The value relevance of corporate income and taxation in Europe

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1. Introduction

This paper examines the effects of corporate income taxation on European equity prices. The valuation of firms and its relation with accounting data still differs across countries, despite the recent convergence in terms of accounting rule and practice. In addition, there is an important debate (although somehow stagnant under events of the financial crisis) in the EU context regarding the harmonization of taxation, with several countries advocating tax competition, as corporate taxes is one of the last tools to acquire a competitive advantage within the EU. Thus, a study to assess the importance of corporate taxation on the market value of European companies is both timely and important to this debate.

The relevant EU tax-debate is ongoing between governments and individuals, who favour tax harmonization on the one side and those favouring tax competition on the other. In a report prepared by the OECD (2001), a trend of corporate tax cuts is identified, inevitably leading to lower but also more harmonized tax rates. Whilst (unintentionally) having a harmonizing effect, this trend towards lower taxes is consistent with the arguments put forward by those sympathetic with tax competition. It is supported that countries with lower tax rates benefit from international investments in their domestic markets. With increasing capital market integration in Europe, supported by the EU principle of free capital mobility, and in the absence, therefore, of benefits attributable to segmented markets, tax effects become more important as a criterion for the selection of an investment location. As stated in a recent study by the Directorate-General for Research of the European Parliament (2001, 45) "the launching of the Euro reduces transaction costs and cancels exchange rate uncertainty in the Euro-zone, magnifying capital mobility". In fact, the loss of the tool of competitive devaluation within the Euro-zone makes the countries involved more eager to compete with the remaining tools at their disposition, taxation being one of the most important.

However, such competition might lead to a 'race to bottom' of tax rates, which would "unambiguously deteriorate fiscal balances since no country would [then] be able to attract investment from its EU partners through lower corporate taxation" as the Directorate-General for Research of the European Parliament study (2001, 45) mentions. In addition, in a world of growing financial integration and with less and less capital controls, it is argued that a reduction of the tax costs on capital would 'pass' the tax burden to more rigid factors such as labour, producing another important social problem.

Overall, the influence of corporate taxation on corporate market value is important and is of significant interest to policy makers and investors. The results of this study indicate the high significance of corporate taxation for the market value of European firms. The differences in taxation regimes appear to be one of the major determinants of the different magnitude of the taxation influence on stock prices across countries. Specifically, in countries that the

authorities appear to favour tax competition by imposing lower corporate income taxes the taxation variable appears to be more significant for the European equity prices. Another important finding of the study is that the importance of economic fundamentals is much lower for the valuation of companies in countries where tax cuts were introduced, and therefore the potential benefit of attracting foreign capital can become a disadvantage if such capital is speculative. The potential fly of speculative capital in the context of the financial crisis can have a snowball effect for stock markets and local economies.

The rest of the paper is structured as follows: Section 2 provides a short literature review. Section 3 discusses the main issues and identifies the research questions, as well as the research design, and Section 4 gives a short discussion on the data collection. Section 5 describes and discusses the empirical results, while Section 6 presents the conclusions of the study.

2. Literature Review

In an early study of corporate income tax effects, Beaver and Dukes (1972) found for a U.S. sample that the inclusion of tax deferrals in unexpected earnings measures improves significantly their correlation with unexpected stock returns. Similar research into the decomposition of earnings provides results showing the significance of taxes to the share prices of firms. Such studies were initiated by Lipe (1986), where the author identifies, using a price-earnings regression with a U.S. sample, the small but significant value relevance of six decomposed items including income taxes. In another U.S. study, Ohlson and Penman (1992) utilize a returns-earnings model, in which they disaggregate income and book value of equity into a number of components and introduce the tax expense and the deferred tax liabilities into the predictor of the market value of the firm. Their results, however, are not very conclusive with regard to taxes, since they differ according to short and long time horizons tested. In a related study, Ayers (1998) disaggregates deferred taxation from the book value of assets, in order to assess differences after the implementation of the SFAS No. 109 in the U.S. The author tests a model, which relates share prices to financial statement measures and finds that the net deferred tax liabilities disclosed under the new rule are more value relevant than in the previous regime.

In the context of recent developments in valuation modelling, Giner and Reverte (1999) use a model based on Ohlson (1995) to disaggregate corporation tax from earnings and they test if that provides incremental price–relevant information. The authors focus on the Spanish market and identify a strong relation between stock prices and corporate taxation. Recently, papers employing the Feltham and Ohlson (1995) framework also test the relation between taxes and share prices. Amir, Kirschenheiter and Willard (1997) include deferred taxes within such a framework by disaggregating them from the net operating assets for the U.S. and their results indicate the significance of deferred taxation in the valuation process. Zeng (2001) also includes corporate taxes in the Feltham and Ohlson model (1995), claiming a tax effect on Canadian firm market value through 'abnormal financial earnings' that results from the tax deduction on interest expenses. In general, it can be said that there is sparse evidence

regarding the influence of corporate taxation coming from studies that disaggregate taxes from corporate earnings.

3. Hypotheses setting and research design

There are several theoretical arguments why corporate value is affected by taxation. These include the effects on current profitability, effects on future profitability, and, less directly, effects on general economic activity. The most obvious influence of taxes on the market value of the firm is through current profitability, i.e. through its direct influence on earnings, resulting in efforts on the part of companies to reduce tax obligations by employing various methods of tax minimization, including earnings management. Such behaviour is prompted by the stronger interconnection in some countries between tax and accounting, since the income from the financial statements is used to calculate the taxable income.[1] Investors await the earnings announcements of firms in order to assess their profitability and financial condition. Although earnings announcements are related in the empirical literature with stock price reactions, the relationships do not identify the role of taxation in these earnings figures. Another issue related with current earnings is that of their persistence which apparently affects future profitability. Overall, one could argue that, in the empirical literature, the earnings variable is defined in most cases as after-tax earnings and therefore accounts indirectly for the effects of taxation, although this point is not made in most studies. In general, there appears to be sparse evidence and indeed little recognition in recent research of the role that tax plays in the link between current earnings and firm values.

Future profitability drives the current market value since investors and analysts attempt to foresee the future cash flows of each company and to assess the sustainability of potential investments. In this context, corporate taxation affects future profitability in various ways, including its impact on internal investment allocations and on more specific matters such as foreign direct investment decisions. For instance, decisions on corporate investment in plant and equipment can be directly related to taxation and to relevant tax incentives. As Hines (2001, 4) affirms, "higher tax rates generally reduce investment, though this depends on tax treatment of investment expenditure". Furthermore, Hassett and Hubbard (2001) suggest that corporate investment is inversely related to effective tax rates.

In the same way that internal investment decisions have significant tax implications for future profitability, (external) project investment depends upon effective and statutory tax rates, particularly in an international context. With the abolition of foreign exchange restrictions and capital controls in most countries in the recent years,[2] the differences in corporate taxation remain one of the few factors determining the international investment projects. For instance, when inward foreign direct investment (FDI) attracts to a country international investors who seek to implement business plans together with domestic firms,

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[1] Since the implementation of the 7th EU Directive interconnections between tax and accounting have diminished in the European Union countries. However, in many countries the taxable income is still calculated through the income reported in the financial statements (see Table 2) producing 'side' effects such earnings management in this direction.

[2] For the cases of the U.S. and the European Union see Fraser and Oyefeso (2005, 162).

this can result in increased market value of the latter. Devereux and Griffith (1998) investigate the impact of effective tax rates on the FDI planning of US multinationals in Europe. They show that the choice within Europe of the country, in which to invest is largely affected by the effective tax burden they would face in each of the countries. By constructing 'corporate tax attractiveness' indices, Simmons (2003) provides evidence that supports the influence of taxation on the size of FDI inflows for a number of countries. A good example of the strong interconnection between taxation and FDI flows is offered in the European Union, where in the last decade much of the inward FDI was directed to Ireland due to the large cut in the corporate tax rate (Tables 1 & 2, below).[3] The very high FDI inflows to Ireland, reaching +1.79% (net FDI) of the Irish GDP when most EU member states faced FDI outflows led to the rapid growth of the Dublin stock market, which directly affected the market value of Irish firms (Gropp and Kostial, 2001).

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[3] The corporate tax rate in Ireland has been reduced from 50% in 1986 to an average of 21.94% between 1990 and 1996 as it can be seen in Table 1.

Table 1. Corporate Taxation in Europe.

Countries	OECD				Buijink et al (2002), period: 1990-1996						Ernst & Young[e]	
	1986	*Rank*	*2000*	*Rank*	*STR*	*Rank*	*ETR1*	*Rank*	*ETR3*	*Rank*	*2002*	*Rank*
Austria	30	*1*	34	*4*	36.02	*7*	19.72	*2*	13.64	*2*	34	*3*
Belgium	45	*6*	39	*8*	40.28	*8*	21.64	*4*	23.56	*5*	40.2	*9*
France	45	*6*	33.3[f]	*3*	34.70	*4*	28.45	*8*	31.72	*8*	35.43	*7*
Germany	56	*10*	40	*9*	50.05	*9*	33.61	*10*	36.21	*9*	39.4	*8*
Greece	49	*9*	40	*9*	32.53	*2*	19.79	*3*	23.18	*3*	35	*5*
Ireland	50	*8*	24	*1*	21.94	*1*	13.78	*1*	12.58	*1*	16	*1*
Italy	36	*4*	37	*7*	50.48	*10*	30.66	*9*	37.35	*10*	40.25	*10*
Netherlands	42	*5*	35	*5*	35.00	*5*	26.84	*7*	31.37	*7*	34.5	*4*
Spain	35	*2*	35	*5*	35.30	*6*	22.90	*5*	23.45	*4*	35	*5*
UK	35	*2*	30	*2*	33.35	*3*	25.98	*6*	28.28	*6*	30	*2*

Sources: OECD Tax Database (2001), Buijink et al (2002), Ernst & Young, Worldwide Corporate Tax Guide (2002). **Notes:** STR is Statutory Tax Rate, ETR1 is the Effective Tax Rate 1 that equals to income taxes over pre-tax income and ETR3 equals [income taxes – (deferred tax$_t$ – deferred tax$_{t-1}$)] / pre-tax income as calculated by Buijink et al (2002). [f] The OECD 2000 rates for France are from the year 1999. [e] The figures reported consist the Effective Tax Rate as defined by Ernst & Young's Tax Guide (2002) and described in Table 2 below.

Table 2. Taxation in Europe.

Countries	Effective Tax Rate (%)			Definition of Taxable Income	Carry-forward	Carry-back	Other Information
	CTR	*Other*	*Total*				
Austria	34	-	**34**	Based on the Profit or Loss shown on the financial statements prepared according to Austrian GAAP.	No Limit	No	Minimum Tax
Belgium	39	3% of CTR	**40.2**	Based on Income reported on the annual financial statements.	No Limit	No	Temporary surtax on the CTR
France	33.3	6.3% of CTR	**35.43**	Based on financial statements prepared according to the French GAAP.	No Limit	3 years	Surtax + Social Security – Imputation system
Germany	25	14.4	**39.4**	Based on financial statements prepared according to German GAAP subject to tax adjustments.	No Limit	1 year	Surtax + Local (up to 20.5) taxes
Greece	35	-	**35**	Based on annual gross income, less allowable deductions.	5 years	No	Dividends no subject to tax
Ireland	16	-	**16**	Based on company's accounts prepared according to Irish GAAP and adjusted for taxes.	No Limit	1 year	From 2003 onwards tax falls to 12.5%
Italy	36	4.25	**40.25**	Profits disclosed in the financial statements adjusted for profits, exceptions and deductions.	5 years	No	Local tax between 4.25% and 8.5%
Netherlands	34.5	-	**34.5**	Fiscal profit not necessarily calculated from financial accounts. All commercial a/c methods to be reviewed for confirmation under fiscal law.	No Limit	3 years	Surtax for "excessive dividend distributions"
Spain	35	-	**35**	Company's gross income from the annual financial statements (Spanish GAAP), less certain deductions due to tax provisions.	15 years	No	Few Autonomous Communities have a different tax rate
UK	30	-	**30**	Based on financial statements prepared according to the UK GAAP, subject to certain adjustments and provisions.	No Limit	1 year	SME's can claim certain allowances and lower tax rate

Source: Ernst & Young, Worldwide Corporate Tax Guide, January 2002. **Note:** CTR stands for Corporate Tax Rate.

Outward foreign direct investment utilizes local funds abroad, depriving the local market of investment funds which could in turn affect the market value of local firms. Gropp and Kostial (2001) suggest that if a country's effective tax burden is higher in comparison to others, especially where competitive characteristics are similar, the tax base (i.e. the firm's registered headquarters) might move to countries with lower effective taxation, thus leading to outward FDI. Their results indicate a strong link between FDI and the tax regime.

3.1 Hypotheses

Based on the discussion in the previous sections, a number of hypotheses will be set. First, it is expected that both book value and abnormal earnings will be found significant for all countries. In addition, taxation is expected to be significant to the market value of European companies. Thus, the first hypothesis states that:

H1: Book value and abnormal earnings positively relate to market value for firms in all countries. Also, it is expected that taxation is significant for the European firm value.

In the second hypothesis, in countries that their authorities appear to favour tax competition the reduction in corporate taxes was aimed into attracting capital inflows (speculative or not) and foreign investment. Such developments would have direct effects on the equity prices produced by the changes in corporate taxation. In these cases the market value is expected to be more sensitive to changes in corporate taxation and the investors and shareholders are expected to be more aware on the taxation figures in the financial statements. Thus, in the countries with competitive tax policy that lowered their corporate taxation in the recent years, one would expect to identify higher (in absolute terms) tax coefficients. The large reduction in the corporate tax rates would be reflected on equity prices since it would make tax to be an important determinant of company earnings. On the other hand, in countries where the authorities appear to favour tax harmonization and have kept their corporate tax rates relatively high, tax would not be a major driving force to attract investors. The absolute number of the coefficient on taxation shows the value relevance of corporate taxes which is what the present study attempts to examine. Therefore, this study would expect to identify higher importance in taxation for countries that applied large corporate tax cuts in the period under discussion than in the countries that kept their tax rates high.

H2: For companies in countries where the authorities appear to favour tax competition it is expected that the influence of the tax expense will be higher than for companies in countries that their authorities appear to favour tax harmonization.

The effective tax rate is going to be employed in order to assess in which countries the authorities performed policies that promoted more tax competition.[4] The effective tax rate in

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[4] Since national tax authorities and governments do not state it openly (except in special cases), one has to employ an indirect measure to categorise tax regimes.

the definition suggested by Buijink et al. (2002, 121) is described as the ratio of income taxes over pre-tax income and shows the corporate tax expense that companies pay and it is what investors assess, in order to form their investment strategy. According to the effective tax rates presented in Table 1, Germany, France and Italy face the higher rates. It is assumed here that these countries, during the period of our sample, kept high corporate tax rates resisting the calls for tax competition and therefore, supporting tax harmonization. In addition, since tax cuts are the main driving force of tax competition the authorities in countries that have increased their corporate tax rates, namely Austria and Italy (OECD data, Table 1), would be considered as countries that favour tax harmonization. On the contrary, the rest of the countries have reduced their statutory tax rates significantly in the last years and they face low effective corporate tax rates. Based on that, Belgium, Greece, Ireland, the Netherlands, Spain and the UK will be considered as countries that favour tax competition.

Furthermore, in the third hypothesis, the influence of taxation is expected to be significantly different from the influence of tax-adjusted abnormal earnings for all countries. It is suggested that taxes affect equity prices through more channels and not only through the current profitability of the firm, as discussed previously.

H3: Corporate taxation is expected to affect market value in a different way from the adjusted abnormal earnings.

Finally, the sample will be tested in order to examine the existence of differences in the value relevance of taxation due to the firm size. In general, the results will be compared with those by Giner and Reverte (1999) for the Spanish case since these authors utilize a version of the Ohlson (1995) model. However, there is no available evidence on other European countries related to the value relevance of taxation and thus some papers, that discuss the importance of taxes for the value of European firms are going to be employed despite the fact that they do not utilize value relevance modelling to test their suggestions (for example Bogner, Fruhwirth and Schwaiger, 2001, for Austria and the Sheltons report, 1998, for the Netherlands). Such studies analyze the significance of taxation based on the magnitude of the tax that companies pay.

3.2 Research design

In order to examine the research questions stated above the Ohlson (1995) model will be employed. The research design builds on equation (1), below:

$$\mathbf{P_{i\,t} = y_{i\,t} + \alpha_1\, x^a_{i\,t} + \alpha_2\, v_{i\,t}} \tag{1}$$

Where $P_{i\,t}$ denotes share price of firm i in time t, $y_{i\,t}$ is the book value, $x^a_{i\,t}$ denotes the abnormal earnings and $v_{i\,t}$ is the other information variable.[5] As mentioned above, one of the

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[5] Where the coefficients: $\alpha_1 = \omega\, /\, (R_f - \omega)\ \geq 0$ and $\alpha_2 = R_f\, /\, (R_f - \omega)(R_f - \gamma)\ > 0$ The Linear Information Dynamics of the Ohlson (1995) model, where the autoregressive process of abnormal earnings and other

empirical objectives of this study is to identify the value relevance of taxation. To assess that, taxes will be disaggregated from the abnormal earnings in equation (1). The abnormal earnings are defined in Ohlson (1995) as the amount that the firm earns in excess of the risk-free rate of interest ($R_f - 1$) on the book value. Thus:

$$x^a_{it} = x_{it} - (R_f - 1) \, y_{it-1} \qquad (2)$$

The earnings in this model consist of after-tax earnings, which therefore can be divided into pre-tax earnings (x^{bt}_{it}) and the tax cost (ta_{it}), where tax costs have a negative sign and tax rebates a positive sign.

$$x_{it} = x^{bt}_{it} + ta_{it} \qquad (3)$$

Using equation (3) to substitute earnings in equation (2), a new description of abnormal earnings is created:

$$x^a_{it} = x^{bt}_{it} + ta_{it} - (R_f - 1) \, y_{it-1} \qquad (4)$$

Adjusted abnormal earnings (ax^a_{it}) will be defined as follows:

$$ax^a_{it} = x^{bt}_{it} - (R_f - 1) \, y_{it-1}$$

By substitution, equation (4) is modified to:

$$x^a_{it} = ax^a_{it} + ta_{it} \qquad (5)$$

Therefore, by now substituting equation (5) for abnormal earnings in the Ohlson Model, (1) leads to:

$$P_{it} = y_{it} + \alpha_1 \, ax^a_{it} + \alpha_1 \, ta_{it} + \alpha_2 \, v_{it} \qquad (6)$$

Equation (6) is the Tax Modified Ohlson (TMO) model that will be used to assess the value relevance of taxation and its interaction with other accounting variables. It should be noted that although income taxes, as well as other components of earnings, have been disaggregated in some prior related research studies, this has not been the case with respect to the Ohlson (1995) model itself, i.e. where the valuation model is based on abnormal earnings.[6]

There are some empirical issues to be resolved before testing the model. First, an intercept is added in the model as suggested by all previous empirical research in order to capture effects on prices from factors different than the ones tested here. The inclusion of the intercept

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information is defined and the parameters γ and ω are set accordingly, are the following: $x^a_{t+1} = \omega \, x^a_t + v_t + \varepsilon_1$ $_{t+1}$ and $v_{t+1} = \gamma \, v_t + \varepsilon_{2\,t+1}$

[6] The Linear Information Dynamics described in note 6 will now change accordingly:

$x^a_{i\,t+1} = \omega \, x^a_{i\,t} + v_{i\,t} + \varepsilon_{1\,i\,t+1} \;\;=^{(5)}> \; ax^a_{i\,t+1} + ta_{i\,t+1} = \omega \, ax^a_{i\,t} + \omega \, ta_{i\,t} + v_{i\,t} + \varepsilon_{1\,i\,t+1} \;=>$

$ax^a_{i\,t+1} = \omega \, ax^a_{i\,t} - ta_{i\,t+1} + \omega \, ta_{i\,t} + v_{i\,t} + \varepsilon_{1\,i\,t+1} => ax^a_{i\,t+1} = \omega \, ax^a_{i\,t} - \Delta ta_{i\,t+1} + (\omega - 1) \, ta_{i\,t} + v_{i\,t} + \varepsilon_{1\,i\,t+1}$ (a)

$v_{i\,t+1} = \gamma \, v_{i\,t} + \varepsilon_{2\,i\,t+1}$ (b)

In equation (a), adjusted abnormal earnings follow an autoregressive process but now they are affected both by the magnitude of the tax paid in the last period and the change in tax from the last period. While the change in tax affects negatively the adjusted abnormal earnings on a one-to-one basis, the previous period tax influences adjusted abnormal earnings through the parameter (ω-1).

appears even more significant due to the fact that an 'other non-accounting information' variable for vt is not employed. Several 'other information' variables have been used in the literature. The purpose of the present study is to assess the value relevance of taxation and the differences of the taxation effects on share prices across European countries without taking other aspects into account.[7] Finally, we add a coefficient for the book value, which is expected according to theory to be equal to the unity. Thus, the Ohlson (1995) model to be employed for the empirical testing will be the following:

$$P_{it} = \beta_0 + \beta_1 \, y_{it} + \beta_2 \, x^a_{it} + u_{it} \tag{7}$$

Where u_{it} is an error term and the rest of the notation is as noted in equation (1).

One of the contributions of this study lies in the empirical implications of the coefficient $\alpha 1$ of the TMO model on adjusted abnormal earnings and taxation. According to theory, taxes and adjusted abnormal earnings should have the same effect on share prices since they have the same coefficient $\alpha 1$. This can be expected to be the case if the only way that taxes influence share prices is through current earnings (or as a proxy of earnings). However, as it has been suggested previously, taxation affects share prices through its influence on future profitability and on the general economic activity, in addition to the effects on current profitability. Therefore, the present study argues the existence of an additional 'tax-effect' on share prices. In order to check the existence of such additional tax effects, a Wald test will be employed on the absolute values of the coefficients of taxes and adjusted abnormal earnings in an effort to assess their presumed equality. From the above discussion the TMO model is transformed to the equation (8) below:

$$P_{it} = \beta_0 + \beta_1 \, y_{it} + \beta_2 \, ax^a_{it} + \beta_3 \, ta_{it} + u_{it} \tag{8}$$

The notation is the same as in equations (6) and (1). The issue of the problems related to the effects of scale in relevant models has been discussed widely in the literature without reaching a consensus. In the case of the Ohlson framework, Barth and Clinch (2001, 27), after an articulated investigation, provide findings vital to this study that suggest that "share-deflated price specifications are most effective at mitigating scale effects". Following that all the variables in this study will be included in the analysis in a per share basis.[8]

4. Sample selection

The accounting and market data are collected by the Extel Company Analysis Database for the nine European countries for a time period of thirteen years (1988-2000). The data is extracted from consolidated accounts of companies with tax base in the local country. All data for all variables are in local currencies and per share. All variables are adjusted for stock splits and dividends using the adjustment factor of the Extel Company Analysis database. The usual outlier rule of the exclusion of one percentage point on the top and from the

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[7] In results not presented here the earnings forecasts of analysts have been used as the 'other information' variable without changing the bulk of the results regarding the relationship between share prices and taxation.
[8] Nevertheless, the relationships were tested by using variables deflated by both beginning period share prices and beginning period book value without altering the main findings. Results are available upon request.

bottom of all samples was performed. The one-year Treasury bill rates were collected from the IMF's International Financial Statistics for the years and countries under discussion.

The final sample consists of 22,689 firm-year observations for non-financial companies from Austria, Belgium, France, Germany, Greece, Ireland, Italy, the Netherlands, Spain and the United Kingdom. The abnormal earnings per share $x_{ai\ t}$ are defined as earnings per share less 'normal' earnings which consist the beginning of period book value per share times the one-year Treasury bill rate plus 4% following Ahmed et al (2000). In the literature several proxies for the risk free rate were used including flat rates (e.g. 12% from Dechow et al. 1999, or 10% by Amir et al. 1997) and interest rates plus premiums (e.g. 1-year T-bill + 4% from Ahmed et al. 2000). The latter view is supported in this paper, since changes in the cost of capital are significant during the years and among the countries. The earnings (after-tax) number was divided into pre-tax earnings and taxes directly in the collection of the data from the data base. The book value is defined as equity minus preferred shareholders equity. The selection of the sample and the descriptive statistics of the variables for all countries can be observed in Table 3, below.[9]

Table 3. Descriptive statistics, all variables per share for the time-period 1988-2000 in local currencies.

COUNTRIES	VARIABLES	OBS.	MEAN	MEDIAN	MAX	MIN	ST. DEV.
AUSTRIA	Market Value of Equity	545	752.5	290	7070	7.413	1230
	Book Value	545	481.7	194.3	5868	5.754	818.7
	Adjusted Abnormal Earnings	545	12.96	2.426	940.1	-386	101.6
	Income Taxes	545	-15.53	-1.791	5.241	-279.1	36.90
BELGIUM	Market Value of Equity	680	1640	145.5	29700	9.250	3925.4
	Book Value	680	1421	85.55	28097	3.695	3925.2
	Adjusted Abnormal Earnings	680	7.547	3.313	2693	-2672	377.6
	Income Taxes	680	-53.40	-3.305	5.674	-1447	160
FRANCE	Market Value of Equity	3659	195.2	86.13	1995	3.369	281.4
	Book Value	3659	136.6	53.83	1396	1.688	205.8
	Adjusted Abnormal Earnings	3659	8.001	3.386	250.3	-153.5	31.99
	Income Taxes	3659	-7.570	-2.603	10.65	-112.3	13.85
GERMANY	Market Value of Equity	2796	236.2	173.0	1955	5.798	234.9
	Book Value	2796	103.8	89.00	582.3	2.360	86.98

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[9]One should take under consideration that all variables are in local currencies and this will affect the comparability of the intercepts among samples. In order to compare the intercepts of the regressions as well as the descriptive statistics one should have in mind that: 1 Euro=13.760 Austrian Schillings =40.340 Belgian Franks =6.5596 French Franks =1.9558 German Marks =0.78756 Irish Punts =1936.3 Italian Liras =2.2037 Dutch Guilders =166.39 Spanish Pesetas and, in the period under discussion, approximately 0.66 British Pounds.

	Adjusted Abnormal Earnings	2796	7.407	4.129	144.2	-124.1	27.49
	Income Taxes	2796	-8.184	-3.571	11.71	-77.92	12.11
GREECE	**Market Value of Equity**	135	2029	88.60	20310	3.92	3372
	Book Value	135	614.0	107.1	4757	0.832	804.7
	Adjusted Abnormal Earnings	135	34.70	1.11	351.9	-214.7	85.26
	Income Taxes	135	-28.10	-1.74	-0.040	-202.6	40.56
IRELAND	**Market Value of Equity**	431	2.991	1.397	50.87	0.0168	5.741
	Book Value	431	1.547	0.873	16.51	0.005	1.909
	Adjusted Abnormal Earnings	431	0.106	0.064	1.445	-0.941	0.273
	Income Taxes	431	-0.055	-0.028	0.022	-0.467	0.071
ITALY	**Market Value of Equity**	1105	1606	4.488	24500	0.216	3400
	Book Value	1105	1497	2.799	20128	0.180	3180
	Adjusted Abnormal Earnings	1105	2.185	0.050	2188	-3273	444.0
	Income Taxes	1105	-87.29	-0.181	20.20	-1450	220.7
NETHERLANDS	**Market Value of Equity**	1229	47.48	29.70	794.1	1.670	68.13
	Book Value	1229	29.50	14.87	520.7	0.451	48.78
	Adjusted Abnormal Earnings	1229	3.211	2.156	58.01	-24.31	6.159
	Income Taxes	1229	-1.852	-0.938	2.846	-34.15	3.169
SPAIN	**Market Value of Equity**	887	732.2	25.24	13500	0.571	1849
	Book Value	887	615.2	18.87	8305	0.521	1335
	Adjusted Abnormal Earnings	887	-8.596	0.413	1044	-1125	150.6
	Income Taxes	887	-18.87	-0.568	86.40	-468.1	59.68
UK	**Market Value of Equity**	10687	2.144	1.460	14.95	0.043	2.141
	Book Value	10687	1.124	0.755	11.38	0.012	1.220
	Adjusted Abnormal Earnings	10687	0.080	0.063	1.068	-1.011	0.212
	Income Taxes	10687	-0.065	-0.046	0.047	-0.594	0.074

5. Empirical Results

5.1 General results

Initially, the Ohlson model of equation (9) is tested. One can observe the regression results in Table 4, below, for the nine European countries under discussion.

Table 4. Regression results of the Ohlson Model

$$P_{it} = \beta_0 + \beta_1 y_{it} + \beta_2 x^a_{it} + u_{it} \tag{7}$$

Countries	Obs.	β_0	β_1	β_2	Adj. R^2
Austria	551	**176.2**	**1.190**	-0.152	**64.4**
Belgium	688	**460.4**	**0.885**	**0.831**	**69.5**
France	3679	**45.51**	**1.097**	**2.112**	**66.4**
Germany	2816	**78.47**	**1.534**	**1.738**	**37.2**
Greece	135	202.5	**2.953**	**10.79**	**50.8**
Ireland	437	-0.113	**1.812**	**6.330**	**53.5**
Italy	1116	**247.2**	**0.997**	**1.160**	**75.8**
Netherlands	1237	**11.84**	**1.010**	**4.414**	**69.9**
Spain	895	**116.9**	**1.219**	**3.809**	**69.4**
UK	10776	**0.958**	**1.004**	**4.578**	**44.5**

Note: ** and * denote statistical significance at a 5% and 10% levels respectively. Significance levels are based on White (1980) corrected t-stats. P_{it} denotes share price of firm i in time t, y_{it} is the book value, x^a_{it} denotes the abnormal earnings and u_{it} is an error term. Adjusted R^2 is in percentage.

The intercepts in Table 4 are positive and statistically significant in all cases but Ireland and Greece (see note 9 on the treatment of the value of intercepts). The coefficients on the book value are consistent with theory, while most are very close to the unity. In terms of the coefficients on abnormal earnings β_2, they are positive and significant (except for the Austrian case) ranging from 0.831 for Belgium to 10.79 for Greece. In general, the results appear to confirm the predictions of the first part of the first hypothesis that both abnormal earnings and book value are value relevant for European companies.

According to the results of the disaggregated model shown in Table 5, the intercept is significant and positive in all countries except Ireland and Greece, while the magnitude of the intercept is similar and thus consistent to the results of Table 4. The $\beta 1$ coefficient on the book value is in all cases statistically significant and in most occasions considerably close to the unity as expected. The coefficient $\beta 2$ on adjusted abnormal earnings appears to be significant in most cases with the exceptions of Austria, Belgium and the Netherlands. Moreover, the coefficient $\beta 3$ on the corporate tax expense is statistically significant for the companies of all countries under discussion except Greece. These results suggest that corporate taxation is value relevant for European companies as supported by the second part

of the first hypothesis. In addition, the theoretical equality between the absolute value of coefficients $\beta 2$ and $\beta 3$ appears to be rejected in all cases by the Wald test employed and that appears to confirm the predictions of the third hypothesis. Finally, the adjusted R2s reported are high, exceeding in all cases (but Greece) the relevant percentages of Table 4 and indicating the higher explanatory power of the TMO model.

Table 5. Regression results of the TMO model.

$$P_{i\,t} = \beta_0 + \beta_1\,y_{i\,t} + \beta_2\,ax^a_{i\,t} + \beta_3\,ta_{i\,t} + u_{i\,t} \qquad\qquad (8)$$

Countries	Obs.	β_0	β_1	β_2	β_3	Adj. R^2	
Austria	545	**161.9****	**1.106****	-0.573	**-4.21****	**64.5**	*10.63***
Belgium	680	**334.6****	**0.460****	-0.005	**-12.2****	**79.4**	*294.1***
France	3659	**40.26****	**0.816****	**0.828****	**-4.86****	**69.0**	*308.3***
Germany	2796	**71.57****	**1.254****	**0.937****	**-3.37****	**40.6**	*137.8***
Greece	135	0.000	**3.427****	**10.45****	15.65	**21.8**	*4.053***
Ireland	431	0.084	**1.985****	**7.513****	**17.56****	**54.7**	*9.682***
Italy	1105	**213.2****	**0.746****	**0.576****	**-3.15****	**78.1**	*85.84***
Netherlands	1229	**9.492****	**0.565****	0.108	**-11.3****	**75.9**	*410.1***
Spain	887	**79.88****	**0.718****	**1.587****	**-11.9****	**78.3**	*227.2***
UK	10687	**0.697****	**0.562****	**2.566****	**-9.38****	**53.0**	*1777***

Note: ** and * denote statistical significance at a 5% and 10% levels respectively. Significance levels are based on White (1980) corrected t-stats. The Wald test is testing the equality of the coefficients β_2 and β_3. $P_{i\,t}$ denotes share price of firm i in time t, $y_{i\,t}$ is the book value, $ax^a_{i\,t}$ denotes the adjusted abnormal earnings, $ta_{i\,t}$ is taxation and $u_{i\,t}$ is an error term. Adjusted R^2 is in percentage.

As mentioned above, Austria, France, Germany and Italy are the countries of which the authorities are considered to perform policies favouring tax harmonization rather than tax competition. The coefficients $\beta 3$ on corporate taxation appear to be the lowest in these countries, confirming the predictions of the second hypothesis. For companies based in Austria corporate taxes appear to be significant when the adjusted abnormal earnings do not seem to affect share prices. The coefficient on taxation is low indicating that taxes influence equity prices to a lower extent due to the increase in the tax rate and also the outflows of capital and investment to the transition economies of Central and Eastern Europe. The importance of corporate taxation for Austrian equities might have risen after the year 2000, when an imputation tax regime was introduced, as supported by Bogner et al. (2001, 3). In the case of France, both adjusted abnormal earnings and corporate taxes seem to be important for the market value of listed firms. The French authorities have supported tax harmonization by keeping a high effective tax rate and that led to a low coefficient on corporate taxation. The coefficient $\beta 3$ for the French case is similar in magnitude to the one of Austria with the

difference between them being statistically insignificant.[10] The coefficients on taxation for Germany and Italy are the lowest identified in Table 5. These results suggest that higher taxes result to a lower influence of taxation on share prices, due to increased outward flows of capital and investment to countries with more competitive corporate tax rates. It should be noted that the difference between the two coefficients on taxes for Germany and Italy is not statistically significant. Furthermore, the differences of the coefficient on taxation of Germany and of Italy with the coefficient of France are statistically significant, indicating that the lower French effective tax rate in comparison to Germany and Italy (Table 2a) lead to a greater influence of taxes for the French shares than for German and Italian equity.

On the other hand, Belgium, Greece, Ireland, the Netherlands, Spain and the UK are considered to be the countries that their authorities favour tax competition. Indeed, the results indicate the great influence of corporate taxation on the market value of companies based in these countries with the exception of Greece. The coefficient on taxation appears to be in most cases in or close to double digit numbers and much higher from the one in countries that favour tax harmonization. In addition, the difference of the tax coefficients in the tax competitive countries is statistically different from the ones in the countries that seem to favour tax harmonization.

The leader in the application of tax competitive policies is Ireland. The coefficient on taxation for the Irish sample is positive suggesting that the corporate tax rate has a positive effect on share prices. In this case the investors appear to 'reward' the tax competitive stance of the Irish authorities. From the late '80s the Irish corporate tax rate has significantly reduced moving Ireland to the top of the rankings produced in Table 2. The large reduction in corporate tax rates has been described as a major factor for the boom in the Irish economy in the '90s. Burnham (2003, 552) suggests that one of the policy decisions playing a critical role in the Irish growth was "the early decision to adopt low corporate profit tax rates". In addition, Honohan and Walsh (2002, 26) highlight that the "two dominant explanations of the [Irish] recovery have been the corporatist social partnership and the lowering of tax rates". In the Belgian case, one can attribute the importance of abnormal earnings to share prices of Table 4 to the influence solely of taxation as it is disaggregated in Table 5. Thus, one can argue that the influence of taxation on current abnormal earnings is not the one driving share prices but the influence of taxation on future profitability through inward and outward FDI and internal investment planning. Belgium appears to be 3rd in terms of the effective tax burden and due to that the $\beta3$ coefficient on taxation is the second highest in absolute terms. To the latter point one can mention the existence of progressive taxation for Belgian companies which drives taxes even lower for a certain set of firms and is discussed below when firms are classified by size.

In the Greek case, in both models the earnings variables appear to have a significant and similar in magnitude coefficient $\beta2$. Despite that Greece appears to be both in statutory and effective tax rates in the low-tax group of countries, taxes seem to be insignificant for the

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[10] The t-test used to compare the differences between coefficients of different countries examines if the ratio $\frac{\beta - \beta^*}{\sqrt{(SE)^2 + (SE^*)^2}}$ provides with statistically significant numbers. Where β and β^* are the coefficients to be compared and SE and SE^* are the standard errors of the coefficients (see Giner and Rees, 2001, note 5).

market value of firms listed in the Athens stock market. This can be explained by the situation in the local market during the 1990s. The continuous expansion of the Athens market was not driven by inward FDI or by capital inflows. The expansion was mainly internally driven by many small investors which led to large equity financing (and not debt financing) for Greek companies. In addition, many Greek firms, especially from the north of the country, have been involved in outward FDI to the neighbouring transition economies. Henceforth, taxation is not one of the important determinants of Greek share prices, while earnings appear to be significant.

The Netherlands and Spain can be described as medium-tax countries and consequently one would expect the relative importance of taxes for the market value of firms based in the Amsterdam and Madrid stock markets. Taxes appear to be very important since the coefficients are two of the highest found and they seem to be of the same magnitude since the difference between them is statistically insignificant. In the Dutch case, taxation seems to be important and one of the determinants of such importance appears to be the amount of capital inflows. The Netherlands are situated in the heart of Europe and they appear to be a popular location for international companies, as highlighted by the Sheltons report (1998). In addition, in the Netherlands a progressive tax system exists that would increase the influence of taxes on share prices. In the Spanish case, during the largest part of the sample period Spain was a destination for foreign direct investment (for example in the automobile industry) mainly due to geographic location and low labour costs and a stable taxation system, which provided certain incentives, especially for some geographic regions. This result seems to be consistent with the one found by Giner and Reverte (1999) for taxes in the Spanish case.

Finally, in the United Kingdom, the results seem to be consistent with the initial expectations. The British authorities support tax competition and have always objected the imposition of a widespread EU tax harmonization.[11] The coefficient on taxation for British firms is high as expected and it is statistically different from the French and Dutch coefficients in between of which it lies. The British tax coefficient appears to be the lower among the countries that favour tax competition. This result may be based on the fact that in the period under discussion British firms were attracted from the lower corporate tax rates in Ireland offsetting in a way the tax competitive stance of the British authorities. Thus, the low UK corporate tax rates influenced to a lesser extent than expected the British equity prices. It should be noted that in the UK a progressive corporate tax regime exists as in the cases of Belgium and the Netherlands, with smaller companies paying lower percentages and enhancing the tax influence on share prices.

Overall, it appears that corporate taxes influence the European equity prices. This effect is much stronger for the case of companies from countries active in corporate tax cuts to the extent that the importance of the corporate earnings for the equity value is diminished. The authorities of these countries would argue that this result suggests that corporate tax cuts lead

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[11] The stance against tax harmonization of the UK authorities is made clear in the meetings of the leaders of the EU countries and in the ECOFIN meetings of the EU economics and finance ministers (proceedings published in the Council of Europe web site: http://ue.eu.int). Minford (2002, 50-52) describes the arguments against the participation of the UK in the Economic and Monetary Union placing the "damaging tax harmonization" on the top.

to higher capital inflows, since overall (lower) taxes appear to be more significant. However, one may argue that the much higher importance on the low tax figures than on the fundamentals of companies suggests that the capital inflows are speculative and that this would have an adverse effect, especially on periods of crisis as it happens in the current time period.

5.2 Classification by size

Next, segmented results based on the firm size are presented. As mentioned, three countries (Belgium, the Netherlands and the UK) have progressive tax rates with small and medium firms facing lower marginal tax rates than large firms as highlighted by Gordon and Lee (2001). In order to discuss the importance of firm size and of progressive taxation across countries, the sample is divided in Small and Medium Enterprises (SME) and Large Companies (LC). The classification was based on the Company Law of the EU and the latest Council Directive (1999/60/EC) of the 17th June 1999 which qualifies as SME, companies with total assets of less than 10 million euros.[12] The results can be observed in Table 6 below. Findings for a number of countries (Austria, Ireland, Germany, Greece and the Netherlands) are not reported since almost all locally based listed firms are categorized as large according to the EU classification.

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[12] Actually, for the time period under discussion the relevant directive sets three conditions: Total assets less than 10 million euros, Net turnover less than 20 million euros and less than 250 employees. In the present study only the first condition is considered for reasons of simplicity.

Table 6. Regression results of the TMO model for SMEs and LCs.

$$P_{i\,t} = \beta_0 + \beta_1\,y_{i\,t} + \beta_2\,ax^a_{i\,t} + \beta_3\,ta_{i\,t} + u_{i\,t} \qquad\qquad (8)$$

SMALL AND MEDIUM ENTERPRISES

Countries	Obs.	β_0	β_1	β_2	β_3	Adj. R^2
Belgium	252	37.04**	0.381**	-0.437	-18.73**	73.3
France	573	21.29**	0.350**	0.068	-5.951**	45.9
Italy	713	1.631**	0.487**	3.301**	-1.323	49.5
Spain	481	8.030**	1.105**	3.178**	6.992**	47.8
UK	757	0.228**	1.386**	2.093**	1.115	60.1

LARGE COMPANIES

Countries	Obs.	β_0	β_1	β_2	β_3	Adj. R^2
Belgium	429	667.7**	0.435**	-0.210	-10.69**	85.2
France	3099	52.12**	0.789**	0.494**	-5.154**	65.1
Italy	386	1544**	0.626**	0.488	-3.269**	43.7
Spain	403	250.1*	0.704**	0.822	-13.56**	62.7
UK	9920	0.741**	0.543**	2.624**	-9.227**	52.9

Note: ** and * denote statistical significance at a 5% and 10% levels respectively. Significance levels are based on White (1980) corrected t-stats. SMEs are the Small and Medium Enterprises while LCs are the Large Corporations. P_t denotes share price of firm i in time t, $y_{i\,t}$ is the book value, $ax^a_{i\,t}$ denotes the adjusted abnormal earnings, $ta_{i\,t}$ is taxation and $u_{i\,t}$ is an error term. Adjusted R^2 is in percentage.

The results indicate the existence of significant valuation differences between SMEs and LCs. The general conclusion is that for SMEs, earnings play an important role while taxes are not as significant for share prices. On the contrary, for LCs corporate taxes seem to be a more important driver of equity prices than the adjusted abnormal earnings. A special inference should be made for the two countries, here, with progressive tax regimes. In Belgium, taxation is more significant for small and medium companies than large ones. The Belgian result is largely expected, since the progressive tax regime provides much lower taxation for small companies in comparison with large firms, and henceforth the relatively lower importance of taxation in the latter was expected. For the UK it seems that corporate taxes affect the market value of large firms only. Such result was not expected, since the progressive tax rate should have given importance to the taxation variable for the share prices of British-based SMEs, an expectation not supported by the results. Finally, the results of the large companies highlight the differences between tax competition and tax harmonization. In this case as well, the value of equity of large companies from countries that favour competitive tax rates are more 'sensitive' to corporate taxes having higher tax coefficients.

6. Conclusions

The issue of value relevance of corporate income taxation has been examined in this study. The evidence suggests that for companies in nine European countries corporate taxes are important in the determination of their market value. Taxes appear to be a very important ingredient of abnormal earnings to influence share prices, with the coefficients on taxation being significantly higher than the coefficients on the adjusted abnormal earnings.

The results seem to suggest that corporate taxes are much more significant for the equity of companies that operate in countries that their authorities appear to favour tax competition. Such result may indicate the attraction of foreign capital in the local stock market due to the low corporate taxes. However, the high importance of corporate taxation is matched with the diminishing importance of earnings, which suggests the lower significance of the fundamentals in the valuation of companies in those countries. This could mean that the capital inflows are dominated by speculators who are only interested on the short-term tax competitive advantage (eventually other countries will lower taxes too) and not on the fundamentals of the local companies and therefore on their long term economic viability. In turn, this would mean that at the first instance of a change in corporate tax rates in other countries or in the events of a crisis the speculative capital will fly away from the local stock market exacerbating the effects of the crisis. Such sequence of events took place in many countries, with a history of tax cuts (mostly outside the Euro-zone), during the current global financial and economic crisis creating severe problems for the stock markets and the local economies. Overall, this study shows the importance of corporate taxation for the market value of European companies without providing conclusive evidence in favour or against tax harmonization. However, policy makers and investors both inside and outside the European Union have to take under consideration these results and the relevant discussion.

References

Ahmed, A.S., R.M. Morton, and T.F. Schaefer. 2000. Accounting Conservatism and the Valuation of Accounting Numbers: Evidence on the Feltham-Ohlson (1996) Model. Journal of Accounting, Auditing and Finance, 15 (3): 271-292.

Amir, E., M. Kirschenheiter, and K. Willard. 1997. The Valuation of Deferred Taxes. Contemporary Accounting Research, 14 (4): 597-622.

Ayers, B.C. 1998. Deferred Tax Accounting Under SFAS No. 109: An Empirical Investigation of its Incremental Value-Relevance Relative to APB No. 11. The Accounting Review, 73 (2): 195-212.

Barth, M.E. and G. Clinch. 2001. Scale Effects in Capital Markets – Based Accounting Research. Working Paper, Stanford University, January.

Barth, M.E. and S. Kallapur. 1996. The effects of cross-sectional scale differences on regression results in empirical accounting research. Contemporary Accounting Research, 13: 527-567.

Beaver, W.H., and R.E. Dukes. 1972. Interperiod tax allocation, earnings expectations and the behaviour of security prices. Accounting Review, 47: 320-332.

Bogner, S., M. Fruhwirth, and M.S. Schwaiger. 2001. Business Valuation with Attention to Imputed Interest on Equity Increase – A Comparison of alternative Pricing Methods in a Model with Stochastic Profitability. Working Paper, Vienna University of Economics and Business Administration.

Buijink, W., B. Janssen, and Y. Schols. 2002. Evidence of the Effect of Domicile on Corporate Average Effective Tax Rates in the European Union. Journal of International Accounting, Auditing and Taxation, 11: 115-130.

Burnham, J.B. 2003. Why Ireland Boomed. The Independent Review, VII (4): 537-556.

Christie, A. 1987. On cross-sectional analysis in accounting research. Journal of Accounting and Economics, 9: 231-258.

Council of Europe web site: http://ue.eu.int

Dechow, P.M., A.P. Hutton, and R.G. Sloan. 1999. An Empirical Assessment of the Residual Income Valuation Model. Journal of Accounting and Economics, 26: 1-34.

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: 335-367.

Directorate-General for Research. 2000. Tax Co-ordination in the European Union. European Parliament, Economic Affair Series ECON 125: 1-110.

Directorate-General for Research. 2001. The Reform of Taxation in EU Member States. European Parliament, Economic Affair Series ECON 127: 1-110.

Dumontier, P., and B. Raffournier. 2002. Accounting and Capital Markets: A Survey of the European Evidence. The European Accounting Review, 11 (1): 119-151.

Easton, P.D. and G.A. Sommers. 2003. Scale and Scale Effects in Market – Based Accounting Research. Journal of Business, Finance & Accounting, 30 (1 & 2): 25-55.

Ernst and Young 2002. Worldwide Corporate Tax Guide. Ernst & Young, January.

Feltham, G.A. and J.A. Ohlson. 1995. Valuation and Clean Surplus Accounting for Operating and Financial Activities. Contemporary Accounting Research, 11: 689-732.

Fraser, P. and O. Oyefeso. 2005. US, UK and European Stock Market Integration. Journal of Business Finance and Accounting, 32, (1 & 2): 161-181.

Giner, B. and C. Reverte. 1999. The Value Relevance of Earnings Disaggregation Provided in the Spanish Profit and Loss Account. The European Accounting Review, 8 (4): 609-629.

Giner, B. and W. Rees. 2001. On the Asymmetric Recognition of Good and Bad News in France, Germany and the United Kingdom. Journal of Business, Finance and Accounting, 28 (9 & 10): 1285-1331.

Gordon, R.H., and Y. Lee. 2001. Do Taxes Affect Corporate Debt Policy? Evidence from U.S. Corporate Tax Return Data. Journal of Public Economics, 82: 195-224.

Gropp, R. and K. Kostial. 2001. FDI and Corporate Tax Revenue: Tax Harmonization or Competition? Finance and Development, 38 (2): 10-13.

Hassett, K.A. and R.G. Hubbard. 2001. Tax Policy and Business Investment, in Auerbach, A.J. and M. Feldstein (eds). 2001. Handbook of Public Economics. Amsterdam: North-Holland.

Hines, Jr., J.M. 2001. Corporate Taxation. University of Michigan and NBER working paper, February.

Honohan, P. and B. Walsh. 2002. Catching up with the Leaders: The Irish Hare. Brookings Papers in Economic Activity, 1: 1-77.

International Monetary Fund. 2001. International Financial Statistics. Vol. LIV, August.

Lipe, R. 1986. The Information Contained in the Components of Earnings. Journal of Accounting Research, 24 (Sup.): 37-64.

Minford, P. 2002. Should Britain Join the Euro? The Chancellor's Five Tests Examined. The Institute of Economic Affairs. London: Profile Books Ltd.

Ohlson, J.A. 1995. Earnings, Book Values and Dividends in Equity Valuation. Contemporary Accounting Research, Spring, 661-687.

Ohlson, J.A. and S.H. Penman. 1992. Disaggregating Accounting Data as Explanatory Variables for Returns. Journal of Accounting, Auditing and Finance, 7: 553-573.

Organisation for Economic Co-operation and Development. 2001. Surveillance of Tax Policies: a Synthesis of findings in Economic Surveys. Economics Department Working Paper 303: 1-87.

Sheltons Aps. 1998. The Netherlands – Selected Corporate Taxation Topics. Sheltons – International Tax Counsel, 1-25.

Simmons, R.S. 2003. An empirical study of the impact of corporate taxation on the global allocation of foreign direct investment: a broad tax attractiveness index approach. Journal of International Accounting, Auditing and Taxation, 12: 105-120.

Zeng, Tao. 2001. Feltham-Ohlson Framework: The Implication of Corporate Tax. Working Paper, Wilfrid Laurier University.