide for acquirer country, target country and year fixed effects. To start, regression 1 relates the level of the bid premium to the overall tax variable and several controls. The estimated coefficient on the overall tax variable is -0.632 and it is significant at the 10 percent level. Thus target firm shareholders are estimated to receive 63 cents less for each euro of additional tax computed to be triggered by the cross-border takeover. The premium is also negatively and significantly related to target market value as an index of target size. The relationship between the premium and the book-to-market value is estimated to be positive and significant to suggest that firms with a high book-to-market ratio are undervalued. Target leverage, in turn, enters the regression with a positive and significant coefficient to suggest that highly leveraged targets can benefit from the availability of additional capital as a result of the takeover. Next, we see that the bid premium is positively and significantly related to the equity variable. All-equity deals may require a higher premium, as the ultimate value of an offer in the form of equity is uncertain. The hostile variable is seen to obtain a negative but insignificant coefficient. The poison pill variable, in turn, obtains a positive coefficient that is significant at the 10 percent level to suggest that this defensive measure prompts potential acquirers to bid more. Further, the tender offer variable also obtains a positive and significant coefficient, possibly reflecting that the bidding firm has to pay more to purchase from dispersed owners through a tender offer. Finally, we find a negative and significant role for the cleanup variable, which suggests that bidding firms offer relatively little to expand a controlling interest in the target to full ownership.

The overall tax variable represents the additional tax burdens generated by the takeover in the form of both withholding taxes and acquirer-country corporate income taxation. These different kinds of taxes could be valued differently by the newly created multinational firm. Specifically, acquirer-country taxes could in practice be discounted, if the multinational can engage in worldwide income averaging or foresees a tax amnesty or other acquirer-country tax reduction in the future. Regression 2 includes the withholding tax and parent tax variables separately to allow

for a different weighting of these taxes. The withholding tax variable obtains a coefficient of -1.847 that is significant at the 1 percent level, while the parent tax variable obtains a less negative coefficient of -0.516 that is not statistically significant. It can be seen that the estimated coefficient for the withholding tax variable is not significantly different from -1. Thus, our results are consistent with the view that the bid premium is reduced to fully reflect any future non-resident withholding tax liability. The incidence of the withholding tax thus appears to be on target shareholders, who mostly may be domestic residents.

Regression 3 differs from regression 2 in that the dependent variable is the logarithm rather than the level of the bid premium. The withholding tax variable now is significant at the 5 percent level, while the corporate income becomes significant at 10 percent. Among the controls, the leverage and equity variables are no longer significant at 5 percent, while the poison pill variable now is significant at 5 percent. Taking the logarithm of the bid premium reduces the R-squared from 0.23 to 0.22, which suggests the level specification of the bid premium is more appropriate.

Next, we restrict the sample to the manufacturing industry. There are reasons to suspect that the additional taxation engendered by a cross-border takeover are especially burdensome to manufacturing firms, as these firms may find it relatively difficult to shift their real assets and associated profits to low-tax jurisdictions. In regression 4, we again take the level of the bid premium as the dependent variable. The restriction to manufacturing firms reduces the sample to 407 observations. The withholding tax now obtains a coefficient of -3.108 that is significant at 1 percent, while the parent tax variable enters with a coefficient of -1.364 that is significant at 5 percent. Bid premiums in the manufacturing industry thus appear to be more sensitive to any additional taxation resulting from an international takeover.

Overall, the results in Table 7 suggest that both withholding taxes and acquirer-country corporate income taxes lead to lower bid premiums in international takeovers. In the case of withholding taxes, the economic incidence – rather than the de jure imposition - appears to be fully on target firm shareholders. Countries that levy non-resident dividend withholding taxes no doubt aim to tax the foreign owners of local businesses. However, non-resident withholding taxes instead appear to be a tax on local residents, if these residents sell existing assets to foreigners. In that instance, the sale price is simply reduced to reflect the future non-resident withholding taxes. The incidence of acquirer-country taxes on the target's income similarly

appears to be to some extent on target shareholders. The acquirer-country thus effectively exports part of its corporate income on newly created multinational firms to target-country shareholders. By itself, this provides the main acquiring countries with an incentive to maintain or even increase the taxation of the foreign-source income of resident multinationals.

Table 8 presents some robustness checks, first taking regression 2 in Table 7 as a starting point. Non-resident dividend withholding taxes may be considered more burdensome than acquirer-country taxation because the former are easier to enforce. In fact, enforcement of acquirer-country taxation regularly requires international cooperation and information exchange between the acquirer and target country tax authorities. This suggests that acquirer-country taxes are more burdensome, if acquirer and target countries routinely cooperate in tax matters. EU countries provide each other assistance in the enforcement of corporate income taxation, following a directive adopted in 1977. This suggests that acquirer-country taxation may carry more weight, if acquirer and target countries are both EU member states. Regression 1 in Table 8 tests this by including an interaction term of the corporate income tax variable with a dummy variable signaling that both countries in the transaction are EU member states. At the same time, we include an interaction term of the parent tax variable with a dummy variable flagging that acquirer and target countries are not both EU members. The estimated parameter for the parent tax variable in case of joint EU membership is -1.197 and, as expected, more negative than the estimate of -0.372 in the alternative case, but both interaction terms are statistically insignificant.

As discussed before, the acquirer-country tax may not be effective, if acquirer countries allow their multinationals to engage in worldwide income averaging, i.e. to claim foreign tax credits for foreign taxes in high-tax countries against acquirer-country taxes on income from low-tax countries. Similarly, acquirer-country taxes are discounted if multinationals can expect some future temporary or permanent reduction in acquirer-country taxes on repatriated income. Rules regarding income averaging and the prospects of future tax amnesties are, of course, country specific, which suggests that the effective burden of the acquirer-country tax may vary with the acquirer country. To test this, in regression 2 we include four interaction terms of the parent tax variable with dummy variables indicating that the acquirer country is Japan, the United Kingdom, the United States or any other country. Japan, the United Kingdom and the United States are three frequent acquirer countries with at least de

jure significant acquirer-country taxation (see Tables 1 and 4). The estimated parameters for the four interacted parent tax variables vary from -0.170 for the United States as the acquirer country to -1.057 for an acquirer country in the other category. All four parameters, however, are statistically insignificant.

Following Officer (2003), we have restricted the sample to bid premiums between 0 and 2. Prospective acquirers generally, of course, have to offer positive bid premiums for a takeover attempt to be successful. This requirement of generally positive bid premiums suggests that our sample is truncated from below. Such a truncation potentially introduces an attenuation of the parameter estimates for our tax variables.[8] To check this, regression 3 in Table 7 applies the truncated regression technique with a lower truncation limit of 0 to the basic regression 1 of Table 7. The overall tax variable now obtains a more negative coefficient of -1.019 that is significant at the 5 percent level. This result suggests that the coefficient on the overall tax variable in the basic regression may indeed be biased towards zero. Regression 4 further applies the truncation technique to regression 2 of Table 7 to yield more negative estimated coefficients for the withholding tax and parent tax variables of -3.717 and -0.882 that are significant at the 1 and 10 percent levels, respectively.

Next, regression 5 corrects standard errors for clustering across observations in the same target industry in a specification with separate withholding tax and parent tax variables. This yields an estimated coefficient for the withholding tax variable of -1.847 that is significant at the 5 percent level, while the parent tax variable obtains an estimated coefficient of -0.516 that is statistically insignificant. Regression 6, in turn, excludes acquirer and target country fixed effects. In this specification, the withholding tax variable receives an estimate coefficient of -1.647 that is significant at the 1 percent level, and the parent tax enters with a coefficient of 0.026 that is statistically insignificant.

Table 9 presents some additional robustness tests of specific aspects of the international tax system. First, regression 1 in Table 9 takes the basic regression 1 of Table 7 and replaces our overall tax variable by an overall tax variable on a gross basis, i.e. a tax variable that calculates the additional withholding and corporate income tax triggered by the takeover as a share of the target's income before target-

[8]At the same time, international double taxation is expected to reduce cross-border M&A activity. Huizinga and Voget (2008) provide some evidence of this.

country corporate income tax. The contribution of the withholding tax to the overall tax burden thus defined would be appropriate, if the target for some reason, e.g. generous target-country depreciation allowances, does not pay corporate income tax in the target country. At the same time, some acquirers could fail to realize that any additional taxes triggered by an international takeover have to be paid out of the target's net-of-corporate tax income stream. Regression 1 shows that this alternative overall tax variable obtains a coefficient of -0.928 that is significant at the 10 percent level. The more negative coefficient no doubt reflects that the overall tax variable on a gross basis tends to be smaller than the overall tax on a net basis.

All tax variables have been constructed on the assumption that the target firm becomes a subsidiary rather than a foreign branch of the newly created multinational firm. This assumption surely is correct in the majority of cases. All the same, as a robustness check we construct an alternative overall tax variable (on a net basis) on the assumption that the target firm becomes a foreign branch. In this scenario, non-resident dividend withholding taxes do not apply, as a foreign branch does not return its income to the parent firm in the form of dividends. In some instances, parent-country taxation of foreign branches and of subsidiaries also differ, as seen in Table 1. All the same, in the majority of cases the overall tax variables in the branch and subsidiary scenarios are the same. In regression 2, the overall tax variable for the branch case is seen to obtain a coefficient of -0.357 that is statistically insignificant. This is consistent with the assumption that foreign subsidiaries are more relevant than foreign branches.

With a few exceptions, acquirer countries allow their multinational firms to defer acquirer-country tax on foreign-source income if this is retained abroad. Using information on deferral policies for 2004 from Huizinga and Voget (2008, Table W-IV), we can construct a bilateral dummy variable indicating whether deferral is potentially not available for any pair of acquirer and target countries. Deferral is potentially not available if the acquirer is located in Japan, Portugal, Spain, the United Kingdom or the United States and if the target country corporate tax rate is sufficiently low.[9] Regression 3 includes two interaction variables of the corporate income tax variable with two dummy variables signaling whether or not deferral is potentially not available. We expect the parent tax variable interacted with the deferral

[9] See Huizinga and Voget (2008) for details on the construction of the no deferral dummy variable.

dummy to obtain a less negative coefficient as deferral would make acquirer-country taxation less burdensome. The results in regression 3 Table 9 show that the parent tax variable interacted with the deferral dummy obtains a slightly less negative coefficient of -0.507 – compared to -0.526 in case of no deferral -, but both estimated coefficients are statistically insignificant.

A final tax issue we address is the potential role of international profit shifting by a newly created multinational firm. International profit shifting within the new firm could serve to reduce its worldwide tax liability. In fact, some multinational could well be created with the exact purpose of creating subsequent international profit shifting opportunities. The tax savings per shifted euro are given by the difference in the corporate income tax rates of acquiring and target countries (with an adjustment for any additional taxation of the target's income triggered by the international takeover), or vice versa. The absolute value of the tax difference is included as an additional explanatory variable in the bid premium regression 4 in Table 9. We expect the tax difference variable to obtain a positive coefficient to reflect that the acquirer is willing to pay more for a target that comes with subsequent profit shifting opportunities. The tax difference variable, however, enters the regression with an unexpectedly negative coefficient of -0.222 that is statistically insignificant. Hence, there is no evidence that bid premiums reflect profit shifting opportunities created by cross-border takeovers.

4.2. Imperfect loss-offset and estimated tax coefficients

Our tax variables represent the tax costs of a foreign acquisition in terms of the target's after-corporate-tax income. In Tables 7 through 9, estimated coefficients on the tax variables frequently are seen to be less than minus one. In regression 4 in Table 7, for instance, the estimated coefficients for the withholding tax and corporate tax variables are -3.108 and -1.364, respectively. This suggests that the tax costs of a cross-border merger can exceed our tax variables as constructed from tax system information. A potential reason for this is that our tax variables ignore the possibility that firms can suffer losses that cannot be deducted from future profits or profits elsewhere within the multinational firm.[10] In practice, loss-offset is imperfect.

[10] Alternatively, note from (1) that the derivative of the premium with respect to the overall tax rate is given by $\sigma(1+\gamma)$. This suggests that the productive gains achieved by the takeover increase the target's post-merger taxable profits, and hence the valuation of its post-merger tax burden.

Countries tend to have rules that allow loss offset against past or future profits within a certain time span. A loss-making firm, however, may not return to profitability fast enough or even go bankrupt so as to limit loss-offset within the target country. At the same time, most countries do not allow resident multinational firms to deduct foreign-source losses against domestically generated income, Austria and Denmark being notable exceptions. On account of imperfect loss-offset, the firm's expected tax payments divided by its expected taxable income may exceed the statutory tax rate. As a result, our tax variables as derived from statutory information could underestimate the expected additional tax burden due to foreign ownership. This would explain estimated coefficients less than minus one.

A simple model helps to elucidate the impact of imperfect loss-offset on estimated tax coefficients. Let us consider a firm that makes positive income $i + s > 0$ with probability π, and negative income $i - s < 0$ with probability 1 - π. Expected pre-tax income, denoted *e*, equals $i + (2\pi - 1)s$. Let v be the statutory tax rate. Expected after-tax income, calculated as $e - \pi v(i + s)$, is taken to be positive. The expected tax payment is $\pi v(i + s)$, or equivalently $v[e + (1 - \pi)(s - i)]$. The expected tax payment would instead be *ve*, if there were full loss-offset. The ratio of expected tax payments without and with loss-offset can be computed as $\left[1 + \frac{(1-\pi)(s-i)}{i + (2\pi - 1)s}\right] > 1$. Hence, we can expect estimated tax coefficients to be biased upward in absolute value, as our tax variables fail to account for imperfect loss-offset. Note that the computed ratio increases with the loss probability 1-π and the size of the loss s - i for a given value of i.

This modeling suggests that we can find relatively large, negative estimated tax coefficients for subsamples of firms that are relatively likely to suffer sizeable losses. To explore this, we next estimate regressions analogous to equation 1 of Table 7 for samples that vary in average leverage levels, on the assumption that high leverage makes it more likely that a firm sometimes incurs losses. Specifically, we construct samples of firms with leverage in the top 25 %, the top 50 %, and the top 75 % of the benchmark sample of regression 1 in Table 7, respectively. Columns 1 – 3 of Table 10 report only the estimated tax coefficients for the three regressions for brevity. The estimated coefficient are seen to be -2.469, -0.922, -0.838, respectively, and thus to display an increasing pattern. These estimated coefficients are all less than

the estimate of -0.632 for the overall sample, reproduced as regression 7 in the table. Estimated tax coefficients thus indeed are lower for samples with relatively high-leverage firms, as can be explained by imperfect loss-offset. To conclude this section, we next consider subsamples of firms on the basis of their book-to-market ratio. Firms with a low book-to-market ratio are 'growth firms' with high expected earnings growth and presumably high concomitant income risk. Thus low book-to-market firms may on average be more likely to suffer losses in some periods. We now construct subsamples of firms with book-to-market ratios in the lowest 25 percent, lowest 50 percent, and lowest 75 percent of the overall sample. Estimated tax coefficients, in columns 4 – 6, now are -1.567, -0.944, and -0.872. Again, these parameter estimates are all less than the estimate of -0.632 for the overall sample and this pattern of increasing estimated coefficients is consistent with an imperfect loss-offset explanation.

4.3. Acquirer excess returns and international taxation

Parent country corporate taxation appears to affect the takeover premium less than non-resident dividend withholding taxes. Potentially, this reflects that the incidence of the parent country taxation of the target's income is primarily on acquiring firm shareholders rather than on target firm shareholders. An incidence of parent country taxation primarily on acquiring firm shareholders could be the outcome of implicit bargaining between shareholders of the two firms. An outcome where acquiring firm shareholders bear most of the parent country tax burden would be expected, if potential acquiring firms from third countries are not subject to worldwide taxation in their home countries.

In this section, we examine whether the additional international taxation following a cross-border acquisition can be shown to affect returns to acquiring firm shareholders. Specifically, we investigate whether acquiring firm excess stock market returns around the bid announcement reflect the international tax variables analogously to the takeover bid regressions in Tables 7-9. For this purpose, the acquirer excess return is constructed as the share price appreciation rate between the day after the bid announcement and four weeks prior to the announcement, adjusted for the return on the national stock market over the same period. Share price information from Datastream was collected to be able to compute acquiring firm excess returns for a sufficiently large set of firms.

Regression 1 in Table 11 relates the acquirer firm excess return to the overall tax variable analogously to regression 1 of Table 7. The dependent variable is the acquirer excess return, not adjusted for any size difference the between acquiring and target firms. The sample contains 498 deals, with a mean acquirer excess return of 0.54 percent and a mean bid premium of 48.56 percent.[11] The overall tax variable obtains an estimated coefficient of -0.498 that is significant at the 10 percent level. The hostile variable obtains a negative coefficient that is significant at the 10 percent level to suggest that the acquirer has to pay more in case the bid is hostile. The poison variable enters with a positive and significant coefficient, perhaps because a poison pill tends to prevent value-reducing acquisitions. In regression 2, we include separate withholding and corporate tax variables that obtain coefficients of -0.378 and -0.501, respectively, with the latter being significant at 10 percent. These results suggest that acquiring firm returns are affected by the parent country taxation rather than the non-resident dividend withholding taxation.

Next, we limit the sample to deals where acquiring and target firms are of comparable size to exclude cases where the target firm is simply too small to materially affect acquiring firm returns. Specifically, we restrict the sample to deals where the ratio of acquiring firm market value to target market firm value four weeks prior to the deal announcement lies between 10.0 and 0.1. On account of this restriction, sample size is reduced to 217 deals. Columns 3 and 4 report regressions analogously to those in columns 1 and 2. Estimated tax coefficients in columns 3 and 4 are seen to be of similar size as before but statistically insignificant. Finally, for this restricted sample we adjust the acquirer excess return variable to account for different market values of the two firms. Especially, the acquirer firm excess return is multiplied by the ratio of acquirer market value to target market value as of four weeks prior to deal announcement. This adjustment makes the estimated tax coefficient comparable to the one for the same variable in the bid premium regressions so that a coefficient of -1 indicates a complete pass-through of the target's additional tax burden into acquirer market value. In regression 5, the overall tax variable now obtains a rather large negative coefficient of -3.341 that is statistically insignificant. Similarly, the withholding and corporate tax variables obtain large negative coefficients of -4.941 and -3.318 in regression 6 that are statistically

[11] Matvos and Ostrovsky (2007) show that acquiring firm shareholders frequently hold stock in the targets with generally positive implications for their portfolio returns.

insignificant. Thus, our previous result that the parent tax variables negatively affects acquirer firm excess returns is not robust to changes in the sample size or definition of the acquirer firm excess return. Overall, we conclude that there is no systematic evidence that acquirer excess returns are affected by the prospective international taxation following a cross-border acquisition.

5. Conclusion

Cross-border M&As can trigger additional taxation of the target's income in the form of non-resident dividend withholding taxes and acquirer country corporate income taxes. This taxation reduces the net-of-tax gains from the business combination to be divided among acquirer and target shareholders. This paper provides evidence on how the additional taxation engendered by the cross-border takeover affects the benefits received by target firm shareholders by examining the sensitivity of bid premiums to the additional international taxation. At the same time, we examine whether acquirer firm excess returns around the bid announcement reflect the additional international taxation.

We find that non-resident dividend withholding taxes appear to reduce bid premiums one-for one to suggest that the incidence of this taxation is fully on target firm shareholders. Bid premiums also reflect prospective parent country taxation of the target's income, but less strongly. The relatively weak discounting of parent-country corporate taxation into lower takeover premiums could reflect the practice of worldwide income averaging by multinational firms or perhaps the prospects of future international tax amnesties and moves from worldwide tax systems to territorial tax systems. In the U.S, such a tax regime change was recently proposed by the President's Advisory Panel on Federal Tax Reform (2005). At present, the U.K. is studying a similar proposal outlined in HM Treasury (2007).

We find no systematic evidence that acquirer firm excess returns reflect any additional international taxation triggered by the cross-border takeover. Thus, target shareholders rather than acquirer shareholders appear to absorb the international tax costs of cross-border M&A. This is consistent with previous evidence that target shareholders tend to receive most if not all of the gains from mergers.

The apparent incidence of non-resident dividend withholding taxation on domestic shareholders in the case of a cross-border M&A is probably unintended by local tax policy makers. All the same, non-resident withholding taxes increase the

required pre-tax rate of return on the capital that foreign acquiring firms invest in their targets. As a result, these withholding taxes may well prevent some otherwise profitable cross-border M&As from occurring at all. Similarly, non-resident dividend taxation is likely to increase the required rate of return on investment projects within the target firm, if the capital is raised in the form of equity from the new parent. All this suggests that countries may do well to abolish their non-resident dividend withholding taxes. In the last two decades, these taxes have indeed been reduced on average, not least of account of the EU parent-subsidiary directive of 1990.

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Table 1. Tax regimes across countries in 2004

Country of residence	Corporate tax rate	Subsidiary taxation		Branch taxation	
		With tax treaty	Without tax treaty	With recent tax treaty	Without tax treaty
	(1)	(2)	(3)	(4)	(5)
Austria	34.0	Exemption	Exemption	Exemption	Exemption
Belgium	34.0	Exemption[a]	Exemption[a]	Exemption	Deduction[d]
Bulgaria	19.5	Credit	Credit[b]		Credit
Croatia	20.0	Exemption	Exemption		Credit
Czech Republic	28.0	Credit	Deduction	Credit	Credit
Denmark	30.0	Exemption	Exemption	Credit	Credit
Estonia	0.0	Credit	Credit	Credit	Deduction
Finland	29.0	Exemption	Credit[b]	Credit	Credit
France	35.4	Exemption[a]	Exemption[a]	Exemption	Exemption
Germany	38.3	Exemption[a]	Exemption[a]	Exemption	Credit
Greece	35.0	Credit	Credit	Credit	Credit
Hungary	17.7	Exemption	Exemption	Exemption	Credit
Iceland	18.0	Exemption	Exemption		Credit
Ireland	12.5	Credit	Credit	Credit	Deduction
Italy	37.3	Exemption[a]	Exemption[a]	Credit	Credit
Japan	42.0	Credit	Credit	Credit	Credit
Latvia	15.0	Exemption	Exemption	Credit	Credit
Lithuania	15.0	Exemption	Exemption	Credit	Credit
Luxembourg	30.4	Exemption	Exemption	Exemption	Credit[e]
Netherlands	34.5	Exemption	Exemption	Exemption	Exemption
Norway	28.0	Exemption	Exemption		Credit
Poland	19.0	Credit	Credit	Credit	Credit
Portugal	27.5	Exemption[c]	Exemption[c]	Credit	Credit
Romania	25.0	Credit	Credit	Credit	Credit
Slovak Rep	19.0	Exemption	Exemption	Credit	No relief
Spain	35.0	Exemption	Credit	Credit	Credit
Sweden	28.0	Exemption	Exemption	Credit	Credit
Switzerland	24.0	Exemption	Exemption	Exemption	Exemption
United Kingdom	30.0	Credit	Credit	Credit	Credit
United States	40.0	Credit	Credit	Credit	Credit

Notes: The first column lists the corporate income tax rates including average state and municipal taxes where applicable with respect to retained earnings. The second column lists the countries' method for tax relief that applies to dividend income in presence of a tax treaty. The third column provides the same information in absence of a tax treaty. Note that the method of tax relief for dividend income does not vary between different tax treaties because it is always determined by the domestic tax code. Double tax treaties have no authority over dividend taxation by the receiving country. However, the provisions of the domestic tax code are often conditional on the presence of a tax treaty. The parent firm is assumed to hold a majority in the dividend-paying subsidiary such that participation exemptions take effect. The fourth column lists the method for tax relief that applies to foreign branch income in the presence of a tax treaty. The method for tax relief in the presence of a tax treaty can vary among treaties, in which case no unique applicable tax regime can be indicated. The fourth column indicates the method of tax relief for foreign branch income only if a country has consistently applied the same method in all tax treaties becoming effective in the year 2000 or later. The last column lists the method for tax relief that applies to foreign branch income in the absence of a tax treaty.
Footnotes: a: Only 95 percent of the dividend is exempted. b: Only withholding taxes are credited but not the underlying corporate income tax. c: Only dividend income from EU sources is exempted. Other dividend income is taxed. Tax credits are provided for withholding taxes. d: Belgium only charges 25 percent of the standard tax rate if the deduction regime applies in order to reduce double taxation. e : In case of excess foreign tax credits, Luxembourg allows a deduction of the excess foreign tax taxes as expenses.

Table 2. Withholding tax rates in 2004

Source country	No treaty	Aus	Bel	Bul	Cro	Cz	Den	Est	Fin	Fra	Ger	Gre	Hun	Icel	Irel	Ita	Jap	Lat	Lith	Lux	Neth	Nor	Pol	Por	Rom	Slvk	Spa	Swe	Swi	UK	USA
Austria			0	0	10	0	15	0	0	0	0	10	25	0	0	10	25	25	0	0	5	10	0	15	10	0	0	0	0	5	5
Belgium	25	0		5	5	0	15	0	0	0	0	10	5	0	0	5	15	5	0	0	5	5	0	5	15	0	0	10	0	5	5
Bulgaria	15	0	10		10	5	15	0	5	15	10	10	15	5	10	10	15	15	5	5	15	10	10	10	10	5	10	5	10	15	15
Croatia	15	0	5	5		5	5	5	5	15	5	5	15	5	10	15	5	5	15	0	15	5	15	5	5	15	5	5	5	15	15
Czech Rep	15	10	5	10	5		5	5	10	5	15	5	5	5	15	10	5	5	5	0	5	5	15	10	5	5	0	5	5	5	5
Denmark	28	0	0	5	5	15		0	0	0	0	5	0	0	0	0	5	5	0	0	0	5	0	10	15	0	0	0	0	0	0
Estonia	26	15	15	26	5	15	15		5	15	26	15	5	15	5	26	15	15	26	15	0	15	15	26	26	15	15	0	15	0	0
Finland	29	0	0	10	5	15	0	15		0	0	15	0	0	0	10	15	15	0	0	0	15	0	5	15	0	0	5	0	5	5
France	25	0	0	5	5	10	0	5	0		0	5	5	0	0	0	5	5	0	0	0	5	0	10	10	0	0	0	0	5	5
Germany	21	0	0	15	15	5	0	5	0	0		5	5	0	0	15	5	5	0	0	0	5	0	5	5	0	0	0	0	5	5
Greece	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hungary	20	10	10	10	5	5	5	5	5	5	5	10		5	10	10	20	20	5	5	10	10	15	5	5	5	0	10	5	5	5
Iceland	15	15	5	15	15	5	0	5	0	5	5	15	15		15	15	5	5	5	0	0	5	10	15	5	5	0	5	5	5	5
Ireland	20	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Italy	27	0	0	10	10	15	0	5	0	0	0	0	10	27	0		27	5	0	0	15	10	0	10	15	0	0	15	0	5	5
Japan	20	10	10	10	20	10	10	20	10	0	10	20	10	20	10	10		20	5	5	5	10	20	10	10	10	5	10	10	10	10
Latvia	10	10	5	10	5	5	5	5	5	5	5	10	10	5	5	10	10		10	5	5	5	10	10	10	10	5	5	5	5	5
Lithuania	10	10	5	10	5	5	5	0	5	5	5	10	10	5	5	5	10	0		5	5	5	10	10	10	5	5	5	5	5	5
Luxembourg	0[a]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0
Netherlands	25	0	0	5	0	0	0	5	0	0	0	0	5	0	0	0	5	5	5	0		5	0	0	0	0	0	0	0	5	5
Norway	25	0	0	15	15	5	0	5	0	0	0	0	10	0	0	0	5	5	5	0	0		0	10	5	0	0	5	0	15	15
Poland	19	10	5	10	5	5	0	5	5	5	5	19	10	5	0	10	10	5	5	5	5	5		5	5	5	5	5	5	5	5
Portugal	25	0	0	10	25	15	0	15	0	0	0	0	15	10	0	0	25	10	10	0	0	10	10		15	0	0	10	0	5	5
Romania	15	15	5	10	5	10	10	15	5	10	5	15	5	15	3	10	10	10	10	5	0	10	5	10		10	10	10	10	10	10
Slovak Rep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Spain	15	0	0	5	15	5	0	5	0	0	0	0	5	5	0	0	10	15	5	0	0	15	5	0	10	5		10	0	10	10
Sweden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0
Switzerland	35	0	10	5	5	5	0	5	5	0	0	5	10	5	10	15	10	5	5	0	0	5	5	10	10	5	10	0		5	5
UK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
USA	0[b]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Notes: The "No treaty" column lists the withholding tax rates that apply to dividend payments to non-resident corporations in the absence of a tax treaty or any domestic regulation with regard to the EU Parent-Subsidiary Directive. Minimum participation exemptions are taken into account. The remaining part of the table list the applicable withholding tax rate on a bilateral basis where the source countries are listed on the left and the receiving countries at the top. The table contains data for January 1st 2004. Footnotes: a: The zero withholding tax does not apply to all types of Luxembourg corporations. For some types it is 20 percent if there are no reductions due to tax treaties. b: Withholding tax is not imposed on dividends paid to foreign corporations if the dividends are effectively connected to the conduct of a trade or business in the United States.

Table 3. Expressions for the double tax rate τ_{ij}

Form of double tax relief	Condition	Double tax rate τ_{ij}
None		$t_i + (1 - t_j) w_{ij}$
Indirect foreign tax credit	$t_j + (1-t_j) w_{ij} \geq t_i$	$(1 - t_j) w_{ij}$
	$t_j + (1-t_j) w_{ij} < t_i$	$t_i - t_j$
Direct foreign tax credit	$w_{ij} \geq t_i$	$(1 - t_j) w_{ij}$
	$w_{ij} < t_i$	$(1 - t_j) (t_i - w_{ij})$
Exemption		$(1 - t_j) w_{ij}$
Deduction		$(1 - t_j) [w_{ij} + (1 - w_{ij}) t_i]$

Notes: The variable t_i is the corporate income tax rate in parent country i; t_j is the corporate income tax rate subsidiary country j; w_{ij} is the withholding tax rate for dividends repatriated from a subsidiary in country j to a parent firm in country i. In case of a direct foreign tax credit, foreign corporate income taxes are taken to be deductible expenses against taxable corporate income in the parent country.

Table 4. Summary information on transactions by acquiring nation

	Number	Total value of transactions	Mean premium	Mean overall tax rate	Mean withholding tax rate	Mean parent tax rate	Percentage of M&As with positive overall tax rate
Austria	7	0.761	0.41	2.86	2.86	0	28.6
Belgium	32	18.965	0.46	2.54	0.47	2.07	100
Denmark	27	6.391	0.49	1.11	1.11	0	22.2
Finland	15	17.123	0.50	0	0	0	0
France	100	130.226	0.56	2.21	0.30	1.91	100
Germany	87	162.836	0.44	2.12	0.52	1.60	69
Greece	2	3.139	0.34	3.57	0	3.57	50
Iceland	2	0.116	1.00	0	0	0	0
Ireland	20	6.270	0.45	1.90	0	1.90	25
Italy	38	26.819	0.52	4.36	0.92	3.44	92.1
Japan	35	24.095	0.56	20.65	0.29	20.36	100
Luxembourg	7	0.982	0.34	0	0	0	0
Netherlands	82	79.099	0.45	0.06	0.06	0	1.2
Norway	5	1.690	0.35	5.60	0	5.60	20
Portugal.	1	0.022	0.31	0	0	0	0
Spain	14	16.145	0.25	0.71	0.71	0	7.1
Sweden	49	23.717	0.47	0.61	0.61	0	8.2
Switzerland	52	76.796	0.48	1.25	1.25	0	17.3
United Kingdom	202	541.489	0.45	1.21	0.27	0.94	11.9
United States	171	131.109	0.47	11.07	2.39	8.73	100
Total	948	1267.791	0.47	3.95	0.79	3.16	51.4

Notes: Value of transactions is in billions of U.S. dollars. The premium is computed as a share. The overall tax rate is the overall additional double tax rate as a percent of income net of the target country corporate income tax. Withholding tax rate is the non-resident dividend withholding tax rate in percent. Parent tax rate is the additional acquirer country corporate tax rate in percent. Minimum participation exemptions are taken into account in calculating the withholding tax rate.

Table 5. Summary information on transactions by target nation

	Number	Value of transactions	Mean premium	Mean overall tax rate	Mean withholding tax rate	Mean parent tax rate	Percentage of M&As with positive overall tax rates
Austria	7	12.439	0.40	3.23	1.43	1.80	57.1
Belgium	17	27.089	0.36	1.35	0.29	1.06	58.8
Croatia	1	0.405	0.09	16.15	10.00	6.15	100
Czech Republic	2	1.199	0.47	5.91	5.00	0.91	100
Denmark	5	6.854	0.67	7.56	2.00	5.56	60
Estonia	2	0.080	0.46	21.50	7.50	14.00	100
Finland	10	15.278	0.39	2.09	0.50	1.59	40
France	87	48.839	0.44	2.09	1.26	0.83	56.3
Germany	30	222.442	0.35	2.06	2.00	0.06	43.3
Greece	4	2.208	0.16	0	0	0	0
Hungary	3	0.130	0.20	10.71	8.33	2.38	100
Ireland	11	6.136	0.42	14.40	0	14.40	81.8
Italy	10	1.875	0.41	3.46	3	0.46	60
Japan	12	5.623	0.32	8.21	7.92	0.30	100
Latvia	2	0.085	0.16	5.00	5.00	0	100
Lithuania	2	0.120	0.44	5.00	5.00	0	100
Luxembourg	1	1.789	0.41	0	0	0	0
Netherlands	31	36.357	0.43	2.03	0.81	1.23	54.8
Norway	27	12.953	0.44	4.37	3.33	1.04	55.6
Poland	24	1.466	0.18	7.06	4.79	2.26	91.7
Portugal	3	0.798	0.34	3.95	3.33	0.61	66.7
Slovenia	1	0.134	0.39	6.82	5.00	1.82	100
Spain	8	4.248	0.35	2.73	2.50	0.23	37.5
Sweden	32	55.668	0.48	6.26	1.56	4.69	65.6
Switzerland	6	3.082	0.25	6.33	5.00	1.33	100
United Kingdom	221	228.338	0.50	6.77	0	6.77	70.6
United States	389	572.159	0.53	2.20	0	2.20	31.6
Total	948	1267.791	0.47	3.95	0.79	3.16	51.4

Notes: Value of transactions is in billions of U.S. dollars. The premium is computed as a share. The overall tax rate is the overall additional double tax rate as a percent of income net of the target country corporate income tax. Withholding tax rate is the non-resident dividend withholding tax rate in percent. Parent tax rate is the additional acquirer country corporate tax rate in percent. Minimum participation exemptions are taken into account in calculating the withholding tax rate.

Table 6. Summary statistics of premium, tax and control variables.

	Number of observations	Average	Standard derivation	Minimum	Maximum
Premium	948	0.47	0.34	0.00	1.98
Overall tax rate	948	3.95	6.19	0	28.18
Withholding tax rate	948	0.79	2.36	0	15
Parent tax rate rate	948	3.16	5.89	0	28.18
Market value	943	5.28	1.78	-0.21	11.26
Book-to-market	783	0.69	0.71	-1.87	7.29
Leverage	789	0.58	0.26	0.01	2.25
Equity	948	0.07	0.25	0	1
Cash	948	0.64	0.48	0	1
Hostile	948	0.05	0.21	0	1
Poison	946	0.01	0.10	0	1
Tender	946	0.73	0.44	0	1
Cleanup	948	0.16	0.36	0	1

Notes: The premium is computed as a share. The overall tax rate is the overall additional double tax as a share of income net of the target country corporate income tax in percent. Withholding tax is the non-resident dividend withholding tax in percent. Minimum participation exemptions are taken into account in calculating the withholding tax rate. Parent tax rate is the additional acquirer country corporate tax as a share of income net of the target country corporate income tax in percent. Market value is the log of the market value of the target in millions of U.S. dollars. Book-to-market is the ratio of the book and market values of the target. Leverage is the ratio of the liabilities and assets of the target. Equity is dummy variable signaling an all equity transaction. Cash is a dummy variable signaling an all cash transaction, Hostile is a dummy variable signaling the offer is not supported by the board of the target. Poison is a dummy variable signaling the presence of a poison pill. Tender is a dummy variable signaling there is a tender offer for all shares. Cleanup is a dummy variable signaling the acquisition of a remaining interest with initial interest exceeding 50 percent.

Table 7. The impact of taxes on bid premiums

	Combined tax variable (1)	Split tax variable (2)	Logged premium (3)	Manufacturing (4)
Overall tax	-0.632			
	(0.328)*			
Withholding tax		-1.847	-3.921	-3.108
		(0.624)**	(1.961)**	(0.969)***
Parent tax		-0.516	-1.667	-1.364
		(0.338)	(0.979)*	(0.552)**
Market value	-0.033	-0.033	-0.043	-0.025
	(0.008)***	(0.008)***	(0.025)*	(0.011)**
Book-to-market	0.060	0.060	0.099	0.062
	(0.022)***	(0.022)***	(0.049)**	(0.039)
Leverage	0.098	0.095	0.125	0.159
	(0.048)**	(0.048)**	(0.138)	(0.092)*
Equity	0.142	0.134	0.297	0.157
	(0.058)**	(0.059)**	(0.158)*	(0.086)*
Cash	0.031	0.029	0.089	0.020
	(0.029)	(0.029)	(0.094)	(0.043)
Hostile	-0.044	-0.039	-0.131	-0.129
	(0.052)	(0.052)	(0.178)	(0.079)
Poison	0.289	0.284	0.643	0.187
	(0.150)*	(0.174)*	(0.257)**	(0.117)
Tender	0.085	0.083	0.207	0.118
	(0.027)***	(0.027)***	(0.079)***	(0.042)***
Cleanup	-0.121	-0.123	-0.517	-0.189
	(0.038)***	(0.038)***	(0.137)***	(0.056)***
N	781	781	781	407
R^2	0.23	0.23	0.22	0.32

Notes: The dependent variable in columns 1, 2 and 4 is the premium as a share. The dependent variable in column 3 is the log of the premium as a share. The overall tax is the overall additional double tax as a share of income net of the target country corporate income tax. Withholding tax is the non-resident dividend withholding tax as a share. Parent tax is the acquirer country corporate tax as a share of income net of the target country corporate income tax. Market value is the log of the market value of the target in millions of U.S. dollars. Book-to-market is the ratio of the book and market values of the target. Leverage is the ratio of the liabilities and assets of the target. Equity is dummy variable signaling an all equity transaction. Cash is a dummy variable signaling an all cash transaction. Hostile is a dummy variable signaling the offer is not supported by the board of the target. Poison is a dummy variable signaling the presence of a poison pill. Tender is a dummy variable signaling there is a tender offer for all shares. Cleanup is a dummy variable signaling the acquisition of a remaining interest with initial interest exceeding 50 percent. In column 4 the sample is restricted to manufacturing. All regressions are estimated using OLS and include acquirer country, target country and year fixed effects. We report robust standard errors in parentheses. * denotes significance at 10%, ** significance at 5%, and *** significance at 1 percent.

Table 8. The impact of taxes on bid premiums: robustness checks

	EU vs non EU (1)	Parent countries (2)	Truncated (3)	Truncated (4)	Clustering (5)	No country effects (6)
Overall tax			-1.019			
			(0.520)**			
Withholding tax	-1.765	-1.689		-3.717	-1.847	-1.647
	(0.618)***	(0.616)***		(1.448)***	(0.634)**	(0.428)***
Parent tax				-0.882	-0.516	0.026
				(0.528)*	(0.414)	(0.193)
Parent tax EU	-1.197					
	(0.800)					
Parent tax non EU	-0.372					
	(0.367)					
Parent tax Japan		-0.373				
		(0.480)				
Parent tax UK		-0.870				
		(1.042)				
Parent tax US		-0.170				
		(0.638)				
Parent tax Other		-1.057				
		(0.735)				
Market value	-0.033	-0.032	-0.060	-0.060	-0.033	-0.030
	(0.008)***	(0.008)***	(0.014)***	(0.013)**	(0.009)***	(0.708)***
Book-to-market	0.061	0.060	0.077	0.076	0.060	0.057
	(0.022)***	(0.022)***	(0.031)**	(0.030)**	(0.011)***	(0.020)***
Leverage	0.096	0.094	0.167	0.161	0.095	0.078
	(0.048)**	(0.048)*	(0.080)**	(0.079)**	(0.019)***	(0.045)*
Equity	0.132	0.130	0.255	0.243	0.134	0.126
	(0.059)**	(0.060)**	(0.093)***	(0.093)***	(0.040)**	(0.057)**
Cash	0.028	0.027	0.057	0.054	0.029	0.043

	(0.029)	(0.029)	(0.052)	(0.051)	(0.010)**	(0.025)*
Hostile	-0.039	-0.038	-0.071	-0.064	-0.039	-0.057
	(0.052)	(0.052)	(0.096)	(0.096)	(0.058)	(0.051)
Poison	0.284	0.277	0.414	0.406	0.284	0.323
	(0.147)*	(0.147)*	(0.200)**	(0.195)**	(0.143)*	(0.141)**
Tender	0.082	0.082	0.157	0.152	0.083	0.043
	(0.027)***	(0.028)***	(0.049)***	(0.049)***	(0.022)**	(0.025)*
Cleanup	-0.122	-0.121	-0.245	-0.245	-0.123	-0.098
	(0.038)***	(0.038)***	(0.076)***	(0.075)***	(0.041)**	(0.035)
N	781	781	781	781	781	781
R^2	0.23	0.23			0.23	0.17

Notes: The dependent variable is the premium as a share. The overall tax is the overall additional double tax as a share of income net of the target country corporate income tax. Withholding tax is the non-resident dividend withholding tax as a share. Parent tax is the additional acquirer country corporate tax as a share of income net of the target country corporate income tax. Parent tax EU is parent tax interacting with a dummy variable signaling that both acquirer and target countries are EU member states. Parent tax non EU is parent tax interacting with a dummy variable signaling that not both acquirer and target countries are EU member states. Parent tax US is parent tax interacted with a dummy variable signaling that the acquirer country is the US. Parent tax UK is parent tax interacted with a dummy variable signaling that the acquirer country is the UK. Parent tax Japan is parent tax interacted with a dummy variable signaling that the acquirer country is Japan. Parent tax other is parent tax interacted with a dummy variable signaling that the acquirer country is any other country. Market value is the log of the market value of the target in millions of U.S. dollars. Book-to-market is the ratio of the book and market values of the target. Leverage is the ratio of the liabilities and assets of the target. Equity is dummy variable signaling an all equity transaction. Cash is a dummy variable signaling an all cash transaction. Hostile is a dummy variable signaling the offer is not supported by the board of the target. Poison is a dummy variable signaling presence of a poison pill. Tender is a dummy variable signaling there is a tender offer for all shares. Cleanup is a dummy variable signaling the acquisition of a remaining interest with initial interest exceeding 50 percent. Regressions 1 through 5 include acquirer country, target country and year fixed effects, while regression 6 includes only year fixed effects. The regressions in columns 1, 2, 5 and 6 are estimated using OLS. In regression 5, we correct standard errors for clustering across industry observations. For regressions 1, 2, 5 and 6, we report robust standard errors in parentheses. Regressions 3 and 4 are truncated regressions with a lower limit of zero. * denotes significance at 10%, ** significance at 5%, and *** significance at 1 percent.

Table 9. The impact of taxes on bid premiums: additional tax considerations

	Gross income (1)	Branch (2)	Deferral (3)	Profit shifting (4)
Overall tax gross	-0.928			
	(0.480)*			
Overall tax		-0.357		
		(0.352)		
Withholding tax			-1.851	-1.764
			(0.622)***	(0.644)***
Parent tax				-0.543
				(0.337)
Parent tax deferral			-0.507	
			(0.427)	
Parent tax no deferral			-0.526	
			(0.528)	
Tax difference				-0.222
				(0.319)
Market value	-0.033	-0.033	-0.033	-0.032
	(0.008)***	(0.008)***	(0.008)***	(0.008)***
Book-to-market	0.061	0.061	0.060	0.060
	(0.022)***	(0.022)***	(0.022)***	(0.022)***
Leverage	0.098	0.097	0.095	0.094
	(0.048)**	(0.048)**	(0.048)**	(0.048)**
Equity	0.142	0.143	0.134	0.135
	(0.058)**	(0.058)**	(0.059)**	(0.059)**
Cash	0.031	0.033	0.029	0.030
	(0.029)	(0.029)	(0.029)	(0.029)
Hostile	-0.044	-0.040	-0.039	-0.041
	(0.052)	(0.052)	(0.052)	(0.052)
Poison	0.290	0.284	0.284	0.284
	(0.150)*	(0.149)*	(0.147)*	(0.148)*
Tender	0.085	0.084	0.083	0.082
	(0.027)***	(0.027)***	(0.027)***	(0.027)***
Cleanup	-0.121	-0.118	-0.123	-0.124
	(0.038)***	(0.038)***	(0.038)***	(0.038)***
N	781	781	781	781
R^2	0.23	0.23	0.23	0.23

Notes: The dependent variable is the premium as a share. The overall tax gross is the overall additional double tax computed as a share of the income of the target before the target country corporate income tax. The overall tax is the overall additional double tax as a share of income net of the target country corporate income tax. In column 2 the overall tax is computed on the assumption that the target becomes a foreign branch. Withholding tax is the non-resident dividend withholding tax as a share. Parent tax is the additional acquirer country corporate tax as a share of income net of the target country corporate income tax. Parent tax deferral is the acquirer country corporate tax as a share of income net of the target country corporate income tax interacted with a dummy variable signaling that acquirer country tax can be deferred if the income is not repatriated. Parent tax no deferral is the acquirer country corporate tax as a share of income net of the target country corporate income tax interacted with a dummy variable signaling that acquirer country tax cannot be deferred. Tax difference is the absolute value of the difference of the tax rates of the acquirer and target countries where the latter is adjusted to take into account non-resident withholding taxation and acquirer country corporate income taxation of the income of the target. Market value is the log of the market value of the target in millions of U.S. dollars. Book-to-market is the ratio of the book and market values of the target. Leverage is the ratio of the liabilities and assets of the target. Equity is dummy variable signaling an all equity transaction. Cash is a dummy variable signaling an all cash transaction. Hostile is a dummy variable

signaling the offer is not supported by the board of the target. Poison is a dummy variable signaling the presence of a poison pill. Tender is a dummy variable signaling there is a tender offer for all shares. Cleanup is a dummy variable signaling the acquisition of a remaining interest with initial interest exceeding 50 percent. All regressions are estimated using OLS and include acquirer country, target country and year fixed effects. We report robust standard errors in parentheses. * denotes significance at 10%, ** significance at 5%, and *** significance at 1 percent.

Table 10. Tax coefficients and firm heterogeneity in expected losses

	Leverage			Book-to-market			
	Top 25 percent	Top 50 percent	Top 75 percent	Bottom 25 percent	Bottom 50 percent	Bottom 75 percent	Full sample
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Overall tax	-2.469 (0.904)***	-0.922 (0.526)*	-0.838 (0.373)**	-1.567 (0.769)**	-0.944 (0.479)**	-0.872 (0.380)**	-0.632 (0.328)*
N	195	390	586	195	390	586	781
R^2	0.35	0.29	0.26	0.36	0.27	0.20	0.23

Notes: The dependent variable is the premium as a share. The overall tax is the overall additional double tax as a share of income net of the target country corporate income tax. Regressions include several variables that are not reported. These are Market value defined as the log of the market value of the target in millions of U.S. dollars, Book-to-market defined as the ratio of the book and market values of the target, Leverage defined as the ratio of the liabilities and assets of the target. Equity defined as a dummy variable signaling an all equity transaction, Cash defined as a dummy variable signaling an all cash transaction, Hostile defined as a dummy variable signaling the offer is not supported by the board of the target, Poison defined as a dummy variable signaling the presence of a poison pill, Tender defined as a dummy variable signaling there is a tender offer for all shares, and Cleanup defined as a dummy variable signaling the acquisition of a remaining interest with initial interest exceeding 50 percent. Regressions 1-3 are for samples based on the distribution of the leverage variable. Regressions 4 - 6 are for samples based on the distribution of the book-to-market variable. All regressions are estimated using OLS and include acquirer country, target country and year fixed effects. We report robust standard errors in parentheses. * denotes significance at 10%, ** significance at 5%, and *** significance at 1 percent

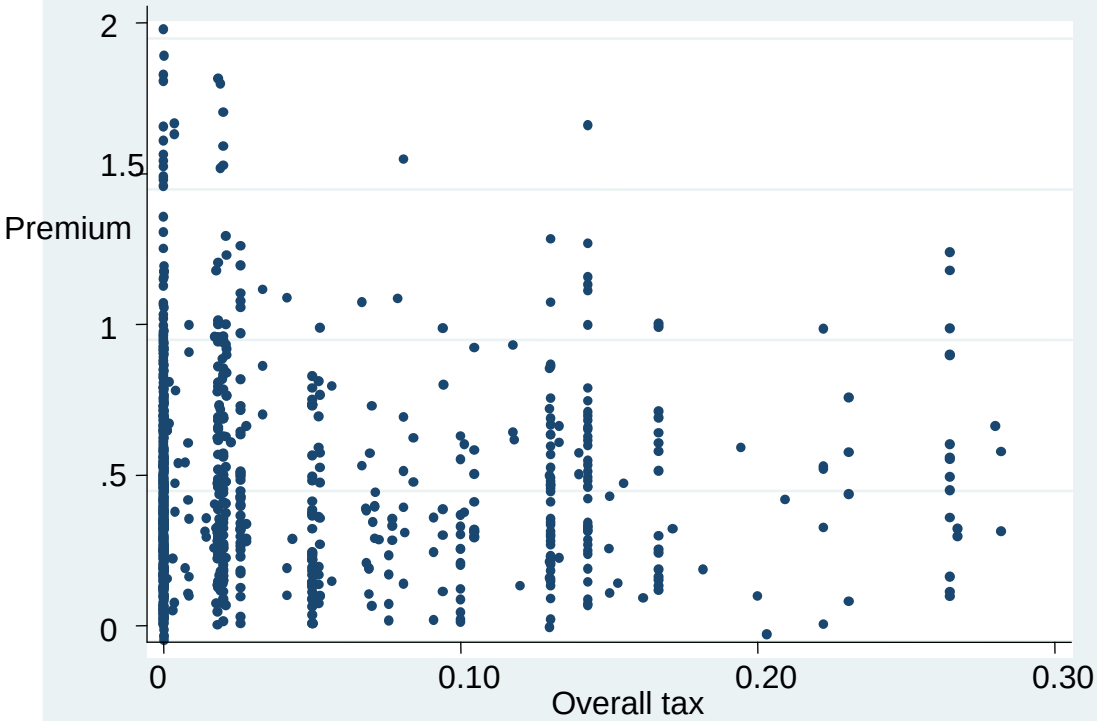
Table 11. The impact of taxes on acquirer excess returns

			Relative size restriction		Return adjusted for relative size	
	(1)	(2)	(3)	(4)	(5)	(6)
Overall tax	-0.498		-0.653		-3.341	
	(0.265)*		(0.428)		(2.263)	
Withholding tax		-0.378		-0.594		-4.941
		(0.861)		(1.629)		(10.427)
Parent tax		-0.501		-0.654		-3.318
		(0.259)*		(0.422)		(2.222)
Market value	-0.006	-0.006	-0.018	-0.018	-0.142	-0.141
	(0.005)	(0.005)	(0.008)**	(0.009)**	(0.065)**	(0.066)**
Book-to-market	0.015	0.015	0.006	0.006	-0.112	-0.111
	(0.012)	(0.012)	(0.033)	(0.033)	(0.173)	(0.174)
Leverage	-0.026	-0.025	-0.064	-0.064	-0.643	-0.649
	(0.032)	(0.032)	(0.065)	(0.065)	(0.395)	(0.394)
Equity	0.024	0.024	0.070	0.070	0.133	0.133
	(0.030)	(0.031)	(0.045)	(0.045)	(0.253)	(0.254)
Cash	0.013	0.013	0.034	0.034	0.248	0.243
	(0.020)	(0.020)	(0.037)	(0.038)	(0.257)	(0.266)
Hostile	-0.039	-0.040	-0.038	-0.038	-0.117	-0.107
	(0.021)*	(0.021)*	(0.038)	(0.036)	(0.189)	(0.176)
Poison	0.063	0.064	0.064	0.065	0.471	0.462
	(0.027)**	(0.027)**	(0.043)	(0.043)	(0.239)*	(0.239)*
Tender	-0.001	-0.001	-0.001	-0.001	-0.030	-0.032
	(0.014)	(0.014)	(0.024)	(0.025)	(0.138)	(0.138)
Cleanup	-0.030	-0.030	-0.012	-0.011	-0.110	-0.108
	(0.022)	(0.022)	(0.030)	(0.030)	(0.149)	(0.149)
Acquirer rel. market value					-0.052	-0.052
					(0.036)	(0.036)

N	498	498	217	217	217	217
R^2	0.24	0.24	0.30	0.30	0.29	0.29

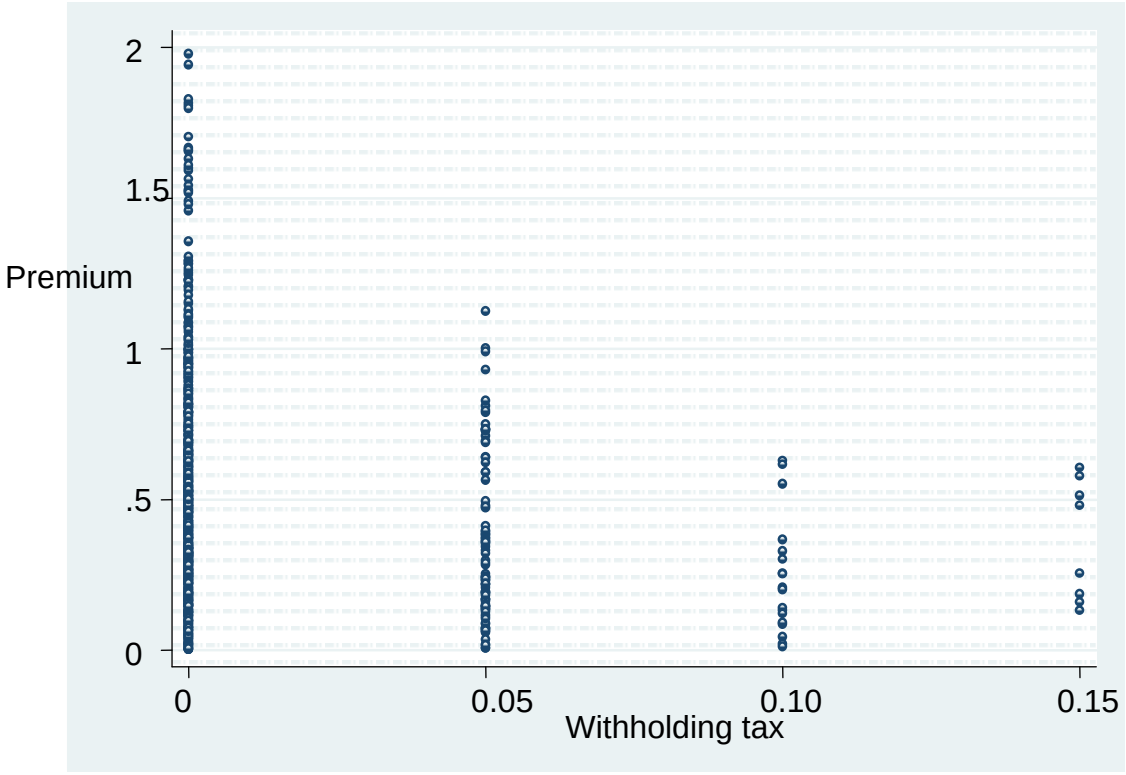
Notes: The dependent variable in columns 1 through 4 is the excess return on the acquiring firm stock around the bid announcement. The dependent variable in columns 5 and 6 is the acquiring firm excess return times the ratio of acquiring firm market value to target firm market value. The overall tax is the overall additional double tax as a share of income net of the target country corporate income tax. Withholding tax is the non-resident dividend withholding tax as a share. Parent tax is the acquirer country corporate tax as a share of income net of the target country corporate income tax. Market value is the log of the market value of the target in millions of U.S. dollars. Book-to-market is the ratio of the book and market values of the target. Leverage is the ratio of the liabilities and assets of the target. Equity is dummy variable signaling an all equity transaction. Cash is a dummy variable signaling an all cash transaction. Hostile is a dummy variable signaling the offer is not supported by the board of the target. Poison is a dummy variable signaling the presence of a poison pill. Tender is a dummy variable signaling there is a tender offer for all shares. Cleanup is a dummy variable signaling the acquisition of a remaining interest with initial interest exceeding 50 percent. Acquirer relative market value is the ratio of acquirer firm market value to target firm market value. In columns 3-6 the sample is restricted to deals where the ratio of acquiring firm market value and target firm market value lies between 0.1 and 10. All regressions are estimated using OLS and include acquirer country, target country and year fixed effects. We report robust standard errors in parentheses. * denotes significance at 10%, ** significance at 5%, and *** significance at 1 percent.

Figure 1. The bid premium and the overall tax



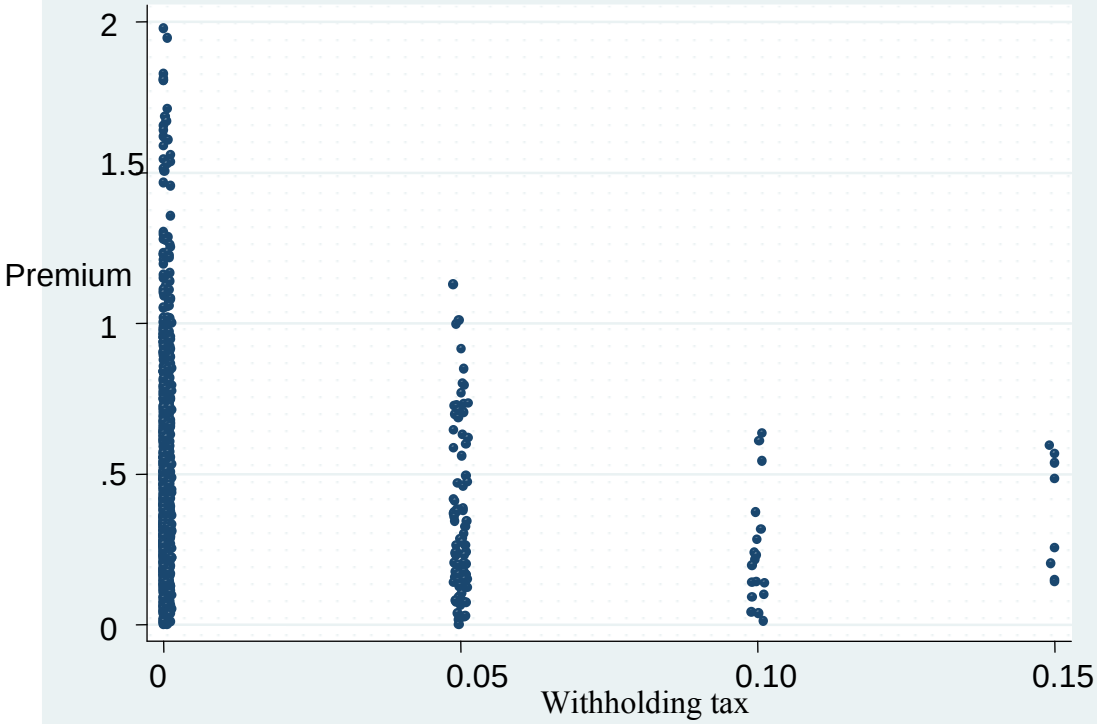
Notes: The bid premium is computed as a share. The overall tax is the additional tax due to non-resident dividend withholding taxation and acquirer country corporate income taxation computed as a share of the target's income net of target country corporate income tax.

Figure 2. The bid premium and the withholding tax



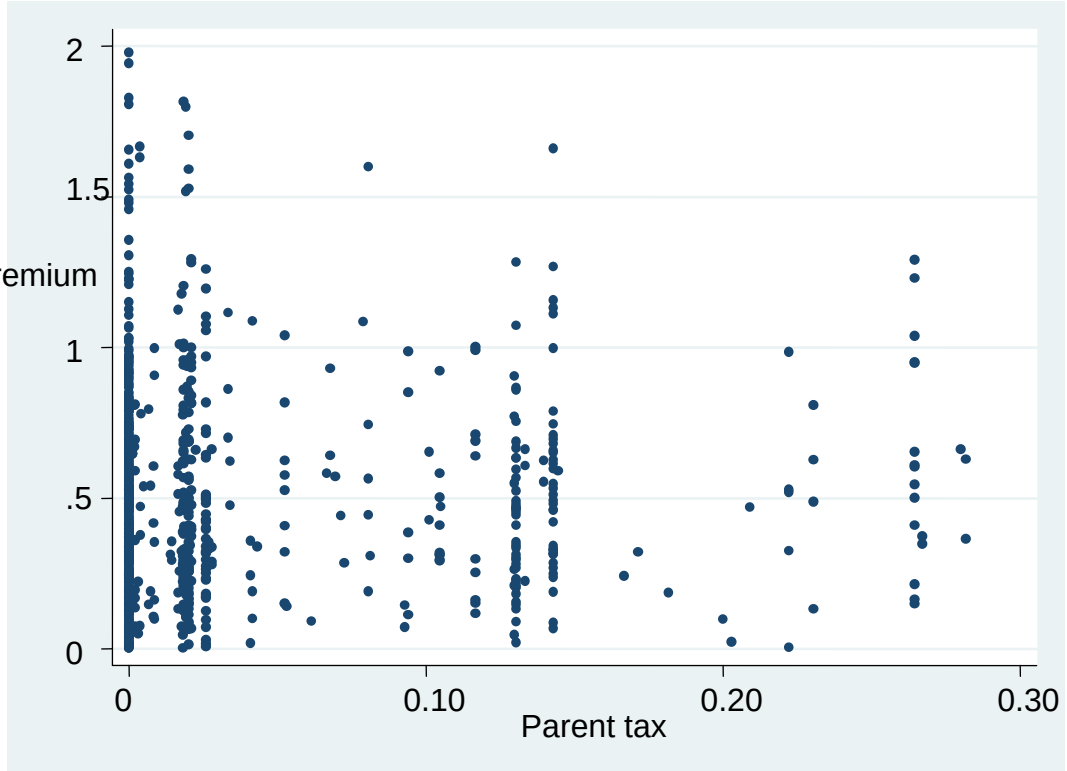
Notes: The bid premium is computed as a share. The withholding tax is the non-resident dividend withholding tax computed as a share.

Figure 3. The bid premium and the withholding tax after jittering observations



Notes: The bid premium is computed as a share. The withholding tax is the non-resident dividend withholding tax computed as a share. Observations are jittered to better view the frequency of premium values for each of the four values of the withholding tax in the data set.

Figure 4. The bid premium and the parent tax



Notes: The bid premium is computed as a share. The parent tax is the acquirer country corporate income tax as a share of the target's income net of target country corporate income tax.

Appendix A. Variable definitions and date sources

Variable	Description	Sources
Premium	Bid premium computed as ratio of bid price and the share price four weeks before announcement minus the ratio of the target country stock market index and the target country stock market index four weeks before the announcement	Thomson SDC
Overall tax	The overall additional tax due to non-resident dividend withholding taxation and acquirer country corporate income taxation computed as a share of income of the target net of target country corporate income tax	For corporate income tax rates: Chennells and Griffith (1997) Eurostat (2004), KPMG International Tax and Legal Center (2003). For tax regimes, tax treaties and withholding taxes: Coopers & Lybrand (1998), IBFD (2005a, 2005b, 2005c, 2005d). Previous issues of these publications were consulted as well.
Overall tax gross	The overall additional double tax due to non-resident dividend withholding taxation and acquirer country corporate income taxation computed as a share of the income of the target before the target country corporate income tax.	As above
Withholding tax	Non-resident dividend withholding tax rate as a share	As above
Parent tax	Double tax due to acquirer country corporate income taxation as a share of the income of the target net of target country corporate income tax	As above
Tax difference	The absolute value of the difference of the tax rates of the acquirer and target countries where the latter is adjusted to take into account non-resident withholding taxation and acquirer country corporate income taxation of the income of the target	As above
Market value	Log of market value of target four weaker prior to announcement in millions of U.S. dollars	Thomson SDC
Book-to-market	Book value of target divided by market value of target four weeks prior to announcement	Compustat North America, Compustat Global, and Thomson SDC

Leverage	Ratio of liabilities and assets of the target	Compustat North America, and Compustat Global, and Thomson SDC
Equity	Dummy variable signaling an all equity transaction	Thomson SDC
Cash	Dummy variable signaling an all cash transaction	As above
Hostile	Dummy variable signaling an offer that is not supported by the board of the target	As above
Poison	Dummy variable signaling the presence of a poison pill	As above
Tender	Dummy variable signaling there is a tender offer for all shares	As above
Cleanup	Dummy variable signaling the acquisition of a remaining interest with an initial interest exceeding 50 percent.	As above
Acquirer firm excess return	Acquirer firm stock market return between day after bid announcement and four weeks prior to bid announcement minus return on national stock market index over same period	Datastream and Thomson SDC
Acquirer firm relative market value	Ratio of acquirer firm market value to target firm market value four weeks prior to bid announcement	Datastream and Thomson SDC

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