How do taxes affect cross-border acquisitions?

Wiji Arulampalam
University of Warwick, Oxford University Centre for Business Taxation
and Institute for the Study of Labor (IZA), Bonn

Michael P. Devereux
Oxford University Centre for Business Taxation and European Tax Policy Forum

Federica Liberini
University of Warwick

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Abstract

This paper uses firm-level data to investigate the impact of taxes on the location of mergers and acquisitions. Our theoretical framework suggests that there are many ways in which tax can influence such M&A activity. For example, it is possible that a higher tax rate in the country of the target company could make an acquisition of the tax more likely, less likely, or have no effect at all. Another possibility is that the difference between the home and host country tax rates has an effect. We combine financial and ownership data from a large number of companies in the ORBIS database for 2005 with domestic and cross-border acquisitions in the ZEPHYR database between 2006 and 2008. We estimate a model in which acquiring companies choose in which country to acquire a target company. The results suggest that the predominant effect is that a higher tax rate in the target country has a negative impact on the probability of an acquisition in that country.

The increase in foreign direct investment and cross-border mergers and acquisitions (M&A) over the last two decades is well documented. UNCTAD reports that total flows of foreign direct investment rose from around $250 billion in 1995 to £1.4 trillion in 2000; these flows then fell back, but by 2008, they had risen again to reach nearly £2 trillion. Changes in ownership of corporations through M&As account for a significant fraction of these flows. In 1995, they were nearly $190 billion, by 2000 they had exceed £1.1 trillion, and in the latest figures available in 2006, they were at £880 billion. As Figure 1 shows, while the proportion of FDI flows accounted for by M&As has varied over time, it has rarely been below 50% and it has been over 80%.[1]

These figures suggest that cross-border M&A play a significant role in determining the location of economic activity across the world. It is surprising then that there have been relatively few empirical studies examining the determinants of the locations in which cross-border M&As take place.[2] Di Giovanni (2005) and Coeurdacier, De Santis and Aviat (2009) examine the determinants of aggregate M&A flows between bilateral pairs of countries, using data from 1990-1999 and 1985-2004, respectively. Di Giovanni finds that the size of domestic financial markets has a strong positive association outbound with domestic firms investing abroad, while Coeurdacier et al find significant effects of membership of the EMU and the EU. Both papers find a significantly negative impact of corporate taxation in the country of the acquired company. We extend this work in several ways. First, we focus in particular on the effects of taxation, and assess the conditions under which we might expect a negative effect, a positive effect, or no effect at all. We also estimate the effects of taxation using firm level data.

There is an extensive literature on the effects of taxation in FDI flows, but, as far as we are aware there are no other papers which investigate the impact of taxes on the location of M&A activity. The literature which exists has been surveyed by, for example, Devereux and Maffini (2007) and De Mooij and Ederveen (2008). With some important exceptions, this literature has largely failed to distinguish between different elements of what determines aggregate flows for FDI.

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[1] A useful description of the pattern of cross-border M&A activity is provided by Brakman et al (2006).
[2] Seth et al (2002) investigate the sources of gains and losses on cross border M&As, but do not examine the locations.

First, there is a distinction between the extensive and intensive margins, which is an important element of the literature on the behaviour of multinational companies (see, for example, Markusen, 2002). The extensive margin refers to various discrete choices, for example, whether to locate production abroad, and if so, where to locate it. The intensive margin is the decision as to how much to invest, conditional on deciding to invest in a given form in a given country. As emphasised by Devereux and Griffith (1998), the role played by tax differs between these two margins: discrete choices are generally influenced by an effective average tax rate, while the continuous investment decision depends on the effective marginal tax rate. Another element of the extensive margin is whether, conditional on deciding to produce abroad, whether to expand through greenfield investment or to acquire an existing company.

This paper examines one of these discrete choices. Specifically, for a given acquiring company, we investigate the choice of in which country to acquire another company. We leave to one side the questions of whether the company will choose to make an acquisition, or whether it could expand by greenfield investment instead. We examine this choice using data on individual cross-border and domestic acquisitions. Our empirical approach uses the framework of a mixed logit model, similar to a multinomial logit model; we allow the firm a number of choices of the location of the target company, and seek to identify the determinants of how that location is chosen. We allow for companies to acquire companies in more than one location in the period considered.

To the best of our knowledge, only three other papers estimate the impact of taxation on discrete international location choices. Using the nested logit framework, Devereux and Griffith (1998) consider the determinants of a decision by a US company to choose to locate in one of France, Germany and the UK. That paper does not allow for companies to make multiple choices. Also it identifies whether the US company owns a subsidiary in each of the other countries at a specific moment in time; however, it does not observe the location decision itself, which may have been some time in the past. Two other papers, Büttner and Ruf (2007) and Barrios et al (2008) also use firm level data to investigate discrete location choices of multinational companies. Although they look at acquisitions over time, both use a model that implies that the choice of a home firm to invest in another country i is independent of whether it invests in a third country j. None of these three papers specifically considers M&A location decisions.

Devereux and Griffith consider whether the parent company has a firm in location i at a given moment in time. Büttner and Ruf identify cases where a German parent company has subsidiary in country i in period t, but not period $t-1$. This could be the result of an acquisition or greenfield investment. Barrios et al effectively identify the birth of new companies owned by a foreign parent, which is most easily interpreted as greenfield investment. Nevertheless, all three papers find that taxes in the host country play a significant role in location decisions. Barrios et al also investigate the role of taxes in the parent country, and also find these to be significant.[3]

There have been numerous theoretical contributions to understanding the pattern of cross-border M&A activity, which we draw on in Section 1 below.[4] Industrial organisation theory suggests two broad motives for M&As. First, there is an efficiency motive, through economies of scale, internal technology transfer or coordination of decision making. Second, there is a strategic motive, as firms seek to reduce competition in the market. The extent of these motives may differ between firms, and across countries. For example, the strategic motive of course depends on the degree to which the markets in the two countries are integrated. And clearly greenfield investment has very different strategic implications from acquisition. Host country governments also sometimes view inbound investment in the form of an acquisition rather differently from inbound greenfield investment, on the grounds that it primarily constitutes a change of ownership rather than an addition to the country's capital stock.[5]

This literature informs the approach in Section 1. There may be many different motivations for a cross-border acquisition; we explore the role of taxes in two simple frameworks, which are intended to draw on the efficiency and strategic considerations. As we demonstrate, the role of tax is far from straightforward. In fact, it is straightforward to show that the host country tax rate (of the target company) may have a negative, positive, or no effect on the M&A decision. We develop a number of hypotheses concerning the role of tax in different situations. In the remainder of the

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[3] Approaching a different question, Huizinga and Voget (2009) examine the impact of taxes on the location of the parent company, and find that it too depends on the nature of the tax system.

[4] See, for example, Ferrett (2005), Nocke and Yeaple (2007), Neary (2007, 2009), Norbäck and Persson (20007).

[5] That raises the general question of the optimal tax treatment of inbound and outbound M&A activity, which is addressed by Becker and Fuest (2010) and Norbäck, Persson and Vlachos (20009). These papers aim to identify whether the classical optimal tax results in the literature also apply to cross-border investment in the form of M&As.

paper, we confront these hypotheses with firm-level data on cross-border acquisitions taking place between 2005 and 2008. The data on the acquisitions come from the ZEPHYR database. We combine these data with information on corporate structures and financial positions in 2005, from the ORBIS database. Both datasets are commercially provided by Bureau van Dijk. In Section 2, we set out our empirical methodology and describe the data in more detail. In Section 3 we present our results. We conclude in Section 4.

1. Alternative hypotheses of cross-border acquisitions

The influence of taxes on cross-border merger and acquisition decisions may depend on the nature of the underlying market, and the plans for the new firm after the acquisition has taken place. There are two broad reasons identified in the literature why an acquisition or merger may take place. First, there may be an efficiency motive: the acquisition may permit production to take place at lower cost. Second, there may be a strategic motive: through a merger, the new combined firm may have greater market power and hence higher profit. However, as we demonstrate in a series of simple frameworks below, these motivations – and the models that underlie them - may yield rather different predictions for the effects of taxation.

Our modelling strategy does not set out to provide a general framework, or to develop general equilibrium conditions. Rather it has the more modest aim of identifying the interaction of taxes and the key features of acquisitions and mergers. We consider separately the two motives of efficiency improvement and strategic behaviour, although recognizing that these may not be independent of each other.

Case (i) Efficiency motive

We begin a basic model emphasizing efficiency considerations. We will analyse this primarily on the context of companies which are seeking either to expand their activities, rather than to reduce their costs; however, they seek to do so in an efficient way. These companies may be purely domestic, or they may already be active in more than one country. In the latter case, we assume that they are organized as a simple

multinational company: the headquarters and parent company are located in the "home" country, and subsidiaries are located in "host" countries.[6]

In this model, we assume that the company seeks to expand through acquiring another company, either in the same country (the "home" country) or abroad (the "host" or "foreign" country, denoted by an asterisk). In principle, expansion could take place through capital expenditure ("greenfield" investment), or by acquiring an existing company. However, we leave to one side the possibility of greenfield expansion. We also assume that an acquisition is a more profitable means of expansion than increasing production in the existing plant. And we also ignore in this setting any strategic aspect of the acquisition: that is, we assume that the conditions in the output market are not significantly affected by the expansion. Despite ruling out these factors, we nevertheless identify a rich range of channels by which taxes can affect the acquisition decision, and in particular in which country the acquirer is likely to purchase the target company.

In the simple analysis set out here, we assume that the acquiring company makes either one acquisition, or no acquisition at all. Implicitly, then, either the costs of making more than acquisition are too high, or the benefits in terms of higher income are too low. The central question posed is whether, and how, the tax system can affect the choice of whether to acquire a target in the home country or the host country.

First consider the value of a potential home country target company to its existing owners. Suppose that the company expects to earn a stream of income with a present value of Y, and to incur costs with a present value of C. In the absence of taxes, the value of the company to existing owners is therefore simply $\hat{V} = Y - C$, where the hat indicates the value before taxes.

Now suppose that corporation tax is levied on taxable profit at rate τ. Relief is given for costs. However, this relief may have a present value which is less than the present value of the stream of costs itself. For example, capital expenditure may not be immediately deductible against tax; as a result the present value of the tax deduction will be less than C. Define the proportion of the present value of costs that represent a

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[6] We do not explore the precise pattern of ownership. For example, the parent company may own a subsidiary in country, B, which in turn owns a further subsidiary in C. We do not distinguish this case from that in which the parent company directly owns both companies.

deduction as α, so that the present value of the tax liability is $T = \tau(Y - \alpha C)$, and the value of the company after tax is

$$V = (1 - \tau)(Y - \beta C)$$

where $\beta = (1 - \alpha\tau)/(1 - \tau)$ is a measure of the generosity of the definition of the tax base. For a cash flow tax, levied only on economic rent, then $\alpha = \beta = 1$. We do not consider other taxes in this analysis.[7]

An equivalent expression applies to a possible target company in the foreign country, when all tax variables are denoted with an asterisk.

Let us also suppose that potential targets have different costs: either high or low, denoted C_H and C_L, respectively. This yields four different types of potential targets: at home or abroad, and high or low cost. To spell this out, let us define the value to the existing owner in each case:

home, high cost: $V_H = (1 - \tau)(Y - \beta C_H)$ (1a)

home, low cost: $V_L = (1 - \tau)(Y - \beta C_L)$ (1b)

foreign, high cost: $V_H^* = (1 - \tau^*)(Y - \beta^* C_H)$ (1c)

foreign, low cost: $V_L^* = (1 - \tau^*)(Y - \beta^* C_L)$ (1d)

Now consider the value to the acquiring company. We assume that the acquisition will not take place unless the acquiring company values the target company more highly than the existing shareholders. That is, some surplus must be generated from the acquisition – which must be divided between the acquiring company and the existing owners of the target company.

Before identifying the source of this surplus, an important issue to note in identifying the effects of tax is how the surplus is distributed between the two parties.

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[7] We also do not consider any profits taxes which may be levied on cross-ownership, for example a tax in the home country on dividends repatriated to the parent company. This approach reflects that (a) many countries effectively exempt such income, and (ii) for those that do not, multinational companies typically arrange their affairs so that little tax is collected on such flows.

At the two extremes, the whole surplus will be captured by one of the parties. The maximum price that the acquirer is willing to pay is his own valuation of the target. In this case, the acquirer does not share in the surplus at all. This may happen, for example, if there are many bidding companies, but only one possible target. In this case, the target shareholders would be able to hold out for the entire surplus.[8] Here, the tax system should have no impact on whether the acquisition goes ahead since the acquirer's valuation is post-tax – a higher tax rate would lower his valuation, and hence also lower the price paid. The acquirer would be indifferent between paying higher tax, but a lower acquisition price, and lower tax but a higher acquisition price; in either case the surplus would remain at zero. This leads to:

Proposition 1. If the target firm captures the entire surplus generated by the acquisition, then the tax has no effect on the acquisition decision.

In what follows, we assume instead that the acquirer captures at least some fraction of the surplus. More specifically, we assume that the fraction captured by the acquirer does not depend on the location of the target. In comparing targets located in different countries, the proportion of the surplus captured by the acquirer is then irrelevant. Given this, we make the simplifying assumption that the acquirer captures the whole of the surplus.

Given the simple framework so far, there are three ways in which the acquirer could raise the value of the target company, and thereby create a surplus: (a) increase income, Y; (b) reduce costs, C; or (c) reduce tax liabilities, by reducing the tax rate τ, or by increasing the effective tax allowance, summarized by α and β.

Let us consider each of these in turn.

(a) First, suppose that the acquiring and target companies are in a horizontal relationship: that is, they each produce a similar good which is sold on the world market. But the acquiring company may be larger and have a recognized brand name, which allows it to charge a higher price for its output. By acquiring the target company, it can expand its operations, but it can also increase the value of the target by re-labelling the product with the acquirer's brand, thereby increasing the income stream,

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[8] This is assumed by Norbäck, et al (2009), for example.

Y. Denote the change in the value of the target's income stream as a result of the acquisition to be ΔY, and suppose also that this is independent of the location of the target. Then the surplus generated from the acquisition is

Home $\qquad S = (1 - \tau)\Delta Y$ $\hfill$ (2a)

foreign: $\qquad S^* = (1 - \tau^*)\Delta Y$ $\hfill$ (2b)

It is clear from these expressions that the surplus depends only on ΔY and the statutory tax rate. Assuming that the acquirer captures the same proportion of the surplus in each case, then:

Proposition 2: If the acquirer can increase the value of the income stream in the target, then it will be more likely to acquire a target company in the country with a lower statutory tax rate.

To test this empirically would require distinguishing between acquisitions which result in a high value of ΔY. If the existing profitability of the acquirer is a good predictor of ΔY, then we would expect a stronger negative impact of the statutory rate where the acquirer is relatively profitable.

(b) Second, suppose that the acquiring company is low cost, that the target is initially high cost, and that post-acquisition the acquiring company is able to reduce the costs in the target from C_H to C_L. This may occur through the use of better technology, organization, or management skills. Again, let this be true whether the acquisition is of a domestic or foreign company.

In this case, the surplus generated from the acquisition is

home: $\qquad S = (1 - \alpha\tau)(C_H - C_L)$ $\hfill$ (3a)

foreign: $\qquad S^* = (1 - \alpha^*\tau^*)(C_H - C_L)$ $\hfill$ (3b)

The impact of tax in this case therefore depends on the value of the tax allowances, measured by $\alpha\tau$ and $\alpha^*\tau^*$. This implies that:

Proposition 3: If the acquirer can reduce costs in the target, then it will be more likely to acquire a target company in the country with a high value of tax allowances. A higher value of allowances could be generated by more generous allowances, or by a higher statutory tax rate.

Note then, that we already have opposite predictions for the effect of the statutory tax rate, depending on whether the acquirer is able to increase income, or to reduce costs.

In passing, we might also consider the case here where a potential acquiring company has high costs (say C_H) because it is located in a high wage economy. Such a company may seek to reduce costs (say to C_L) by relocating its production, or part of its production, to a low wage economy. But in this case, the target company would already have low costs. Any surplus arising from the acquisition must therefore result in factors other than simply relocating to gain the benefits of a lower wage. This is, of course, quite possible, but we analyse such possibilities – such as an increase in income – separately.

(c) A third possibility is that the acquirer can affect the tax liability itself. There are at least two ways in which this could happen. To explore these, suppose that the acquirer makes no other changes to the target company.

The first possibility is that either the target company or the acquiring company is in a country with a high tax rate, while the other is in a country with a low tax rate. Now suppose that the relationship between the two companies is a vertical relationship: that is, the company in one country produces a good or service which it sells to the other. To make this more concrete, suppose that the target company supplies a good to its new parent. This good is unique, and hence difficult to value for tax purposes. This gives the new combined company the opportunity to mis-price the transaction to shift income from the high-tax country to the low taxed country. Suppose that the amount of income shifted is X. Then the surplus generated by the newly-acquired opportunity to shift profit is

$$\text{foreign:} \qquad S^* = \left|(\tau - \tau^*)X\right| \geq 0 \qquad\qquad (4)$$

Clearly this opportunity does not exist in the case of a purely domestic acquisition, since this does not create the opportunity to shift profits between countries. More generally, though, the size of the surplus depends both on the extent to which profit-shifting becomes possible (measured by X), and by the difference in statutory tax rates. Summarising:

Proposition 4:   If a cross-border acquisition introduces an opportunity shift profits between countries, then the surplus is higher (a) the greater the amount of profit that can be shifted and (b) the greater the difference in statutory tax rates between the two countries.

Note that the first part of this proposition is important: a multinational company already present in many countries may have limited additional opportunities to shift profit through a new acquisition.

Beyond that, this suggests that acquirers in high tax countries may benefit from purchasing targets in low tax countries, which gives them the opportunity to shift profits out of their home jurisdiction. An acquirer in a low tax country would have a potentially higher surplus than an acquirer in a high tax country in purchasing a target in a high tax country, since it would have the opportunity to shift profits into the home jurisdiction.

Another possibility is that the acquiring company has the opportunity to affect the tax base in the target. One option here is that the acquiring company may substantially increase the proportion of the company financed by debt, thereby increasing interest payments and reducing the tax liability. This is a common technique in leveraged buyouts for example, and is typically associated with private equity. If there is some constraint on the extent to which the target can increase debt prior to the acquisition, then this may provide an opportunity for the acquirer to generate a surplus. In the context of the simple framework here, this would correspond broadly to an increase in α. Denoting the change in α as $\Delta\alpha$, then the value of the surplus in this case is:

home: $\qquad S = \tau\Delta\alpha C_i$ $\hfill$ (5a)

foreign: $\qquad S^* = \tau^*\Delta\alpha^* C_i$ $\hfill$ (5b)

where $i = H, L$. The opportunity to increase the level of debt in the target company may be constrained by domestic thin capitalization rules. Leaving such rules to one side, then we have:

Proposition 5: If an acquisition introduces an opportunity to increase the amount of debt in the target company, then the surplus is higher the higher is the statutory tax rate in the country of the target.

Case (ii) Strategic motive

So far we have explored only efficiency aspects of acquisitions, through generating higher income, lower costs, or simply lower tax liabilities. However, in an industry with a relatively small number of companies, there is clearly the possibility of a strategic motive. One simple approach to analyzing strategic behaviour – see for example, Neary (2007) – is to assume constant unit costs for each firm. This implies that a low cost firm does not need to acquire a target as part of its expansion, since there is no cost constraint on the amount of output it can produce, but only a constraint imposed by the demand side of the market. As a result, in this type of model, a low cost firm will acquire a higher cost firm only with the intention of closing it down. In a market where there are barriers to entry, this would reduce industry output, thereby allowing a rise in the output price and an increase in the per unit profitability of the output of the remaining firms including the acquirer.

Here we review this approach to explore again the impact of taxation on the acquisition decision. The model is as follows. There are n_L low cost firms, with costs of c_L per unit of output, and n_H high cost firms, with unit costs of c_H. There are barriers to entry, so that the number of firms is fixed at $N = n_L + n_H$ unless a firm exits the industry. There is an integrated world demand, given by the linear inverse demand function, $p = a - bx$, where p is the consumer price, and x is total industry output.

Pre-acquisition

Consider the situation before any acquisitions. Each firm maximizes its value. There are four expressions for this value, depending on whether the firm is located at home or abroad, and whether it is high or low cost. These four correspond to t he expressions

given above, except that they here refer to all companies, rather than just targets. Also, they explicitly define the output of each company (x_i and x_i^*, $i = H, L$), and they show explicitly the price and unit cost. Note that, for simplicity, we assume that the definition of the tax base is now common across countries, which implies that the optimal output of a firm of given cost is the same in both countries.

home, high cost: $V_H = (1 - \tau)(p - \beta c_H)x_H$ (6a)

home, low cost: $V_L = (1 - \tau)(p - \beta c_L)x_L$ (6b)

foreign, high cost: $V_H^* = (1 - \tau^*)(p - \beta c_H)x_H$ (6c)

foreign, low cost: $V_L^* = (1 - \tau^*)(p - \beta c_L)x_L$ (6d)

Each firm engages in Cournot competition, choosing output to maximize profit taking the output of the other forms as given. Substituting for p from the industry demand curve, and maximizing with respect to output, we have, for example:

$$\frac{\partial V_L}{\partial x_L} = 0 \Rightarrow x_L = \frac{p - \beta c_L}{b}.$$ (7)

There is an equivalent expression for the other firms. Given this, then

$$V_L = (1 - \tau)bx_L^2.$$ (8)

Industry output is $x = n_L y_L + n_H y_H$. Equilibrium is therefore where:

$$\begin{aligned} x &= n_L \frac{a - bx - \beta c_L}{b} + n_H \frac{a - bx - \beta c_H}{b} \\ &= \frac{Na - n_L \beta c_L - n_H \beta c_H}{b(1 + N)} \end{aligned}$$ (9)

which in turn implies that

$$y_L = \frac{a - (n_H + 1)\beta c_L + n_H \beta c_H}{b(1 + N)}$$ (10a)

and $\quad y_H = \dfrac{a - (n_L + 1)\beta c_H + n_L \beta c_L}{b(1 + N)}$. $\qquad$ (10b)

Acquisition

Now consider the case where a low cost firm in the home country acquires a high cost firm in the foreign country. Since costs are proportional to output, this does not change the production conditions for the acquirer, and there is no motive for acquisition to produce additional output in the target. Instead, the motive in this case is simply to close down the target firm, and hence affect the industry equilibrium.

In this case, each remaining firm chooses its output as before the acquisition. However, there is now one less high cost firm in the industry, which affects the industry equilibrium. Specifically, industry output becomes

$$x' = \dfrac{(N-1)a - n_L \beta c_L - (n_H - 1)\beta c_H}{bN} \qquad (11)$$

Implying a reduction in aggregate output, and raising the market price. Individual outputs would be

$$y'_L = \dfrac{a - n_H \beta c_L + (n_H - 1)\beta c_H}{bN} \qquad (12a)$$

$$y'_H = \dfrac{a - (1 + n_L)\beta c_H + n_L \beta c_L}{bN} \qquad (12b)$$

The surplus available for sharing between acquirer and target would in this case be

$$S = -(1 - \tau^*)b y_H^2 + (1 - \tau)b\left\{ y_L'^2 - y_L^2 \right\} \qquad (13)$$

The first term represents the cost of purchasing the target. Since this firm is then closed down, this term is clearly negative. The second term is the gain in profit to the

acquirer of reducing the number of firms in the industry by one. The surplus is clearly positive only if this gain outweighs the cost of purchasing the target. Note that the second term is also received by other low cost producers in the industry, and that other high cost producers will also gain. As Neary (2007) points out, there is therefore an incentive for low cost firms to encourage acquisitions, but not to be the acquirer.

In this case, though a higher tax rate in the target's country reduces the value of the target company and increases the overall surplus. A lower tax rate in the acquirer's country increases the gain from the reduction in the number of firms in the industry. That is:

Proposition 6: In the case of a strategic acquisition of a high cost target firm, which is closed down after acquisition, then (a) the statutory tax rate applied to the target company has a positive impact on the probability that the target is acquired, and (b) the statutory tax rate applied to the acquirer has a negative impact on the probability of the acquisition proceeding.

An implication of this is that a domestic acquisition is not affected by the tax system, since both the value of the target, and the gains to the acquirer are all affected proportionately by the same tax rate.

2. Empirical Approach

2.1. Methodology

We model the probability of expanding into a particular country using a mixed logit model which allows the parameters of the logit model to be random.[9] Relative to a multinomial logit model, this allows us to model (i) random variations in the response probability to changes in variables, (ii) unrestricted substitution patterns, and (iii) correlated unobserved factors (Train, 2009).

The mixed logit model specification for the latent surplus derived from a particular choice of target company *j* by acquirer *i* is given by

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[9] This model also can be thought of arising from an error components model (Train, 2009).

$$S_{ij} = \boldsymbol{\beta_i'z_{ij}} + \varepsilon_{ij} \qquad (14)$$

where $\boldsymbol{z_{ij}}$ is a vector of explanatory variables (including alternative invariant characteristics), and the coefficients $\boldsymbol{\beta_i}$ are allowed to vary across acquiring companies. The company is assumed to make the choice which gives the largest surplus. Hence conditional on $\boldsymbol{\beta_i}$, the probability that the company i will choose the expansion choice j is

$$\Pr ob(y_{ij} = 1) = \Delta_{ij} = \frac{\exp(\boldsymbol{\beta_i'z_{ij}})}{\sum_k \exp(\boldsymbol{\beta_i'z_{ik}})} \qquad (15)$$

and the unconditional probability of expansion is given by

$$P_{ij} = \int \frac{exp(\boldsymbol{\beta_i'z_{ij}})}{\sum_k exp(\boldsymbol{\beta_i'z_{ik}})} f(\beta)d\beta \qquad (16)$$

where $f(\beta)$ is the density of the coefficients that are allowed to be random. We allow the tax variables to have random coefficients under the assumption that $f(\beta)$ is normal. The model parameters are estimated in NLOGIT version 4 (NLOGIT, 2007) using simulated maximum likelihood with 100 Halton draws.[10]

2.2. Data

The empirical analysis is carried out using a sample extracted from a commercially available firm-level worldwide data set called ORBIS, compiled by the Bureau van Dijk. The source data consist of accounting data from the balance sheet and profit and loss account of companies all around the world from 1996 to 2005. In addition our ORBIS dataset contains information on the ownership structure of the firms in 2005, including the number of shareholders, their names, their country of residence and their percentage interest in the company, and the number of subsidiaries, their names, and the

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[10] See Train (2009) for further details of this model.

percentage participation of the parent company. From this initial dataset, we created a sample of parents and a chain of majority owned subsidiaries going down the 10th level of subsidiaries based on the 2005 information.[11] To these data, we added the information on large number of M&A activities recorded in another commercially available dataset ZEPHYR (also compiled by the Bureau van Dijk) to trace the changes in the ownership structure from 2005 to 2008. The final dataset constructed contains, for each parent company, the list of location of all subsidiaries owned in each year between 2005 and 2008.

Our initial analysis is based on a cross-section sample of parent companies not defined as 'micro' in European Commission (2003) in 2005.[12] From this sample, we selected those parent companies that made an acquisition during the three year period 2006 to 2008 regardless of whether they already had a presence in the new country or not. All parents are treated as responsible for the expansions directly made and for those undertaken by its subsidiaries. The econometric analysis conditions on the financial information related to years 2005 and earlier.

The final sample consists of 2833 acquiring companies located in 79 different countries. We used ownership information from the original full set of data to identify companies in the same group in our sample. Companies were classified as: (i) belonging to a multinational group if they were connected to at least one other company in a different country by an ownership link of at least 50 per cent of the capital; (ii) belonging to a domestic group if the company was connected to other companies by an ownership link of at least 50 per cent but with none of those companies located in a different country; or (iii) as a stand-alone company if it did not have any ownership links with other companies.

Table 1 shows the breakdown of acquiring companies into these three categories. Just over 40% of the sample are multinationals, just over 40% are domestic groups, and the remainder are stand-alone companies. 80% of the companies make an acquisition in only one of the three years, 2006-8. Table 2 indicates the distribution of acquiring company location across countries. The largest country represented is the UK, with 689 companies undertaking an acquisition. This is followed by the USA and

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[11] The year 2005 refers to the period 1st April 2005 to 31st March 2006.
[12] Selecting non-micro companies involved selecting only companies with at least two subsequent years of recorded total assets greater than €2,000 and at least one employee.

France. Table 3 indicates the scale of cross-border acquisition activity. The majority of acquiring companies (around 80%) make an acquisition in only a single country during this time period. Most of the other companies expand into only a small number of countries, although a tiny fraction expanded a great deal.

In our estimation, we want to allow for companies to make more than one acquisition over our time period of 2006-8. In principle, a company could make any number of acquisitions, in any combination of countries. For example, with only 4 possible target countries, there are 15 possible combinations of countries in which the company could acquire between 1 and 4 targets. Given the much larger number of countries which we have in our data, we need to constrain the choices available. We do this by combining options, as shown in Table 4. Specifically, companies are assumed to make their choice from a set of 26 alternatives. Nineteen of these alternatives are individual countries, chosen on the basis of where there were at least 20 single acquisitions. Thus, an acquiring company is deemed to have chosen the United Kingdom, say, if it acquired target companies only in the United Kingdom. For the case of countries for which there were less than 20 acquisitions, or where companies made multiple acquisitions, we have grouped these choices together to preserve cell sizes.[13] This generates a further set of 7 choices: Africa, Asia, Europe & Central Asia, Latin America, non-OECD, OECD, World. An acquiring company is identified as having chosen one of these categories if all of its acquisitions fall into this category. For example, a company acquiring targets in the UK and France would be allocated to the OECD category. A company choosing targets in France and Nigeria would be allocated to the World category.

Table 4 indicates the number of acquiring companies allocated to each of these categories. For example, the largest category is again the UK, with 548 companies making an acquisition only in the UK. A further 498 companies made acquisitions only in OECD countries. The number of acquisitions outside OECD countries is relatively small. Returning briefly to Table 1, since there are 26 possible choices for each of 2,833 acquiring companies, the total number of observations used in estimation is

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[13] The grouping of countries for multiple expansions was made on the basis of availability of relevant data at that particular level of aggregation from the World Bank. This helps to avoid distortions due to differences used in aggregations.

2833x26=73658 observations. Table 5 shows the allocation of the acquisitions made across the three years 2006-8.

2.3. Variables

We use a number of variables drawn from the theoretical section, to examine the determinants of M&A activity. First, Table 6 gives three different measures of the corporation tax system in each country used. The statutory tax rate is the headline corporation tax rate in the country, including typical local tax rates. The EMTR is the effective marginal tax rate, which measures the impact of the tax on the cost of capital – the required return on investment. The EATR is the effective average tax rate, which broadly measures the proportion of the net present value of an investment taken in tax. The two effective tax rates are based on the methodology set out in Devereux and Griffith (2003), and draw on a number of sources.

These tax rates are averaged across countries to calculate appropriate values for each of the 7 blocs of countries identified in the earlier tables. They are then combined with data from two other sources. First, we use two variables describing the size and multinational reach of the acquiring company, using data from ORBIS, as described above. We also use data describing the target countries (again averaged where appropriate), taken from the World Bank World Development Indicators (WDI) database. Table 7 presents means and standard deviations for each of the following variables for each of the 26 country groups identified above:

- **Subs:** total number of subsidiaries of the acquiring company in 2005
- **Loc:** total number of countries in which the acquiring company owned subsidiaries in 2005
- **EATR:** effective average tax rate in the target country in the year in which the acquisition takes place
- τ **:** statutory corporate tax rate in the target country in the year in which the acquisition takes place
- **Discl:** disclosure index in the target country, which measures the extent to which investors are protected through disclosure of ownership and financial information. This ranges from 0 to 10, with 10 being the maximum disclosure

- **Mkt V:** market value (as a % of GDP) of the domestically incorporated companies listed in the stock exchange of the target country at the end of the year in which the acquisition takes place
- **Start up:** this measures the time required to start a business in the target country, measured as number of calendar days needed to complete the procedures to legally operate a business.
- **Easy B:** this is a ranking of the ease of doing business in the target country. Countries are ranked from 1 to 181, with first place being the best.
- **GDP:** log of real GDP per capita of the target country.

3. Results

Table 8 presents the results of a standard multinomial logit specification of (14) to (16) where the coefficients β_i are not allowed to vary across acquiring companies. That is, we are estimating the impact of alternative variables on the choice of location of the target company for a given acquirer.

We begin in column [1] by including only the EATR in the target country as an explanatory variable. The coefficient is negative and highly significant, indicating that – at least in the absence of controlling for other factors – then tax does play a role in the M&A decision. We investigate the size of this coefficient below. Replacing the EATR with the statutory rate in column [2] indicates that, although the two measures of the tax system are highly correlated, the statutory rate does not play a significant role in M&A decisions.

In columns [3] and [4] we add the two variables relating to the structure of the acquirer: in column [3], the number of subsidiaries which it owned in 2005, and in column [4] the number of countries in which it operated in 2005. Note that variables which describe the acquirer cannot be included on their own in the estimation, since they take the same value for all of the 26 choices. To incorporate such variables, we therefore have to allow their coefficient to vary across the choices. Hence including each one of these adds a further 26 variables to the equation. Because of this, we do not show the results of these individually, but show only the impact of their inclusion on the tax measure. The coefficients on the new variables vary across countries, but it can be

seen in the Table that including these terms has little impact on the estimated effect of the EATR.

In columns [5] to [8], we introduce country-level variables associated with the country of the target company. We have included all the variables listed above in estimation. However, several proved to be insignificant, and we have not included them in Table 8. The variables that are significant, or marginally significant are:

- The disclosure index in the target country
- market value (as a % of GDP) of the domestically incorporated companies listed in the stock exchange
- the time required to start a business in the target country
- log of real GDP per capita of the target country.

Note that the tax variable stays consistently significant, and with approximately the same value when these other variables are included.

Finally, in columns [9] to [11], we restrict the sample size. In column 9, we include only companies that made exactly one acquisition during the period 2006-8, to check that results are not being driven by companies that undertook multiple acquisitions. This has very little effect on the results. In column [10], we restrict the sample to acquiring companies that were already multinationals in 2005. Since this is a subsample, the number of choices relevant to this group is lower than for the whole sample. Keeping the restriction that 20 of the subsample of multinational acquirers choose each target country/group, then the number of choices falls from 26 to 8. This generates a greater change in the results, with the coefficient on the tax variable being estimated less precisely, although the estimated value does not change by very much. In this case, the effect of the disclosure index is estimated to be higher, although again, not very precisely estimated. The same is true of GDP per capita. The rise in standard errors may well reflect the reduction in the sample size and in the number of choices available. In column [11], we therefore reduce the restriction to only 10 multinational acquirers being required to choose each target. This tends to reduce the standard errors again, but leaves the variables still insignificantly different from zero.

In Table 9 we examine the marginal effects of taxation. These are based on the results in column 8, using the full sample. The Table presents a matrix which shows the effect of a marginal change in the tax rate in each target country on the probability of an acquiring company choosing that country, and all the other countries (or groups of countries). For example, looking along the row for Germany, the diagonal shows a value of -22.7. This implies that a 10 percentage point reduction in the German tax rate would increase the probability of acquirers choosing a German target by 2.27 percentage points, *ceteris paribus.* Table 4 indicates that the unconditional probability of choosing Germany is 3.85%. Such a reduction in the tax rate would raise this probability to 6.12%. A change of this magnitude might therefore be considered to have a large effect on acquisitions of German companies. The other elements of the German row show the effect of a change in the German tax rate on the probability of acquirers choosing targets in other countries. By definition, all acquirers have to choose a target in exactly one of the 26 choices. The probability of choosing a non-German target following a reduction in the German tax rate must therefore fall, which explains why these terms are all positive.[14]

Comparing the effects of changing the tax rates in different countries, the marginal effects tend to be lower in most countries compared to Germany. However, a small number – and in particular, the UK, the USA and the OECD as a group – have higher marginal effects.

Finally, in Table 10, we use the mixed logit approach described in Section 2.1. The first column reproduces column [8] of Table 8 for comparison. Column [12] allows the coefficient on the tax variable to be normally distributed across acquiring companies, rather than a single common value as in the standard multinomial logit approach. In this case, all values lie in a single normal distribution. In column [13] we further refine this to allow the mean of the tax effect distribution to depend on whether the parent is a multinational or not. It can be seen that these refinements do not have a significant impact on the estimated coefficients. However, the estimated marginal effects, which are presented in Table 11, are now lower. As before, the same group of countries, the UK, the USA and the OECD, still are estimated to have higher marginal

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[14]This is one of the restrictions imposed by the multinomial logit model. For example, if the tax variable in Germany has a negative effect of a company choosing Germany, the model has the property that this variable will affect all the other choices proportionately in the opposite direction.

effects. But, the magnitudes are now only about 20% of the estimated numbers from the standard multinomial model. Going back to the German example, For example, looking along the row for Germany, the diagonal now shows a value of -5.56. This implies that a 10 percentage point reduction in the German tax rate would increase the probability of acquirers choosing a German target by 0.56 percentage points, *ceteris paribus.* Such a reduction in the tax rate would raise the probability of acquisition of a German company from 3.85% to 4.41% - a rise of 14%. Figure 2 presents the distribution of values of the estimated coefficients across the acquirers, while the mean is presented in the table.[15] It is interesting to note that all the estimated tax effects are negative in this specification. In column [13], it is skewed to the left. However, there is no evidence of a significantly different effect for multinational companies and domestic companies.

4. Conclusions

This paper investigates the impact of corporation taxes on the location of mergers and acquisitions. It contains two novel contributions. First, it explores in the context of two simple models how taxes might be expected to affect the location of such activity. Second, it estimates a model of location choice, in which an acquiring company can choose to acquire a target company in one of 26 locations (where "locations" here includes single countries and groups of countries).

The theoretical framework aims to capture the twin possibilities that an acquisition may arise for efficiency reasons – to produce the same or a greater amount of output at the lowest possible cost; or for strategic reasons, for the acquirer to capture a larger share of the market. These two possibilities lead to several hypotheses about the impact of taxes, summarised in Section 2. It is clear from the analysis there that the tax rate in the host country (of the target company) may have a positive or negative impact on the probability of the acquirer choosing a target in that country. The effect would generally be negative if the acquirer believed that it could generate higher income than the existing owners, which would be subject to the host country tax rate. But if the acquirer believed that it could reduce costs in the target company, then it would also reduce tax allowances. For a given rate of allowances, a higher tax rate would reduce

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[15]The estimated effects are conditional on the data. The method of estimation of these effects uses Bayesian formula. See Train (2009) for further details.

the value of tax allowances these by more, and would therefore have a negative impact on the probability of the acquisition taking place in that country. Further, if the acquirer intended to close down the operations of the target to improve its market share, then the main effect of the host country tax would be to reduce the price which the acquirer needs to pay for the target; in this case as well, a higher tax rate would make an acquisition more likely. Section 2 also considers other cases.

The impact of taxes is therefore an empirical issue. To study this, we analyse individual domestic and cross-border acquisitions between 2006 and 2008 taken from the ZEPHYR database. We combine these data with information on acquiring companies in 2005, before the acquisitions took place, from the ORBIS database, which provides financial and ownership data. We then estimate a location choice model in which the choice of target country depends on the characteristics of the acquirer and characteristics of the country of the target company.

Our results suggest that the host country tax rate generally has a negative effect on the probability of a company in that country being acquired. This is consistent with the results of the empirical literature on the effects of taxation on FDI flows.

References

Barrios, S., H. Huizinga, L. Laeven and G. Nicodème (2008) "International taxation and multinational firm location decisions", *Oxford University Centre for Business Taxation Working Paper* 08/25.

Becker, J. and C. Fuest (2010) "Taxing foreign profits with international mergers and acquisitions", *International Economic Review* 51.1, 171-186.

Bernard, A. and J.B. Jensen (2005) "Firm structure, multinationals, and manufacturing plant deaths", *U.S. Census Bureaus CES Working Paper* 05-18.

Brakman, S., H. Garretsen and C. Van Marrewijk (2006) "Cross-border mergers and acquisitions: the facts as a guide for international economics", *CESifo Working Paper* 1823.

Büttner, T. and M. Ruf (2007) "Tax incentives and the location of FDI: evidence from a panel of German multinationals", *International Tax and Public Finance* 14, 151-164.

Coeurdacier, N., R.A. De Santis and A. Aviat (2009) "Cross-border mergers and acquisitions and European integration", *Economic Policy* 24, 55-106.

De Mooij, R.A. and S. Ederveen (2008) "Corporate tax elasticities: a reader's guide to empirical findings," *Oxford Review of Economic Policy* 24(4), 680-697.

Devereux, M.P. and R. Griffith (1998) "Taxes and the location of production: evidence from a panel of US multinationals", *Journal of Public Economics* 68.3, 335-367.

Devereux, M.P. and R. Griffith (2003) "Evaluating tax policy for location decisions", *International Tax and Public Finance* 10, 107-126,

Devereux, M.P. and G. Maffini (2007) **"**The Impact of Taxation on the Location of Capital, Firms and Profit: a Survey of Empirical Evidence", *Oxford University Centre for Business Taxation Working Paper* 07/02.

Di Giovanni, J. (2005) "What drives capital flows? The case of cross-border M&A activity and financial deepening", *Journal of International Economics* 65, 127,149.

Ferrett, B. (2005) "Greenfield investment versus acquisition: alternative models for foreign expansion", *Centre for Research on Globalisation and Economic Policy Research Paper* 2005/39.

Huizinga, H.P. and J. Voget (2009) "International taxation and the direction and volume of cross-border M&As", *Journal of Finance* 64.3, 1217-1249.

Markusen, J.R. (2002) *Multinational Firms and the Theory of International Trade*, Cambridge: MIT Press.

Neary, P. (2007) "Cross-border mergers and instruments of comparative advantage", *Review of Economic Studies* 74, 1229-1257.

Neary, P. (2009) "Trade costs and foreign direct investment", *International Review of Economics and Finance* 18, 207-218.

Nocke, V. and S. Yeaple (2007) "Cross-border mergers and acquisitions *vs.* greenfield foreign direct investment: the role of firm heterogeneity", *Journal of International Economics* 72, 336-365.

NLOGIT (2007) Version 4, Econometric Software, Inc., New York.

Norbäck, P-J. and L. Persson (2007) "Investment liberalization – why a restrictive cross-border merge policy can be counterproductive", *Journal of International Economics* 72, 366-380.

Norbäck, P-J., L. Persson and J. Vlachos (20009) "Cross-border acquisitions and taxes: efficiency and tax revenues", *Canadian Journal of Economics* 42.4, 1473-1500.

Seth, A., K.P. Song and R. R. Pettit (2002) "Value Creation and Destruction in Cross-Border Acquisitions: An Empirical Analysis of Foreign Acquisitions of U.S. Firms", *Strategic Management Journal* 23, 10, 921-940.

Train, K.E. (2009) Discrete Choice Methods with simulation, 2nd edition, Cambridge: Cambridge University Press.

Table 1 Expanding Parent Companies

	Firms		Observations	
Total	2,833		73,658	
Multinational	1,227	*43.31%*	31,902	*43.31%*
Domestic	1,169	*41.26%*	30,394	*41.26%*
Standalone	437	*15.43%*	11,362	*15.43%*
Expanding only in one country	2,244	*79.21%*	58,344	*79.21%*
Expanding in more than one country	589	*20.79%*	15,314	*20.79%*
Expanding only in one year	2,273	*80.23%*	59,098	*80.23%*
Expanding in two years	434	*15.32%*	11,284	*15.32%*
Expanding in three years	126	*4.45%*	3,276	*4.45%*

The sample is made of 2,833 companies expanding their structure at least once between the end of 2005 and the end of 2008. The distribution between Multinational, Domestic and Standalone is given as at before the any expansion was made. A Parent is defined "standalone" when it does not own any subsidiaries; a "domestic" when it only owns subsidiaries recorded in its same country; and a "multinational" when it owns at least one subsidiary recorded in a country different from its own.

Table 2- Geographic distribution of parent firms

	(1)	(2)
	53	41
	23	17
	1	1
	66	51
	19	14
	17	14
	1	1
	94	83
	5	4
	8	6
	3	3
	7	6
	1	1
	64	48
	1	1
	5	5
	72	49
	208	145
	134	97
	25	20
	6	5
	3	1
	8	6
	59	46
	2	2
	19	19
	10	9
	79	64
	19	19
	2	1
	47	45
	4	4
	2	2
	3	1
	2	1
	10	7
	114	76
	3	3

Table 2- Geographic distribution of parent - Continued

	(1)	(2)
	53	43
	1	1
	1	1
	3	2
	26	25
	16	15
	2	2
	124	112
	15	13
	1	0
	3	3
	19	14
	125	101
	198	144
	54	32
	1	1
	4	3
	6	6
	689	550
	267	236
	26	*22*
	2,833	2,244

s extracted from the BvD-id code that uniquely identifies each parent company. Column (1) shows the geographic distribution of the entire sample; c
pand in only one of the three years; column (4) only those that were already classified as multinational before their first expansion. In "other" we co

Table 3 Parents' choice of expanding in multiple countries.

No. Location Countries	(1)	(2)	(3)
1 country	2,244	2,116	782
2 countries	362	136	252
3 countries	107	11	85
4 countries	55	3	44
5 countries	29	3	29
6 countries	12	1	11
7 countries	6	1	6
8 countries	6	0	6
9 countries	3	1	3
10 countries	2	0	2
11 countries	4	1	4
12 countries	2	0	2
18 countries	1	0	1
Total	2,833	2,273	1,227

The "No. Location Countries" indicates the number of different countries where the parent companies has expanded between 2006 and 2008. The table shows how many parent companies expand in how many countries simultaneously. In column (1) the overall sample was used; in column (2) we condition on those companies that expand either only in 2006, or only in 2007, or only in 2008; in column (3) we condition on only those parents that were already classified as multinational at the end of 2005. Note: if a parent is listed as expanding in more than one country, this does not necessarily mean that it undertook only multi-country expansions. It might be that the company made two single-country expansions. However, the collapse of the time dimension of the data imposes us to list this company has making a multi-country expansion.

Table 4 Expansion location choice made by the parent companies.

Location choice	(1)		(2)		(3)		(4)	
OECD*	498	*17.58%*	92	*4.10%*	209	*9.19%*	345	*28.12%*
World*	170	*6.00%*	-	-	34	*1.50%*	137	*11.17%*
LatinAmerica*	41	*1.45%*	35	*1.56%*	35	*1.54%*	15	*1.22%*
Europe & Central Asia*	39	*1.38%*	33	*1.47%*	35	*1.54%*	25	*2.04%*
Asia*	35	*1.24%*	34	*1.52%*	34	*1.50%*	14	*1.14%*
nonOECD*	30	*1.06%*	30	*1.34%*	29	*1.28%*	12	*0.98%*
Africa*	16	*0.56%*	16	*0.71%*	15	*0.66%*	5	*0.41%*
UnitedKingdom	548	*19.34%*	548	*24.42%*	502	*22.09%*	136	*11.08%*
UnitedStates	353	*12.46%*	353	*15.73%*	326	*14.34%*	125	*10.19%*
France	135	*4.77%*	135	*6.02%*	121	*5.32%*	51	*4.16%*
Sweden	131	*4.62%*	131	*5.84%*	128	*5.63%*	56	*4.56%*
Russia	126	*4.45%*	126	*5.61%*	115	*5.06%*	14	*1.14%*
Spain	110	*3.88%*	110	*4.90%*	108	*4.75%*	38	*3.10%*
Germany	109	*3.85%*	109	*4.86%*	107	*4.71%*	61	*4.97%*
Canada	62	*2.19%*	62	*2.76%*	58	*2.55%*	19	*1.55%*
Italy	62	*2.19%*	62	*2.76%*	58	*2.55%*	31	*2.53%*
Netherland	55	*1.94%*	55	*2.45%*	54	*2.38%*	31	*2.53%*
Belgium	53	*1.87%*	53	*2.36%*	49	*2.16%*	28	*2.28%*
Finland	48	*1.69%*	48	*2.14%*	47	*2.07%*	16	*1.30%*
Norway	48	*1.69%*	48	*2.14%*	48	*2.11%*	15	*1.22%*
Korea	40	*1.41%*	40	*1.78%*	39	*1.72%*	7	*0.57%*
Denmark	34	*1.20%*	34	*1.52%*	34	*1.50%*	10	*0.81%*
Australia	24	*0.85%*	24	*1.07%*	23	*1.01%*	8	*0.65%*
Poland	24	*0.85%*	24	*1.07%*	24	*1.06%*	4	*0.33%*
Brazil	21	*0.74%*	21	*0.94%*	20	*0.88%*	12	*0.98%*
Ireland	21	*0.74%*	21	*0.94%*	21	*0.92%*	12	*0.98%*
Total	2,833		2,244		2,273		1,227	

The location choices are defined as follows: for each parent we found the list of countries were all expansions completed between 2005 and 2008 were located. All countries with at least 20 parents locating there only were chosen as single-country locations: these are the 19 countries listed in the table. All remaining expansions were classified as located in one of the multi-country locations (here marked with a "*"). The multi-country locations are defined as in the WDI, World Bank. A parent expands in one of the multi-country location if it expands in one or more countries that are listed as part of it. Column (1) reports the distribution of the total sample; column (2) only looks at the parents expanding in one country only; column (3) looks at those expanding in only one year; and column (4) only at those already classified as multinational before the first expansion.

Table 5
Time of completion of the expansions made by the observed parent companies.

Location Choice	2006	2007	2008	'06 & '07	'06 & '08	'07 & '08	'06, '07 & '08
OECD*	57	79	73	85	60	84	60
World*	12	16	6	31	22	24	59
LatinAmerica*	12	16	7	2	0	2	2
Europe & Cent. Asia*	13	15	7	0	2	2	0
Asia*	2	18	14	0	0	1	0
nonOECD*	10	10	9	0	0	1	0
Africa*	4	4	7	0	1	0	0
UnitedKingdom	146	209	147	15	23	6	2
UnitedStates	120	140	66	11	10	5	1
France	24	55	42	2	8	4	0
Sweden	30	59	39	0	2	1	0
Russia	35	37	43	1	3	5	2
Spain	30	36	42	1	1	0	0
Germany	29	45	33	0	2	0	0
Canada	11	24	23	2	1	1	0
Italy	20	19	19	0	3	1	0
Netherland	20	19	15	1	0	0	0
Belgium	12	16	21	1	1	2	0
Finland	25	13	9	0	1	0	0
Norway	13	20	15	0	0	0	0
Korea	3	11	25	1	0	0	0
Denmark	8	14	12	0	0	0	0
Australia	3	12	8	0	0	1	0
Poland	7	6	11	0	0	0	0
Brazil	7	7	6	0	1	0	0
Ireland	4	8	9	0	0	0	0
Total	657	908	708	153	141	140	126

The table shows the distribution over the different location choices of the expansions completed in different years. The sample used is the total sample of 2,833 parent companies. Note: because the time dimension is collapsed, in all those cases of a multi-year expansion we averaged the location-specific variables over the years.

Table 6 Corporate tax rates in the parents' countries

County	EMTR	EATR	Statutory
Australia	0.16	0.27	0.30
Austria	0.10	0.22	0.25
Bahrain	-	-	-
Belgium	0.07	0.28	0.34
Bermuda	-	-	-
Brazil	0.20	0.31	0.34
Bulgaria	0.03	0.12	0.15
Canada	0.17	0.30	0.34
Cayman Islands	-	-	-
Chile	0.13	0.16	0.17
China	0.16	0.29	0.33
Colombia	-	-	-
Cyprus	0.05	0.09	0.10
Denmark	0.12	0.25	0.28
Egypt	-	-	-
Estonia	0.38	0.30	0.24
Finland	0.11	0.23	0.26
France	0.10	0.28	0.34
Germany	0.16	0.31	0.36
Greece	0.08	0.26	0.32
Hong Kong	0.03	0.14	0.18
Hungary	-	-	-
Iceland	0.05	0.15	0.18
India	0.14	0.31	0.37
Indonesia	0.19	0.28	0.30
Ireland	0.05	0.11	0.13
Israel	0.15	0.30	0.34
Italy	0.12	0.31	0.37
Japan	0.19	0.36	0.42
Kazakhstan	-	-	-
Korea	-0.01	0.19	0.28
Latvia	0.02	0.12	0.15
Lithuania	0.01	0.12	0.15
Luxembourg	0.06	0.24	0.30
Malaysia	0.36	0.32	0.28
Mexico	0.03	0.26	0.32
Netherlands	0.11	0.27	0.32
New Zealand	0.20	0.30	0.33
Norway	0.16	0.26	0.28
Pakistan	0.31	0.38	0.39
Papua New Guinea	-	-	-
Peru	0.18	0.27	0.30

Table 6: Corporate tax - Continued

County	EMTR	EATR	Statutory
Portugal	0.06	0.23	0.28
Romania	0.05	0.14	0.16
Russia	0.07	0.20	0.24
Singapore	0.04	0.16	0.20
Slovak Republic	0.06	0.16	0.19
Slovenia	-0.12	0.17	0.25
South Africa	-	-	-
Spain	0.15	0.30	0.35
Sweden	0.09	0.24	0.28
Switzerland	0.05	0.18	0.22
Thailand	0.07	0.25	0.30
Turkey	-0.15	0.21	0.30
Ukraine	0.09	0.21	0.25
United Kingdom	0.14	0.27	0.30
United States	0.14	0.33	0.39

The tax rates are as at the end of 2005, which -we assume- is the year
when the decision regarding the future ownership expansion was taken.
The category "Other" includes the 26 parent for which we could not
extract the country of registration from BvD-id code.

Table 7 Descriptive statistics of variables used to estimate the acquisition choice

	Subs [1]	Loc. [2]	EATR [3]	τ [4]	Discl. [5]	Mkt V [6]	Start up [7]	Easy B. [8]	GDP [9]	obs
Tot Sample	12.13 *(31.80)*	2.80 *(04.17)*	0.23 *(00.07)*	0.27 *(00.09)*	6.53 *(01.68)*	88.58 *(40.64)*	26.60 *(30.16)*	34.26 *(36.47)*	9.51 *(01.06)*	2,833
OECD*	18.48 *(33.96)*	4.33 *(04.95)*	0.21 *(00.01)*	0.25 *(00.01)*	5.91 *(00.01)*	101.23 *(20.24)*	15.25 *(01.23)*	- *-*	10.30 *(00.01)*	498
World*	51.24 *(88.10)*	8.38 *(08.00)*	0.23 *(00.00)*	0.27 *(00.00)*	4.98 *(00.03)*	100.16 *(14.10)*	42.60 *(01.75)*	- *-*	8.69 *(00.01)*	170
Latin Am.*	3.24 *(05.52)*	1.51 *(01.47)*	0.23 *(00.00)*	0.26 *(00.00)*	3.99 *(00.02)*	55.31 *(14.46)*	73.06 *(02.36)*	- *-*	8.43 *(00.03)*	41
Eu & C.A.*	15.10 *(35.01)*	3.67 *(04.47)*	0.16 *(00.01)*	0.18 *(00.01)*	5.41 *(00.34)*	65.11 *(11.52)*	27.06 *(02.46)*	- *-*	7.99 *(00.04)*	39
Asia*	4.51 *(10.00)*	1.91 *(04.42)*	0.28 *(00.00)*	0.31 *(00.00)*	4.42 *(00.02)*	106.66 *(46.67)*	39.34 *(00.82)*	- *-*	7.06 *(00.04)*	35
nonOECD*	2.20 *(03.16)*	1.43 *(01.57)*	0.13 *(00.01)*	0.15 *(00.01)*	5.90 *(00.07)*	155.29 *(48.03)*	35.52 *(04.99)*	- *-*	9.77 *(00.02)*	30
Africa*	4.19 *(08.26)*	2.06 *(02.59)*	0.23 *(00.01)*	0.28 *(00.01)*	5.03 *(00.02)*	58.01 *(26.23)*	41.73 *(05.98)*	- *-*	7.11 *(00.03)*	16
UK	8.22 *(13.79)*	1.66 *(02.21)*	0.26 *(00.01)*	0.29 *(00.01)*	10.00 *(00.00)*	124.38 *(34.69)*	13.00 *(00.00)*	6.00 *(00.00)*	10.25 *(00.01)*	548
USA	5.93 *(13.91)*	1.99 *(02.59)*	0.33 *(00.00)*	0.39 *(00.00)*	7.00 *(00.00)*	133.06 *(25.09)*	6.00 *(00.00)*	4.00 *(00.00)*	10.55 *(00.01)*	353
France	10.42 *(20.83)*	2.19 *(03.11)*	0.28 *(00.00)*	0.333 *(00.00)*	10.00 *(00.00)*	87.58 *(24.99)*	7.00 *(00.00)*	31.00 *(00.00)*	10.10 *(00.01)*	135
Sweden	8.18 *(15.27)*	2.39 *(02.91)*	0.24 *(00.00)*	0.28 *(00.00)*	6.00 *(00.00)*	112.02 *(39.55)*	15.00 *(00.00)*	17.00 *(00.00)*	10.38 *(00.01)*	131
Russia	3.60 *(10.09)*	0.92 *(01.45)*	- *-*	- *-*	6.00 *(00.00)*	100.61 *(14.27)*	30.00 *(00.00)*	118.00 *(00.00)*	7.96 *(00.07)*	126
Spain	10.29 *(21.59)*	2.33 *(03.74)*	0.28 *(00.02)*	0.32 *(00.02)*	5.00 *(00.00)*	94.65 *(29.18)*	47.00 *(00.00)*	51.00 *(00.00)*	9.70 *(00.01)*	110
Germany	8.80 *(16.18)*	3.33 *(04.39)*	0.29 *(00.02)*	0.34 *(00.03)*	5.00 *(00.00)*	51.14 *(14.27)*	19.65 *(02.66)*	27.00 *(00.00)*	10.13 *(00.02)*	109
Canada	4.31 *(22.76)*	1.47 *(03.77)*	0.30 *(00.00)*	0.3368306 *(00.01)*	8.00 *(00.00)*	122.23 *(41.47)*	3.77 *(00.97)*	8.00 *(00.00)*	10.17 *(00.01)*	62
Italy	12.19 *(32.18)*	2.90 *(04.04)*	0.28 *(00.05)*	0.35 *(00.03)*	7.00 *(00.00)*	42.92 *(14.12)*	11.98 *(01.38)*	74.00 *(00.00)*	9.89 *(00.01)*	62
Netherlands	5.76 *(07.42)*	2.31 *(02.40)*	0.23 *(00.02)*	0.27 *(00.02)*	4.00 *(00.00)*	99.93 *(34.09)*	10.00 *(00.00)*	28.00 *(00.00)*	10.18 *(00.02)*	55
Belgium	10.72 *(17.95)*	2.89 *(03.50)*	0.28 *(00.00)*	0.34 *(00.00)*	8.00 *(00.00)*	66.93 *(28.54)*	9.64 *(00.73)*	20.00 *(00.00)*	10.12 *(00.01)*	53
Finland	6.4375 *(10.92)*	2.10 *(02.78)*	0.23 *(00.00)*	0.26 *(00.00)*	6.00 *(00.00)*	119.43 *(32.66)*	14.00 *(00.00)*	14.00 *(00.00)*	10.24 *(00.20)*	48
Norway	5.90 *(11.28)*	1.79 *(01.87)*	0.26 *(00.00)*	0.28 *(00.00)*	7.00 *(00.00)*	69.67 *(28.62)*	7.00 *(00.00)*	10.00 *(00.00)*	10.65 *(00.01)*	48
Korea	1.15 *(01.72)*	0.73 *(01.06)*	0.07 *(00.09)*	0.10 *(00.13)*	7.00 *(00.00)*	71.74 *(24.67)*	17.00 *(00.00)*	23.00 *(00.00)*	9.63 *(00.02)*	40
Denmark	10.29 *(21.91)*	2.71 *(05.10)*	0.22 *(00.01)*	0.26 *(00.01)*	7.00 *(00.00)*	69.94 *(23.76)*	6.00 *(00.00)*	5.00 *(00.00)*	10.39 *(00.01)*	34
Australia	2.58 *(05.05)*	1.21 *(01.38)*	0.27 *(00.00)*	0.30 *(00.00)*	8.00 *(00.00)*	124.85 *(43.12)*	2.00 *(00.00)*	9.00 *(00.00)*	10.09 *(00.01)*	24
Poland	2.96 *(04.03)*	1.17 *(01.76)*	0.17 *(00.00)*	0.19 *(00.00)*	7.00 *(00.00)*	32.77 *(14.83)*	31.00 *(00.00)*	72.00 *(00.00)*	8.69 *(00.05)*	24

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Table 8: Model Estimates (std errors)

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Effective Av Tax Rate	-5.898*** (1.366)		-5.026*** (1.364)	-5.428*** (1.377)	-4.929*** (1.414)	-5.444*** (1.448)	-5.635*** (1.385)	-5.562*** (1.390)	-5.553*** (1.378)	-5.893 (4.318)	-2.490 (3.516)
Statutory Tax Rate		1.112 (2.253)									
Business extent of disclosure					-0.729 (0.486)	-0.899* (0.498)	-0.834* (0.489)	-0.834* (0.491)	-0.930* (0.516)	-4.703* (2.414)	-1.187* (0.720)
Mkt cap val of dom co: % of GDP					0.003 (0.002)	0.001 (0.002)					
Days required to start a business					-0.006 (0.012)	-0.007 (0.012)					
Log GDP per capita (constant 2000 US$)						2.924* (1.678)	3.220** (1.500)	3.302** (1.498)	2.844* (1.469)	8.169 (11.01)	0.882 (3.41)
Maximised Log Lik	-7651	-7660	-6580	-7409	-7407	-7405	-7406	-7331	-5854	-1516	-2931
No. of parents	2833	2833		2833	2833	2833	2833	2833	2228	899	1203
No. of alternatives	26	26	26	26	26	26	26	26	24	8	22

Notes:
(i) All models include country/choice specific intercepts.
(ii) The included Company specific choice invariant variables are as follows: [1] nothing; [2] nothing; [3] number of subsidiaries owned in base year 2005; [4]-[7] number of countries where the subsidiaries were located in 2005 and [8] additionally has a binary indicator for whether the company was not a multi-national parent in 2005. This is our base case used for columns [9]-[11] robustness checks.
(iii)Sample size in [3] is smaller due to some missing values in the number of subsidiaries variable.
(iv)[9] restricts [8] to parents who only made one acquisition.
(v) [10] restricts [8] to parents who are multi-nationals in 2005. The set of alternatives are restricted to those where at least 20 companies made the choice.
(vi)[11] similar to [10] but now the set of alternatives are restricted to those where at least 10 companies made the choice.

Table 9: Estimated Marginal Effects for EATR: own effects (std errors) [col [8] from Table 8]

	Afr	Asia	Aus	Belg	Braz	Can	Den	Eur + CAm	Fin	Fran	Germ	Irel	Ital	Korea	Latin Am	Neth	Nor	OECD	Pol	Rus	Spa	Swed	UK	US	Wrld	Non OECD
Afr	3.46	0.05	0.02	0.07	0.03	0.07	0.04	0.05	0.07	0.19	0.15	0.03	0.09	0.01	0.04	0.07	0.06	0.61	0.03	0.10	0.15	0.18	0.70	0.48	0.16	0.03
Asia	0.05	7.27	0.03	0.15	0.06	0.15	0.10	0.10	0.14	0.40	0.31	0.06	0.18	0.02	0.09	0.15	0.13	1.29	0.05	0.20	0.32	0.39	1.49	1.02	0.33	0.06
Aus	0.02	0.03	2.48	0.05	0.02	0.05	0.03	0.04	0.05	0.13	0.11	0.02	0.06	0.01	0.03	0.05	0.05	0.43	0.02	0.07	0.11	0.13	0.50	0.34	0.11	0.02
Belg	0.07	0.15	0.05	11.4	0.10	0.24	0.15	0.17	0.22	0.63	0.50	0.09	0.29	0.03	0.15	0.23	0.21	2.04	0.08	0.32	0.51	0.61	2.36	1.61	0.52	0.09
Braz	0.03	0.06	0.02	0.10	4.51	0.09	0.06	0.06	0.09	0.24	0.19	0.04	0.11	0.01	0.06	0.09	0.08	0.79	0.03	0.13	0.20	0.24	0.92	0.63	0.20	0.03
Can	0.07	0.15	0.05	0.24	0.09	11.3	0.15	0.16	0.22	0.62	0.49	0.09	0.28	0.03	0.15	0.23	0.21	2.02	0.08	0.32	0.51	0.61	2.33	1.60	0.51	0.09
Den	0.04	0.10	0.03	0.15	0.06	0.15	7.08	0.10	0.14	0.39	0.31	0.06	0.18	0.02	0.09	0.14	0.13	1.25	0.05	0.20	0.31	0.38	1.45	0.99	0.32	0.05
Eur + CAm	0.05	0.10	0.04	0.17	0.06	0.16	0.10	7.79	0.15	0.42	0.34	0.06	0.19	0.02	0.10	0.16	0.14	1.38	0.06	0.22	0.35	0.41	1.60	1.09	0.35	0.06
Fin	0.07	0.14	0.05	0.22	0.09	0.22	0.14	0.15	10.3	0.57	0.45	0.08	0.26	0.02	0.14	0.21	0.19	1.84	0.08	0.29	0.46	0.55	2.13	1.46	0.47	0.08
Fran	0.19	0.40	0.13	0.63	0.24	0.62	0.39	0.42	0.57	28.2	1.28	0.24	0.73	0.07	0.38	0.59	0.55	5.22	0.22	0.82	1.31	1.57	6.04	4.13	1.33	0.22
Germ	0.15	0.31	0.11	0.50	0.19	0.49	0.31	0.34	0.45	1.28	22.7	0.19	0.58	0.05	0.31	0.47	0.43	4.15	0.17	0.66	1.04	1.25	4.80	3.28	1.06	0.18
Irel	0.03	0.06	0.02	0.09	0.04	0.09	0.06	0.06	0.08	0.24	0.19	4.37	0.11	0.01	0.06	0.09	0.08	0.77	0.03	0.12	0.19	0.23	0.89	0.61	0.20	0.03
Ital	0.09	0.18	0.06	0.29	0.11	0.28	0.18	0.19	0.26	0.73	0.58	0.11	13.3	0.03	0.18	0.27	0.25	2.38	0.10	0.38	0.60	0.72	2.76	1.89	0.61	0.10
Korea	0.01	0.02	0.01	0.03	0.01	0.03	0.02	0.02	0.02	0.07	0.05	0.01	0.03	1.26	0.02	0.02	0.02	0.22	0.01	0.03	0.06	0.07	0.25	0.17	0.06	0.01
Latin Am	0.04	0.09	0.03	0.15	0.06	0.15	0.09	0.10	0.14	0.38	0.31	0.06	0.18	0.02	7.07	0.14	0.13	1.25	0.05	0.20	0.31	0.38	1.45	0.99	0.32	0.05
Neth	0.07	0.15	0.05	0.23	0.09	0.23	0.14	0.16	0.21	0.59	0.47	0.09	0.27	0.02	0.14	10.7	0.20	1.92	0.08	0.30	0.48	0.58	2.22	1.52	0.49	0.08
Nor	0.06	0.13	0.05	0.21	0.08	0.21	0.13	0.14	0.19	0.55	0.43	0.08	0.25	0.02	0.13	0.20	9.99	1.78	0.07	0.28	0.45	0.53	2.06	1.41	0.45	0.08
OECD	0.61	1.29	0.43	2.04	0.79	2.02	1.25	1.38	1.84	5.22	4.15	0.77	2.38	0.22	1.25	1.92	1.78	80.1	0.70	2.68	4.26	5.10	19.6	13.4	4.33	0.73
Pol	0.03	0.05	0.02	0.08	0.03	0.08	0.05	0.06	0.08	0.22	0.17	0.03	0.10	0.01	0.05	0.08	0.07	0.70	3.99	0.11	0.18	0.21	0.81	0.55	0.18	0.03
Rus	0.10	0.20	0.07	0.32	0.13	0.32	0.20	0.22	0.29	0.82	0.66	0.12	0.38	0.03	0.20	0.30	0.28	2.68	0.11	14.9	0.67	0.80	3.10	2.12	0.68	0.12
Spa	0.15	0.32	0.11	0.51	0.20	0.51	0.31	0.35	0.46	1.31	1.04	0.19	0.60	0.06	0.31	0.48	0.45	4.26	0.18	0.67	23.3	1.28	4.93	3.37	1.09	0.18
Swed	0.18	0.39	0.13	0.61	0.24	0.61	0.38	0.41	0.55	1.57	1.25	0.23	0.72	0.07	0.38	0.58	0.53	5.10	0.21	0.80	1.28	27.6	5.90	4.03	1.30	0.22
UK	0.70	1.49	0.50	2.36	0.92	2.33	1.45	1.60	2.13	6.04	4.80	0.89	2.76	0.25	1.45	2.22	2.06	19.6	0.81	3.10	4.93	5.90	89.6	15.5	5.00	0.85
US	0.48	1.02	0.34	1.61	0.63	1.60	0.99	1.09	1.46	4.13	3.28	0.61	1.89	0.17	0.99	1.52	1.41	13.4	0.55	2.12	3.37	4.03	15.5	66.2	3.42	0.58
World	0.16	0.33	0.11	0.52	0.20	0.51	0.32	0.35	0.47	1.33	1.06	0.20	0.61	0.06	0.32	0.49	0.45	4.33	0.18	0.68	1.09	1.30	5.00	3.42	23.6	0.19
Non OECD	0.03	0.06	0.02	0.09	0.03	0.09	0.05	0.06	0.08	0.22	0.18	0.03	0.10	0.01	0.05	0.08	0.08	0.73	0.03	0.12	0.18	0.22	0.85	0.58	0.19	4.15

The column header spanning all data columns reads: d[Probability(Choice=particular country)|change in EATR of the row country]

Notes: (i) The figures in **bold** (*italics*) indicate significance at 5% or less (5-10%).

Table 10: Model Estimates (std errors)

Variable	[8]	[12]	[13]
Effective Av Tax Rate (EATR)	-5.562***	-5.554***	-4.793***
	(1.390)	(1.400)	(3.859)
Business extent of disclosure	-0.834*	-0.834*	-0.819*
	(0.491)	(0.491)	(0.491)
Log GDP per capita (constant 2000 US$)	3.302**	3.303***	3.334***
	(1.498)	(1.499)	(1.500)
Heterogeneity in the Mean of EATR			
2005: no. of countries where parent was located			-0.499
			(0.770)
2005: non-multinational			-0.103
			(3.932)
Maximised Log Lik	-7331	-7331	-7331
No. of parents	2833	2833	2833
No. of alternatives	26	26	26

Notes:

(i) See notes to Table1.

(ii) [12] allows the effect of EATR to be randomly distributed (Normal distribution) over the companies; In addition to [12], [13] allows the mean of the effect of EATR to be a function of whether the parent is a multi-national or not.

Table 11: Estimated Marginal Effects for EATR: Col [12] from Table 10

d[Probability(Choice=particular country)|change in EATR of the row country]

|		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
AFRICA	1	-0.71	0.01	0.01	0.01	0.00	0.02	0.01	0.01	0.01	0.03	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.11	0.01	0.04	0.03	0.03	0.16	0.09	0.03
ASIA	2	0.19	-1.76	0.02	0.03	0.01	0.04	0.02	0.02	0.03	0.09	0.07	0.01	0.04	0.03	0.03	0.04	0.02	0.03	0.30	0.02	0.09	0.07	0.08	0.36	0.22	0.08
AUSTRALIA	3	0.35	0.02	-1.18	0.02	0.01	0.03	0.01	0.02	0.02	0.06	0.04	0.01	0.02	0.02	0.02	0.03	0.02	0.02	0.18	0.01	0.07	0.05	0.06	0.26	0.15	0.04
BELGIUM	4	0.27	0.03	0.02	-2.65	0.02	0.06	0.03	0.04	0.05	0.13	0.11	0.02	0.06	0.03	0.04	0.06	0.03	0.04	0.53	0.02	0.12	0.10	0.13	0.49	0.32	0.17
BRAZIL	5	0.55	0.01	0.01	0.02	-1.16	0.02	0.01	0.02	0.02	0.05	0.05	0.01	0.03	0.01	0.02	0.03	0.01	0.02	0.24	0.01	0.05	0.04	0.05	0.22	0.14	0.08
CANADA	6	0.22	0.04	0.03	0.06	0.02	-3.28	0.04	0.04	0.06	0.17	0.12	0.03	0.07	0.06	0.05	0.07	0.04	0.06	0.50	0.03	0.19	0.13	0.16	0.73	0.43	0.12
DENMARK	7	0.55	0.02	0.01	0.03	0.01	0.03	-1.44	0.02	0.03	0.07	0.05	0.01	0.03	0.02	0.02	0.03	0.02	0.03	0.23	0.01	0.09	0.06	0.07	0.32	0.18	0.09
EUROPECA	8	0.21	0.01	0.01	0.02	0.01	0.02	0.01	-1.17	0.02	0.05	0.05	0.01	0.03	0.01	0.02	0.03	0.01	0.02	0.26	0.01	0.04	0.04	0.06	0.20	0.13	0.09
FINLAND	9	0.30	0.03	0.02	0.04	0.01	0.05	0.03	0.03	-2.04	0.10	0.07	0.02	0.04	0.03	0.03	0.04	0.02	0.04	0.33	0.02	0.12	0.08	0.10	0.46	0.26	0.10
FRANCE	10	0.57	0.09	0.06	0.13	0.05	0.16	0.09	0.10	0.12	-6.62	0.25	0.05	0.15	0.10	0.11	0.14	0.08	0.12	1.16	0.06	0.37	0.27	0.33	1.43	0.86	0.34
GERMANY	11	1.50	0.07	0.04	0.11	0.05	0.12	0.07	0.09	0.09	0.26	-5.56	0.05	0.13	0.07	0.08	0.12	0.06	0.09	1.18	0.04	0.23	0.21	0.27	1.02	0.67	0.40
IRELAND	12	0.38	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.02	0.02	-0.46	0.01	0.01	0.01	0.01	0.01	0.01	0.09	0.00	0.02	0.02	0.02	0.09	0.05	0.03
ITALY	13	0.23	0.04	0.03	0.06	0.02	0.06	0.04	0.05	0.05	0.15	0.12	0.03	-3.07	0.04	0.05	0.06	0.03	0.05	0.60	0.03	0.14	0.12	0.15	0.59	0.37	0.19
KOREA	14	0.27	0.01	0.01	0.01	0.00	0.02	0.01	0.01	0.01	0.03	0.02	0.01	0.01	-0.62	0.01	0.01	0.01	0.01	0.08	0.01	0.04	0.02	0.03	0.15	0.08	0.02
LATINAMERICA	15	0.42	0.02	0.02	0.03	0.01	0.04	0.02	0.02	0.03	0.09	0.06	0.01	0.04	0.03	-1.77	0.04	0.02	0.03	0.29	0.02	0.10	0.07	0.09	0.38	0.22	0.07
NETHERLANDS	16	0.37	0.03	0.02	0.05	0.02	0.05	0.02	0.04	0.04	0.11	0.09	0.02	0.05	0.03	0.04	-2.29	0.03	0.04	0.46	0.02	0.10	0.08	0.11	0.43	0.28	0.12
NONOECD	17	0.55	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.04	0.03	0.01	0.02	0.02	0.01	0.02	-0.81	0.01	0.13	0.01	0.05	0.03	0.04	0.18	0.10	0.03
NORWAY	18	0.49	0.03	0.02	0.04	0.02	0.05	0.03	0.03	0.04	0.11	0.08	0.02	0.05	0.04	0.04	0.04	0.03	-2.25	0.35	0.02	0.13	0.09	0.11	0.60	0.29	0.09
OECD	19	0.50	0.23	0.14	0.40	0.16	0.36	0.21	0.36	0.31	0.88	0.85	0.18	0.46	0.20	0.26	0.43	0.21	0.29	-15.45	0.13	0.66	0.69	0.93	3.08	2.15	1.78
POLAND	20	2.50	0.01	0.01	0.01	0.00	0.02	0.01	0.01	0.02	0.04	0.03	0.01	0.02	0.02	0.01	0.01	0.01	0.02	0.10	-0.79	0.06	0.03	0.04	0.21	0.10	0.02
RUSSIA	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SPAIN	22	1.81	0.07	0.05	0.10	0.04	0.13	0.07	0.08	0.10	0.27	0.21	0.04	0.12	0.09	0.08	0.11	0.06	0.10	0.93	0.05	0.31	-5.48	0.27	1.21	0.70	0.29
SWEDEN	23	1.02	0.07	0.05	0.11	0.04	0.13	0.07	0.09	0.10	0.28	0.22	0.05	0.13	0.08	0.09	0.12	0.07	0.10	1.04	0.05	0.30	0.22	-5.61	1.23	0.71	0.31
UK	24	0.35	0.34	0.24	0.46	0.17	0.63	0.35	0.33	0.49	1.31	0.90	0.19	0.54	0.46	0.41	0.48	0.31	0.49	3.81	0.28	1.65	1.08	1.26	-20.66	3.39	1.02
US	25	1.71	0.26	0.19	0.38	0.15	0.48	0.26	0.28	0.37	1.02	0.76	0.16	0.44	0.32	0.32	0.41	0.24	0.37	3.36	0.20	1.10	0.82	0.99	4.34	-18.20	0.93
WORLD	26	3.04	0.07	0.04	0.14	0.06	0.09	0.09	0.14	0.10	0.28	0.32	0.06	0.16	0.05	0.07	0.13	0.05	0.09	1.96	0.03	0.16	0.24	0.30	0.92	0.65	-6.20

See Notes to Table 9

Figure 1. Percentage of world FDI accounted for by M&A
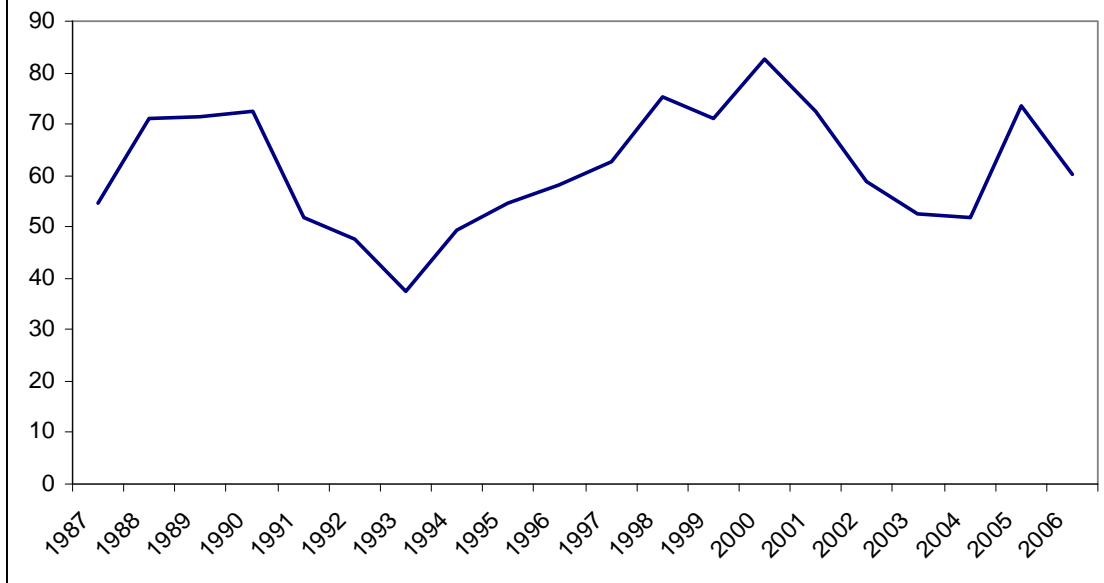
Figure 2 Kernel Density Plot of the Tax coefficients from the Mixed Logit Model

Column 12 from Table 12 Estimates

Kernel density estimate for   BLEATR1
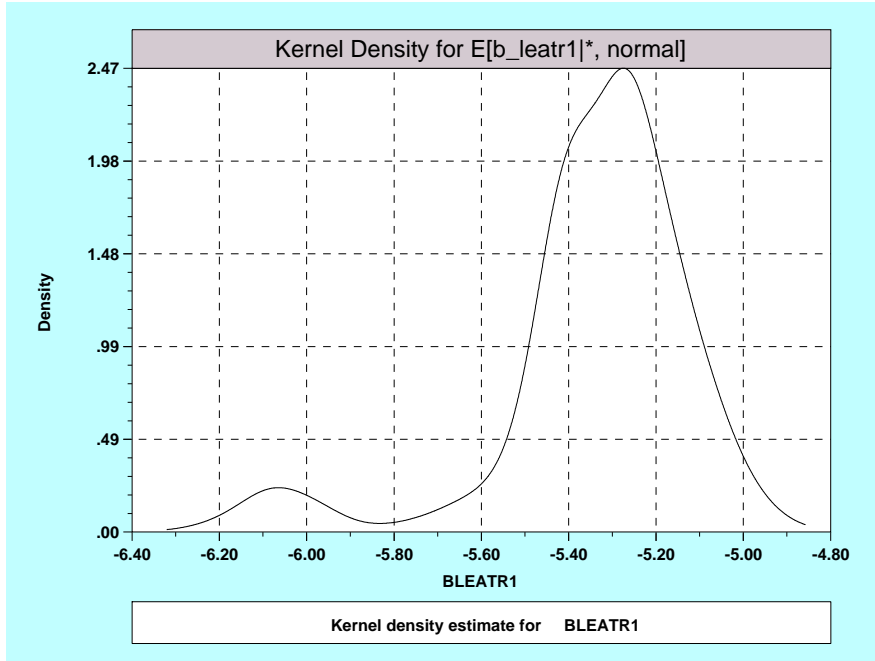
Notes: Number of points used in the Halton draws=100. The Mean=-5.34;
Std.Dev=0.226; Minimum=-6.28; Maximum=-4.90.

Column 13 from Table 12 Estimates

Kernel density estimate for   BLEATR2
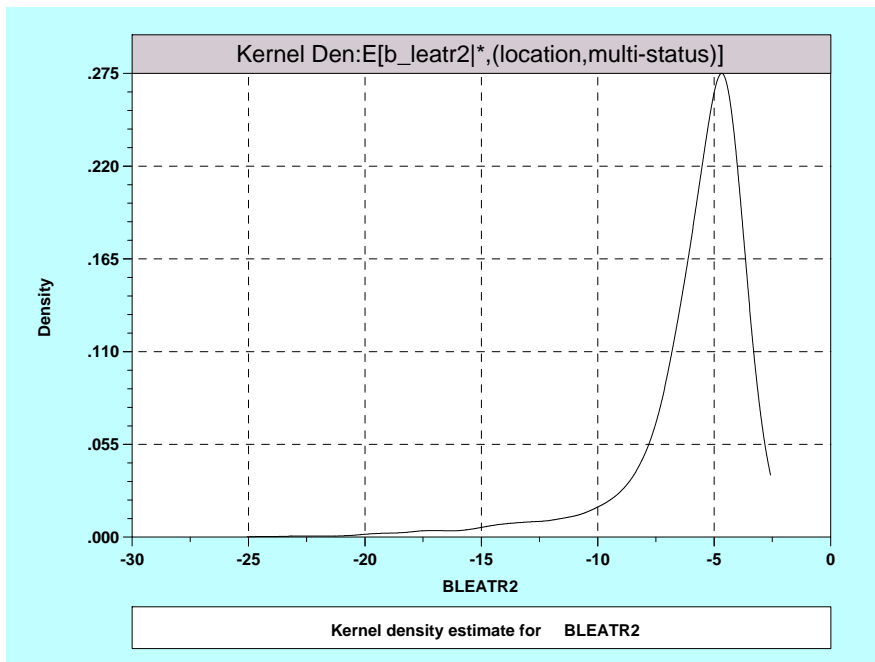
Notes: Number of points used in the Halton draws=100. The Mean=-5.88;
Std.Dev=2.614; Minimum=-24.56; Maximum=-3.04.