

Spengel, Christoph

Working Paper

Effective marginal tax rates for US investors in Germany and Europe : an analysis of recent tax reforms in Germany

ZEW Discussion Papers, No. 99-55

Provided in Cooperation with:

ZEW - Leibniz Centre for European Economic Research

Suggested Citation: Spengel, Christoph (1999) : Effective marginal tax rates for US investors in Germany and Europe : an analysis of recent tax reforms in Germany, ZEW Discussion Papers, No. 99-55, Zentrum für Europäische Wirtschaftsforschung (ZEW), Mannheim

This Version is available at:

<https://hdl.handle.net/10419/24337>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Non-technical Summary

In this study we want to assess the attractiveness of Germany compared to the other EU-member states as a business location for US multinational investors. In a broader context we want to analyse impact of the corporate tax systems of the 15 EU-member states on the investment and the financing decision of an US multinational corporation. Therefore, the tax burden at the level of the subsidiary, the US parent, and the US shareholders has to be considered separately.

The calculation of the tax burdens is based on the commonly used approach of King and Fullerton which was extended in certain aspects. With the King-Fullerton-model effective marginal tax rates (EMTR) are calculated. Although this approach (as any model) has several well known limitations the main advantages of the model are besides the high international acceptance (e.g. the model is used in studies commissioned by the European Commission and the OECD) its versatility and the possibilities it offers to model the most relevant provisions of the tax codes, enabling the user to analyse the effects of different tax systems in a very systematic way.

We refer to a typical manufacturing company which is characterised by a particular combination of investments and forms of finance. We considered five different types of investment: intangibles, industrial buildings, machinery, financial assets and inventories. The financing policy considered three sources of finance: new equity capital, retained earnings, and debt.

The calculations took into account the most relevant tax provisions. Relating to company taxation, we considered the corporation tax systems, other (local) profit taxes and non-profit taxes, the tax rates, and the most relevant aspects of the tax base (e.g. depreciation rules and valuation of inventories). Moreover, the treatment of different types of investment income was taken into account (e.g. dividends, interest income and capital gains).

The results considering the *level of the subsidiaries* have shown that there is a great variation among the EMTR in the EU-member states. For our manufacturing company EMTR range from 12.36 (Greece) to 39.32 p.c. (France). The ranking of the countries from the highest to the lowest EMTR above all is influenced by differences between the (effective) rates of corporation tax (including local profit taxes and surcharges). However, on average there is only a minor impact of the tax base (i.e. rules for computing taxable income).

The analysis referring to the *level of the US parent and of the US shareholders* has shown, that differences between the effective tax burden in the EU-member states can distort decisions of a US multinational company with respect to the cross-border financing and location of investment within the EU. In general those countries with low national EMTR are more attractive as business location than countries with higher national EMTR.

Considering the source of finance of the subsidiary, debt financing is in the majority of cases most efficient whereas profit retention in the subsidiary is due to taxation of capital gains in the US indeed the worst tax strategy.

With respect to the present tax law, *Germany* stands only on 13th position in the country ranking of the EMTR. If the reform proposals for the year 2000 or later were carried out (e.g. reduction of statutory tax rate on profits to 35 p.c. and cut back of depreciation allowances) Germany would improve its position in the country ranking and range close to the average EMTR of all EU-member states. Moreover, the reform proposal are likely to have an impact both on investment patterns (e.g. deterioration of depreciable assets) and financing decisions (e.g. new equity would then be more tax efficient than debt financing) of US parents in Germany.

Effective Marginal Tax Rates for US Investors in Germany and Europe

- An Analysis of Recent Tax Reforms in Germany -

Christoph Spengel

Centre for European Economic Research (ZEW) and University of Mannheim

September 1999

Abstract:

In this paper the impact of the corporate tax systems of the 15 EU-member states on the investment and the financing decision of an US multinational corporation is analysed. The calculation of the resulting effective marginal tax rates (EMTR) closely follow the model of King and Fullerton. There is not only a great variation among the EMTR in the EU-member states which can affect cross-border location, investment and financing decisions. Moreover, recent reform proposals in Germany are likely to have an impact both on investment patterns and financing decisions of US multinationals in Germany.

Keywords:

Tax burden comparison, capital income taxation, tax competition, tax harmonization in Europe, cross-border tax planning

University of Mannheim

Schloss

D-68131 Mannheim

phone: ++49 / (0)621 / 181 - 1701

fax: ++49 / (0)621 / 181 - 1707

email: spengel@bwl.uni-mannheim.de

internet: <http://www.bwl.uni-mannheim.de/Jacobs>

I would like to thank Gerd Gutekunst for his help in calculating all the tax burdens.

1 Introduction

It is an established fact that the tax burden of companies located in different EU member states differs from country to country.¹ However, the impact of the national tax differentials on the decision of multinational companies, with respect to the financing and the location of investment within the EU is not that clear, as cross-border investment results in a more complex tax position than purely domestic investment. The aim of this paper then is to calculate the effective tax burden of US inbound investment in Germany, taking into consideration the recent changes in the German tax law (Steuerentlastungsgesetz 1999/ 2000/ 2002) as well as the proposals for reforming company taxation in the year 2000 or thereafter (chapter 3). Moreover, the attractiveness of Germany as a business location for subsidiaries of US multinationals compared to other EU-member states is also analysed by establishing a country ranking of the tax positions (chapter 4). Thereafter, chapter 5 will look at the conclusions. Firstly however, the assumptions and the methodology are discussed (chapter 2).

2 Assumptions and methodology

The calculation of effective tax burdens for cross-border investment of a US corporation in all EU-member states closely follows the commonly used approach of King and Fullerton² for the calculation of effective marginal tax rates.³ The effective marginal tax rate (EMTR) is defined as the difference between the pre-tax real return (p) on a marginal investment and the post-tax real return (s) of the supplier of finance divided by the pre-tax real return (p).

$$EMTR = \frac{p - s}{p}$$

Marginal investments are projects which yield a rate of return on the initially invested capital (equal to one unit) that is just sufficient that the project is from the investor's point of view worthwhile. For the computation of EMTR it is necessary to specify a starting point. This could be either the pre-tax real return of the company (p) or the pre-tax real return of the supplier of finance. In this paper an uniform pre-tax real return for all projects at a rate of 10 per cent is employed.⁴

The calculations of cross-border EMTR are based on the following assumptions:

- A parent company resident in the United States of America makes an investment through a subsidiary located in each of the 15 EU-member states.
- The shareholding of the parent in the subsidiary is 100 per cent, thus only direct cross-border investment is considered (and no transnational portfolio investment).
- The private individual shareholder of the US-parent company (portfolio investor) resides in the same country as the parent (e.g. in the USA).

¹ See for example SPENGLER / ECKERLE (1999).

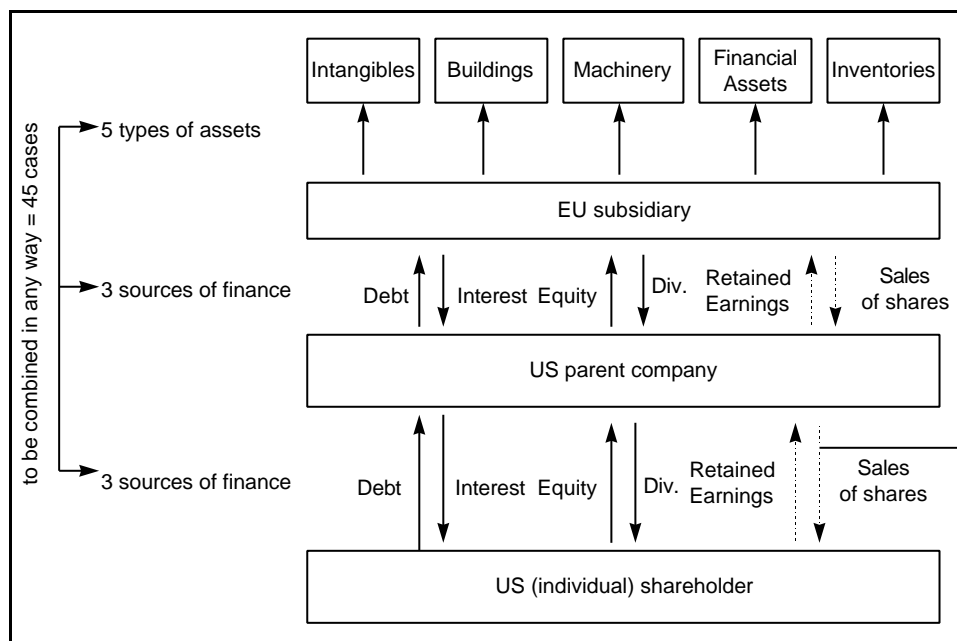
² See KING / FULLERTON (1984).

³ International studies of the OECD and the European Commission also applied this methodology. See COMMISSION OF THE EUROPEAN COMMUNITIES (1992); OECD (1991). See also CLAASSEN (1994); CHENNELLS / GRIFFITH (1997); CARON & STEVENS / BAKER & MCKENZIE (1999). For an evaluation of different methodological approaches see OECD (1999); SPENGLER / ECKERLE (1999).

⁴ Our procedure is commonly denoted as the fixed-p case. Studies using the so-called fixed-r case are COMMISSION OF THE EUROPEAN COMMUNITIES (1992); OECD (1991); CHENNELLS / GRIFFITH (1997). For both cases see KING / FULLERTON (1984).

- As taxation differs from the assets and the financing possibilities, EMTR depends upon the proportion of the marginal investment in each type of asset and the proportion of the company financing in each source of finance. Thus, EMTR depends upon the particular industry and sector respectively as each industry can be characterised by a particular combination of assets and sources of finance. As investment of the subsidiary we examine five different assets: intangibles acquired from third parties, industrial buildings, machinery, financial assets and inventories.
- The financing policy of the subsidiary and the parent respectively considers three sources of finance: new equity capital, retained earnings, and debt.
- The source of finance of the investment in the subsidiary disregards the possibility of the subsidiary to raise funds at its local or even international capital markets. Instead, the investment is financed only by retained earnings of the subsidiary, by the injection of new equity from the parent in the subsidiary or by lending money from the parent to the subsidiary.
- In each case, the parent itself needs to raise funds, which it could do as in the domestic context by issuing new equity, retained earnings, or borrowing money from its own shareholders.
- There is complete repatriation of the profits of the subsidiary to the parent. In the event of new equity financing, we assume a full distribution of profits (dividends); in the event of financing with retained earnings we assume that the return at the level of the shareholder will be generated by a capital gain upon disposal of the shares; in the event of debt financing we assume that the return at the level of the company is fully used to pay the interest to the shareholder.

Figure 1:
Combinations of types of assets and sources of finance in the case of US cross-border investment



Under these assumptions, profits resulting from the investment may be taxed at three different levels. First, taxation takes place at the level of the subsidiary. Second, profits may be taxed at the level of the parent when they are repatriated from the subsidiary to the parent company. Third, personal taxes may be paid by individual shareholders of the US-parent company. The following calculations and analysis clearly distinguishes between these three levels.

The tax burden at each level depends on how the investment is financed at the level of the subsidiary and how the parent itself is financed in order to provide the subsidiary with money. Considering new

equity financing, financing by retained earnings, and debt financing at the level of both the subsidiary and the parent, nine financing possibilities have altogether to be examined. If we combine these financing possibilities with five types of asset at the level of the subsidiary this results in 45 possible combinations of asset and financing as set out in figure 1. In addition, keeping the comparison of EMTR for all countries still manageable, we calculate mean (weighted average) EMTR for each type of asset, each source of finance, and an overall mean EMTR for all combinations of assets and financing.⁵

As taxation differs from the assets and the financing possibilities, the above EMTR essentially depend upon the proportion of the marginal investment in each type of asset and the proportion of the company financing in each source of finance. Thus, EMTR depends upon the particular weights for the assets and the financing possibilities. For the sake of comparison of the effects solely attributable to the different national tax codes the same weights have to be used for all 15 EU-member states.⁶ We took data from official German statistics. The last year available was 1995. As a base case we consider data for the manufacturing sector:

- The weights for the assets of the subsidiary are 1.43 p.c. for intangibles, 12.99 p.c. for buildings, 17.49 p.c. for machinery, 38.25 p.c. for financial assets, and 29.84 p.c. for inventories.⁷
- For the sources of finance of the subsidiary we took statistical data concerning the cross-border financing of German subsidiaries of US parent companies in the manufacturing sector. The weights are 29 p.c. for new equity, 33 p.c. for retained earnings, and 38 p.c. for debt.⁸ For the sources of finance of the US parent we use the same weights.

Finally, the calculation of EMTR has to consider both tax and economic variables as input data.

Table 1: Most important assumptions of the calculations

Assumptions about sector, assets, financing, and shareholders			
Sector	Manufacturing sector as base case		
Types of asset of subsidiary (weights in p.c.)	Intangibles (1.43), industrial buildings (12.99), machinery (17.49), financial assets (38.25), inventories (29.84)		
Sources of finance of subsidiary and parent (weights in p.c.)	New equity (29), retained earnings (33), debt (38)		
Shareholders	Private investors, top personal tax rates, (portfolio investment)		
Assumptions about depreciation, inflation, and pre-tax return			
True economic depreciation (always straight-line)	Intangibles 12.5 years	Buildings 53 years	Machinery 11 years
Lifetime for tax purposes where no year is specified	10 years	25 years	7 years
Inflation rate	1.1 per cent		
Pre-tax real return	10 per cent		

Taxation: Attention is given to the most relevant tax provisions. Relating to company taxation, we consider corporation tax and the corporation tax systems, other (local) profit taxes and non-profit

⁵ The methodology for calculating EMTR is set out with worked examples in CARON & STEVENS / BAKER & MCKENZIE (1999), Annex A and D; OECD (1991), p. 207-243.

⁶ See AUERBACH (1990), p. 326; KING / FULLERTON (1984), p. 281; OECD (1991), p. 94-95.

⁷ See DEUTSCHE BUNDESBANK (1997).

⁸ DEUTSCHE BUNDESBANK (1999). These weights differ from those of the purely domestic sources of finance. Taking again Germany as an example the weights are 10 p.c. for new equity, 55 p.c. for retained earnings, and 35 p.c. for debt. See DEUTSCHE BUNDESBANK (1997).

taxes, the tax rates, and the most relevant aspects of the tax bases⁹ (e.g. depreciation rules and valuation of inventories). The study uses information about the tax systems in operation as of the 1st January 1999.¹⁰ Several assumptions have to be made with respect to the use of tax electives and the tax position of the private investors. Concerning the use of tax electives (e.g. depreciation) we always take the most tax efficient possibility (e.g. declining-balance instead of straight-line). With respect to private investors we assume that they are always taxable with their income at top rates. Furthermore, we consider rules for non-qualified private investors (e.g. portfolio investments) only.

Economic data: The EMTR for the type of assets will differ because of different capital allowance rates for tax purposes relative to the true economic depreciation rates and because of inflation. Our assumptions about the rates of true economic depreciation were taken from international surveys.¹¹ The inflation rate in use is 1.1 p.c., which was the actual rate in Germany in the year 1998.¹² Finally, EMTR will depend upon the assumption about the pre-tax return (p) which is an indicator for the profitability of the investment. For our base case we fix p at a rate of 10 p.c.

3 Taxation of US inbound investment in Germany

3.1 The situation in Germany as from 1999

3.1.1 Level of the German subsidiary

In order to give access to the interpretation of EMTR we refer to the situation in Germany as from 1999 as a detailed example.¹³

Table 2:
EMTR with a 10 per cent pre-tax real return in Germany 1999 - level of German subsidiary -

Asset	Intangibles	Buildings	Machinery	Financial Assets	Inventories	Weighted average
Finance						
New Equity	30.92	42.48	35.48	46.70	46.70	43.96
Retained Earnings	38.24	48.58	42.32	52.35	52.35	49.90
Debt	-17.13	2.47	-9.39	9.63	9.63	4.99
Weighted average	15.08	29.29	20.69	34.48	34.48	31.11

Table 2 shows the results for the level of the German subsidiary. It should be interpreted as follows: For an investment in financial assets, yielding a given pre-tax real return of 10 p.c. and financed by *retained earnings*, the EMTR is 52.35 p.c. Thus, EMTR equals the German statutory tax rate on profits¹⁴ which is not surprising as no depreciation is allowed for financial assets. Taking financial assets as a benchmark, we observe that for machinery, financed in the same way, the EMTR is about ten percentage points lower and thus also lower as the statutory tax rate. The reason is that capital allowances on machinery for tax purposes are higher than the estimated true economic depreciation due to the shorter lifetime of the asset (7 years for taxation instead of 11 years) as well

⁹ Thin capitalisation rules at the level of the subsidiary are neglected in the case of debt financing.

¹⁰ If not otherwise indicated relevant information was taken from INTERNATIONAL BUREAU OF FISCAL DOCUMENTATION (1999); JACOBS (1999a), p. 116-135.

¹¹ See LEIBFRITZ (1989), p. 161.

¹² See DEUTSCHE BUNDESBANK (1998), Statistischer Teil, p. 7. No attention is given to differing exchange rates. Referring to European Monetary Union the assumption seems to be reasonable.

¹³ See ENDRES / DITSCH (1999), p. 26-40 for a brief description of the German tax system.

¹⁴ Corporation tax (S_{CT} , 40 p.c.), solidary levy on CT (S_{SL} , 5.5 p.c.), trade tax on income (S_{TT} , 17.59 p.c. for an average municipal levy for 1999 of 426 p.c.). With respect to the deductibility of trade tax from the corporation tax base the statutory tax rate for profits equals 52.35 p.c. ($S_{TT} + S_{CT} * (1 + S_{SL}) * (1 - S_{TT})$).

as to the application of declining-balance (30 p.c.) instead of straight-line depreciation. This results in a tax saving due to „accelerated“ deduction of the costs of capital from the tax base. EMTR for intangibles is lowest which indicates generous depreciation practice in Germany. Intangibles are assumed to be depreciable for tax purposes over five years instead of an estimated period of true economic depreciation of 12.5 years. For buildings the depreciation practice in Germany is also generous (25 compared with 40 years) as the EMTR is below the statutory tax rate on profits. Nevertheless, EMTR is highest of all depreciable assets. This can be attributed to land tax (Grundsteuer) which is an extra levy on an investment in buildings. Finally, turning to inventories, the EMTR also equals the statutory tax rate. In Germany we assume inventories are valued on a „last in first out“ basis which eliminates a taxable inflationary gain with regard to the assumptions of the King-Fullerton model.

If the corporation financed the same investments by new share capital (i.e. *new equity*), EMTR would be lower for all assets. The reason is the split corporation tax rate in Germany which will be reduced to 30 p.c. for distributed profits (i.e. dividends) instead of 40 p.c. for retained earnings. However, this tax rate reduction is compensated by the levy of a withholding tax on dividends of 5 p.c. according to article 10 paragraph 2a of the US/German Double Tax Treaty.

In contrast, if the investments were *debt-financed*, EMTR would be close to zero for all investment. The reason is, that in the case of borrowing, interest is deductible from the tax base with its nominal value. For investment in financial assets just yielding the market pre-tax return interest deduction at the same rate results in the absence of discriminating taxes in a EMTR equal to zero. However, EMTR on debt financed financial assets is positive due to the levy of trade tax on the half of the interest paid. On the other hand, the combination of interest relief and high capital allowances can result in an effective subsidy of marginal investments. In the case of Germany this is true for investments in intangibles and machinery.

In summary, EMTR for investment in intangibles is lowest while EMTR for financial assets and inventories are highest. This is also obvious from the weighted average effective marginal tax rates we calculate in addition to the 15 EMTR. We compute weighted average rates for assets by summing up all EMTR that involve a particular asset multiplied by the weight of each source of finance (29 p.c. for new equity, 33 p.c. for retained earnings, and 38 p.c. for debt).¹⁵ Turning to finance, from the weighted average rates for sources of finance it can easily be seen that debt financing is subject to the lowest EMTR regardless of the precise asset. In spite of the levy of trade tax on half of the interest payments the weighted average EMTR on debt financing is close to zero due to interest deduction and generous depreciation allowances. We compute weighted average rates for sources of finance by summing up all EMTR that involve a particular financing possibility multiplied by the weight of each asset (1.43 p.c. for intangibles, 12.99 p.c. for buildings, 17.49 p.c. for machinery, 38.25 p.c. for financial assets, and 29.84 p.c. for inventories).¹⁶ Overall, across all 15 asset and finance combinations, the weighted average effective marginal tax rate of the given German subsidiary amounts to 31.11 p.c.

¹⁵ For example weighted average EMTR for machinery (20.69 p.c.) is the sum of EMTR/ machinery/ new equity * weight new equity (35.48 * 29 p.c. = 10.29 p.c.), EMTR/ machinery/ retained earnings * weight retained earnings (42.32 * 33 p.c. = 13.98 p.c.), and EMTR/ machinery/ debt * weight debt (-9.39 * 38 p.c. = -3.58 p.c.).

¹⁶ For example weighted average EMTR for new equity (43.96 p.c.) is the sum of EMTR/ intangibles/ new equity * weight intangibles (30.92 * 1.43 p.c. = 0.44 p.c.), EMTR/ buildings/ new equity * weight buildings (42.48 * 12.99 p.c. = 5.51 p.c.), EMTR/ machinery/ new equity * weight machinery (35.48 * 17.49 p.c. = 6.21 p.c.), EMTR/ financial assets/ new equity * weight financial assets (46.70 * 38.25 p.c. = 17.86 p.c.), and EMTR/ inventories/ new equity * weight inventories (46.70 * 29.84 p.c. = 13.94 p.c.).

3.1.2 Level of the US parent

If we only consider the level of the subsidiary, debt-financing is always more tax-efficient than financing by new shares issue and profit retention, respectively. However, in order to compare all forms of finance in an adequate manner, and hence, to decide whether a subsidiary should be financed by retention, new equity, or debt, the analysis must include the taxation of profit repatriation at the level of the parent (e.g. taxation of inter-company dividends, interest, and capital gains at the US parent).¹⁷ We first assume that the parent finances the costs of the investment in the subsidiary by new equity or profit retention. Refinancing with debt is considered in a subsequent step.

- *Debt financing*: Interest payments from a foreign subsidiary are subject to US corporation tax.
- *New equity*: Foreign source dividends are taxable in the USA. In order to avoid double taxation on dividends from foreign subsidiaries in the case of qualified participation a credit will be granted not only in respect of a withholding tax on dividends but also in respect of the underlying profit taxes paid by the subsidiary (indirect foreign tax credit).¹⁸ The indirect foreign tax credit is limited to the US corporation tax on the grossed-up dividend income. Depending on the level of the foreign compared to the US tax burden on dividends the final burden on dividends will therefore be either the foreign tax paid (excess foreign tax credit) or the higher US tax on the taxable dividend income. In case of an excess foreign tax credit foreign source dividends are effectively exempted from further US taxation (exemption method in principle).
- *Profit retention*: Capital gains upon the disposal of shares from the subsidiary are fully subject to corporation tax in the United States.

If the parent uses debt for refinancing the investment in the subsidiary the connected interest costs are always deductible in the United States. The reason is that interest, dividends and capital gains are taxable in the USA (capital export neutrality).

Considering now the accumulated tax burden of the foreign subsidiary and the parent we obtain the following results reference given to the different forms of financing (see table 3).

Table 3:
EMTR with a 10 per cent pre-tax real return in Germany 1999 - level of US parent -

Finance of subsidiary	Finance of parent	Intangibles	Buildings	Machinery	Financial Assets	Inventories	Weighted average
New Equity	New Equity	3092	4248	3548	4670	4670	43.96
	Retained Earnings	3092	4248	3548	4670	4670	43.96
	Debt	-6.28	11.50	0.74	1800	1800	13.79
Retained earnings	New Equity	63.71	7042	6636	7288	7288	71.29
	Retained Earnings	63.71	7042	6636	7288	7288	71.29
	Debt	44.17	5450	4825	5827	5827	55.83
Debt	New Equity	21.30	3404	2633	3870	3870	35.68
	Retained Earnings	21.30	3404	2633	3870	3870	35.68
	Debt	-21.07	-1.47	-13.33	5.69	5.69	1.05
<i>Weighted average</i>		25.42	37.96	30.37	42.54	42.54	39.57

¹⁷ For the taxation of international investment income in the United States see ENDRES / SPENGLER (1997), p. 83-93. No respect is given to states' taxes which usually exempt foreign source income.

¹⁸ E.G. German corporation tax and trade tax on corporate income paid on the dividends can be credited against US corporation tax (article 23 paragraph 1 of the US/German Double Tax Treaty). See also DEBATIN / ENDRES (1990), p. 389-395. The fact, that the foreign (e.g. German) income has to be determined according to the US rules is neglected.

As the US statutory corporation tax rate (35 p.c.) is lower compared to the German statutory tax rate on distributed profits including 5 p.c. withholding tax on dividends (46.7 p.c.) from the point of view of a US parent debt financing in general is the most tax efficient way of financing. The reason is that profits shifted through debt financing from the subsidiary to the parent are (besides trade tax on income in Germany on half of the interest) only taxable at the level of the parent. Therefore, the lower US corporation tax rate is relevant for the EMTR. A further advantage results from the fact that in the case of inflation the tax saving of interest deduction in Germany is higher than the tax burden on interest in the USA.¹⁹ Due to the full taxation of capital gains upon the disposal of shares in the USA retention of profits in a German subsidiary is taxed twice: statutory rate on retained earnings in Germany and corporation tax in the USA. As profit retention bears already the highest EMTR in Germany this financing strategy therefore is always worst from a tax point of view. EMTR on distributed profit is between the two other ways of financing. As the tax burden on distributed profits in Germany is higher than the US corporation tax, no further tax has to be paid by the US parent resulting in an actual exemption of dividends from German subsidiaries.

In case the US parent itself is debt-financed there is no explicit limitation as to the deduction of the connected interest costs from the corporation tax base. Thus, interest deduction does not result in a specific tax saving with respect to the different forms of financing at the level of the subsidiary.

Overall, across all 45 asset and finance combinations, the weighted average effective marginal tax rate of the given German subsidiary at the level of the US parent amounts to 39.57 p.c.

3.1.3 Level of the US shareholder

So far, the tax implications of the investment and the financing of a German subsidiary were only analysed up to the level of the US parent not considering the level of the US shareholders. This might be sufficient in the case of a multinational corporation with only little connection to its (anonymous) shareholders. However, this analysis is neglecting at least the effect of the corporation tax system on the financing of the parent by its own shareholders. Moreover, the EMTR on the overall level is relevant for a medium-sized corporation with close relations to its shareholders.

Table 4:
EMTR with a 10 per cent pre-tax real return in Germany 1999 - level of US shareholder -

Finance of subsidiary	Finance of parent	Intangibles	Buildings	Machinery	Financial Assets	Inventories	Weighted average
New Equity	New Equity	67.13	73.46	69.63	75.78	75.78	74.28
	Retained Earnings	52.89	61.28	56.20	64.34	64.34	62.36
	Debt	43.51	53.25	47.36	56.81	56.81	54.50
Retained earnings	New Equity	85.09	88.77	86.55	90.12	90.12	89.25
	Retained Earnings	76.68	81.56	78.61	83.34	83.34	82.18
	Debt	71.14	76.80	73.38	78.87	78.87	77.53
Debt	New Equity	61.86	68.84	64.62	71.39	71.39	69.74
	Retained Earnings	45.92	55.16	49.57	58.54	58.54	56.35
	Debt	35.41	46.14	39.65	50.06	50.06	47.52
<i>Weighted average</i>		<i>58.61</i>	<i>66.09</i>	<i>61.56</i>	<i>68.82</i>	<i>68.82</i>	<i>67.05</i>

Looking at table 4 for the overall level we can observe that the overall weighted average effective marginal tax rate is rising from 39.57 to 67.05 per cent. The reason is that investment returns are taxed in the hands of the shareholders independent of the source of finance. However, the EMTR

¹⁹ See in general FULLERTON (1984), p. 33; FULLERTON (1986), p. 286; GRAVELLE (1985), p. 104.

depends on whether we consider interest income (debt financing), dividends (new equity) or capital gains (profit retention at the level of the parent).

In the case of *debt financing* by the parent interest income of the shareholder is fully taxable at the top personal rate. We assume a rate of 45.22 p.c. including federal income tax of 39.6 p.c. plus state income tax of California. We can see from table 4 that the lowest weighted average EMTR results if both the German subsidiary and the US parent were debt-financed. In this situation the „profits“ of the German subsidiary are - except trade tax on half of the interest expenses - only taxable in the hands of the US shareholders at their personal income tax rates.

The highest EMTR result from *new equity* financing. Under the US classical corporation tax system dividends are subject to full income tax at a rate of 45.22 p.c. This causes an economic double taxation as the underlying profits have already been subject to corporation tax at the level of the German subsidiary. As profit retention in Germany bears a higher effective tax burden compared with dividend distribution the financing policy bearing the highest EMTR is profit retention in Germany and new share issue in the USA (89.25 p.c.).

In the case of *retained earnings* the realised capital gain on the accumulated profits in the corporation upon disposal of the shares is taxable at a reduced rate of 27.44 p.c. (20 p.c. plus state income tax of California). Thus, economic double taxation of profits is reduced compared with dividend distribution but not eliminated if we consider debt financing as the benchmark.

In summary, it seems reasonable to conclude, that both the German and the US tax system as well as the interaction of these two systems distort investment and financing decisions in many ways. The most tax efficient investment in a German subsidiary is a intangible due to generous capital allowances. Considering the source of finance it is obvious that debt financing is most efficient and profit retention in Germany is the worst tax strategy. Both tax systems favour debt financing compared to new equity regardless of whether we take the level of the subsidiary, the level of the parent or the overall level. However, the reasons for the preferential treatment of debt financing is different for each of the three level. For the level of the subsidiary it is the German trade tax on income that allows interest costs to be deducted to the extend of 50 p.c. At the level of the US parent it is the lower US statutory tax rate on profits compared with the one in Germany that causes preferential treatment of debt financing. Finally, at the level of the shareholders the classical corporation tax leads to a higher tax burden on dividends and capital gains.

3.2 Effects of recent changes and proposals for reforming company taxation in Germany

The tax amendment act for the years 1999/ 2000/ 2002 was passed in the German Parliament in spring 1999. The purpose of the tax changes that came into force on January 1st 1999 was a modest reduction of personal income tax rates and a reduction of the corporation tax rate on retained earnings from 45 p.c. to 40 p.c. The corporation tax rate for distributed profits remained unchanged. These tax rate reductions were largely financed by cut backs of tax incentives, a long list of disallowing certain expenses altogether from deduction, changes in tax accounting that lead to a deferral of the tax deductibility of much expenditure until nearer the time it is actually incurred, and strict limitations of tax-free step-ups in case of mergers and acquisitions.

Although there are a lot of tax changes many of them seem relevant and seem to have a negative impact for foreign companies investing in Germany²⁰ the calculation model applied in this paper can only consider the reduction of the corporation tax rate on retained earnings. The most striking consequences of this tax rate reduction on the financing decision of a US corporation investing in Germany through a subsidiary can be seen from table 5.

- Considering the effects on all types of assets and sources of finance the overall average EMTR in 1999 compared with 1998 are slightly lower on all three levels (e.g. subsidiary, parent, and shareholder).
- The reduction of the overall EMTR is caused by the reduction of the corporation tax rate on retained earnings. As a result, profit retention in the German subsidiary becomes more attractive relative to the two other ways of financing. The lower EMTR on retained earnings is a definitive gain and becomes obvious on all three levels. However, for US investors or foreign investors in general this benefit is not of much practical importance as the two other ways of financing still bear a significantly lower EMTR.
- This reduction of the overall average EMTR is compensated by a higher average EMTR on debt-financed investment. The reason is the lower benefit of interest deduction in Germany due to the reduction of the corporation tax rate on retained earnings.²¹
- As the corporation tax rate on distributed profits does not change there is almost no impact on the average EMTR on new equity. What can be observed is a little rise of the EMTR on all three levels.
- Compared with 1998 the little higher average EMTR on new equity in 1999 is caused by minor increases of the EMTR of the depreciable assets. These increases are the result of lesser tax saving through accelerated depreciation due to the reduction of the corporation tax rate on retained earnings.

Table 5:

Weighted average EMTR with a 10 p.c. pre-tax real return in Germany for sources of finance assuming investment mix in the subsidiary (intangibles (1.43 p.c.), industrial buildings (12.99 p.c.), machinery (17.49 p.c.), financial assets (38.25 p.c.), inventories (29.84 p.c.)) - 1999 and tax reform proposal -

Weighted average types of assets		German subsidiary			US parent			US shareholder		
		1998	1999	reform	1998	1999	reform	1998	1999	reform
Intangibles		14.82	15.08	12.18	24.40	25.42	24.24	58.00	58.61	57.91
Buildings		29.84	29.29	26.46	37.68	37.96	36.87	65.92	66.09	65.44
Machinery		21.20	20.69	19.38	30.04	30.37	30.61	61.36	61.56	61.71
Financial assets		35.95	34.48	25.35	43.09	42.54	35.86	69.15	68.82	64.85
Inventories		35.95	34.48	25.35	43.09	42.54	35.86	69.15	68.82	64.85
Weighted average source of finance										
Finance of subsidiary	Finance of parent									
New Equity	New Equity				43.80	43.96	37.35	74.19	74.28	70.65
	Retained Earnings	43.80	43.96	37.35	43.80	43.96	37.35	62.24	62.36	57.56
	Debt				13.53	13.79	3.61	54.36	54.50	48.93
Retained earnings	New Equity				74.09	71.29	60.98	90.78	89.25	83.60
	Retained Earnings	54.21	49.90	34.05	74.09	71.29	60.98	84.22	82.18	74.79

²⁰ See ENDRES / DITSCH (1999), p. 89-99 for an overview and comments.

²¹ The reduction of the corporation tax rate has two effects that cause a rise of the EMTR in the case of debt financing: First it lowers the gains of accelerated depreciation (e.g. the net present value of depreciation) and second it causes a rise of the effective (and definitive) burden of the German trade tax.

	Debt				60.14	55.83	39.97	79.89	77.73	68.85
Debt	New Equity	4.44	4.99	5.79	33.96	35.68	39.55	68.80	69.74	71.86
	Retained Earnings				33.96	35.68	39.55	55.10	56.35	59.15
	Debt				-1.60	1.05	7.00	46.07	47.52	50.78
<i>Overall weighted average</i>		32.28	31.11	24.26	39.84	39.57	34.93	67.21	67.05	64.28

The final stage of the reform should be a uniform and linear tax rate of not more than 35 p.c. to be levied on all business profits regardless of the legal form or the distribution policy. This „business tax“ should cover both corporation income tax and trade tax on income. The details of this last step of the reform have not yet been drafted. However, a group of experts on company taxation has worked out a concept²² of a „business tax“ with several aspects still to be discussed in autumn 1999/ spring 2000. The main features of this concept are, as already mentioned, a significantly lower tax rate on profits and the abolition of the corporation tax imputation system. Instead double taxation of distributed profit should be mitigated at the shareholder level by deducting half of the dividend income received for the purpose of income tax (so-called shareholder relief).²³ It is intended that part of the tax rate reductions are - besides the positive revenue effects of the abolition of the imputation system - to be financed by a further „broadening“ of the tax base. It seems reasonable to conclude that such a change of the corporation tax system and the tax rates will have fundamental consequences for the German tax system.²⁴ For foreign companies investing in Germany, however, the change of the corporation tax system has only a minor effect.

On the other hand, the tax rate reductions as well as the tax base broadening have an immediate impact on the tax burden of a German subsidiary and are therefore more relevant.²⁵ In order to assess the effect of the main features of the proposed tax changes on the EMTR the following calculations are based on the following assumptions:

- Implementation of a uniform tax rate on profits of 35 p.c. (corporation tax of 25 p.c. plus trade tax on income of 10 p.c. effectively). The 35 p.c. mark the statutory tax rate on retained earnings, for distributed profits the statutory tax rate rises to 38.25 p.c. assuming that the 5 p.c. withholding tax on dividends will still be levied according to the US/German Double Tax Treaty. The statutory (trade) tax rate on interest expenses will fall to 7.14 p.c.
- A cut back in the depreciation rules is considered both for machinery (declining balance only 20 instead of 30 p.c.) and buildings (straight-line depreciation over 33 instead of 25 years).

The effects on the EMTR for a US investor are also shown in table 5. With respect to the overall weighted average EMTR we can observe a decrease on all three levels if we compare the reform scenario with the situation of 1999. However, the tax rate reductions have different impacts on the weighted average EMTR for the different sources of finance.

- At the level of the *German subsidiary* the EMTR on retained earnings is falling significantly from 49.9 to 34.05 p.c. Moreover, with respect to the 5 p.c. withholding tax on dividends this would result in a EMTR on new equity of 37.35 p.c. thus being lower than in 1999 by about six per-

²² See BRÜHLER EMPFEHLUNGEN ZUR REFORM DER UNTERNEHMENSBESTEUERUNG (1999).

²³ If a corporation receives (domestic and foreign) dividends these are exempted from corporation tax (participation exemption).

²⁴ See HEY (1999), p. 1192-1198; WAGNER / BAUR / WADEN (1999), p. 1296-1300; SCHIFFERS (1999), p. 741-747; SPENGLER / VITUSCHEK (1999), for a first analysis of the reform proposals.

²⁵ A short assessment of the reform proposals on international inbound and inbound investors is given by MENCK (1999), p. 561-563.

- centage points.²⁶ Finally, EMTR on debt financing, however, would rise from 4.99 to 5.79 p.c. as the tax savings due to depreciation became less.
- If we move to the level of the *US parent* we can see that now, in contrast to the previous years, new equity would be the most tax efficient way of financing. As there is still a situation of excess tax credit there is no further tax payment of the parent. Compared with new equity financing, the reform would result in a higher EMTR on debt financing as the statutory tax rate on dividends (38.25 p.c.) would be less than the statutory tax rate on interest that faces the US parent (39.64 p.c. = 7.14 p.c. trade tax in Germany plus 32.5 p.c.²⁷ corporation tax in the USA). As the reduced statutory German tax rate on profits leads to decreasing tax savings caused by depreciation EMTR on debt financing after the reform would even be higher than at present. Although profit retention will be taxed significantly lower after the reform at the level of the subsidiary it is still the worst strategy from a tax point of view as capital gains are taxed again at the level of the US parent.
 - Shifting to the level of the *US shareholder* there is no change in the most tax efficient way of financing the German subsidiary (e.g. debt is inferior to equity financing). However, as long as we have the classical corporation tax systems in the USA, US shareholders should still finance there corporation with debt instead of new equity from a tax point of view.

Finally, with regard to the taxation of different *investment projects*, the EMTR for the types of assets in table 5 show that the relative taxation of depreciable assets (e.g. intangibles, buildings, and machinery) in comparison with financial assets (and inventories) is becoming worse over time. The tax reform concepts in Germany could therefore discourage, instead of encourage, real investment in the future.²⁸ Taking EMTR for buildings as an example we can see that in 1998 EMTR for financial assets was about six percentage points higher (35.95 compared to 29.84 p.c.) while after the proposed reform the EMTR for financial assets would be about one percentage point less (25.35 compared to 26.46 p.c.). The reason is that all assets whether or not depreciable or productive would benefit from the tax rate reductions over time. This already leads to a relative deterioration of depreciable assets as the present value of tax savings due to capital allowances is falling. Moreover, the said deterioration is even rising because of the tax base broadening and the cut back of depreciation practise respectively.

3.3 Summary

Taking a time span of three years the German tax policy shows a clear trend towards a lowering of tax rates combined with extending the tax base through a reduction in the (net present) value of allowances for depreciable assets. This development is in line with the tax policies in other major industrialized countries²⁹ beginning with the USA in 1986. Although the overall EMTR for a typical mix of assets and sources of finance is decreasing over time, the effects of this tax policy on the stimulation of new investment and the attractiveness of Germany as a business location for US multinational investors is not clear. The questionable impact on new investment stems from the deterioration in the

²⁶ Thus, we cannot confirm the conclusion that the tax burden on new equity will rise due to the reform. See MENCK (1999), p. 562 for this conclusion that only seems to respect the corporation tax rate (30 p.c. at present) and to neglect the effect of the trade tax that is included in the upper ceiling of the business tax rate of 35 p.c.

²⁷ E.g. 35 p.c. on an interest 92.86 p.c. after deducting German trade tax of 7.14 p.c.

²⁸ See in general SCHNEIDER (1992), p. 665-669; SINN / LEIBFRITZ / WEICHENRIEDER (1999), p. 16; SPENGLER (1994), p. 10-11; WAGNER (1999), p. 1522, 1527.

²⁹ See CHENNELLS / GRIFFITH (1997), p. 3-5.

taxation of depreciable assets relative to financial assets. Whether Germany becomes more attractive as a business location for foreign investors is not an exclusive question of the overall EMTR. If we look at the EMTR for the different sources of finance we can see that EMTR on debt financing is rising while EMTR both on retained earnings and distributed profits are falling. With respect to the financing of a German subsidiary of an US investor new equity even becomes more tax efficient than debt. Therefore, the US investor should think over the financing structure of his German subsidiary if he used debt as the predominant source of financing in the past. However, what is clear from the results shown in table 5 is that the most tax efficient financing structure will bear a higher effective tax burden after the reforms than before.³⁰ This could prevent some investors from investing in Germany, if there were better alternatives. The results are summed up in figures 2-4 considering new equity, profit retention, and debt financing at the level of the subsidiary but only new equity refinancing at the level of the parent.

³⁰ E.g. at the level of the parent EMTR for new equity after the reform is 37.35 p.c. whereas EMTR for debt was 33.96 p.c. in 1998. See table 5.

Figure 2:

EMTR with a 10 p.c. pre-tax real return in Germany assuming investment mix in the subsidiary and only new equity refinancing of the US parent (see table 5 for the numbers) - 1998 -

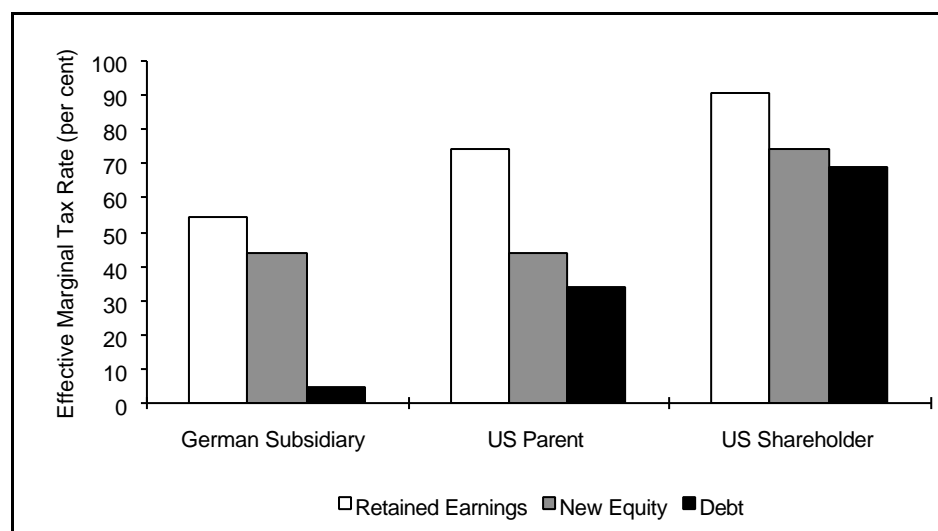


Figure 3:

EMTR with a 10 p.c. pre-tax real return in Germany assuming investment mix in the subsidiary and only new equity refinancing of the US parent (see table 5 for the numbers) - 1999 -

Fehler! Kein gültiges eingebettetes Objekt.

Figure 4:

EMTR with a 10 p.c. pre-tax real return in Germany assuming investment mix in the subsidiary and only new equity refinancing of the US parent (see table 5 for the numbers) - reform -

Fehler! Kein gültiges eingebettetes Objekt.

An interesting (and intended?) side effect of the reform is that the tax revenues in Germany are expected to rise. This holds at least for existing investment structures if the US investors act accordingly and change their financing policy from debt to equity. The reason is that profits in the case of equity financing are taxed in the source country (i.e. Germany = state of the subsidiary) whereas interest in the case of debt financing is taxed in the state of residence of the investor (i.e. USA = state of resident of the parent).

4 Taxation of US inbound investment in Europe

Finally, the attractiveness of Germany as a business location of US multinationals compared to other EU-member states is analysed by establishing a EU-wide country ranking of the tax positions. The results for the level of the EU-subidiaries, the US parent and the US shareholders are shown in tables 6-8 with respect given to the German tax changes and reform proposals. Concerning the weights for the assets and sources of finance, the calculations are based on the same assumptions as in the case of Germany (see table 1, chapter 2 for the weights).

For the *level of the subsidiaries*³¹ we see from the final column in table 6 that the EU-average overall EMTR is about 23 p.c. The highest EMTR can be found in France (39 p.c.). Overall EMTR below 20 p.c. are calculated for five countries (Finland, Greece, Ireland, Italy, and Sweden), the value for Greece (12 p.c.) being the lowest. Thus, we have an EU-wide spread of about 27 percentage points. This EU-wide spread cannot be explained by just one feature of the national tax systems but as a general rule it can be stated that countries having a high statutory tax rate on profits (such as

³¹ See CARON & STEVENS / BAKER & MCKENZIE (1999), Chapter C for a detailed analysis.

France, Spain, and Germany) also show high effective tax burdens for retained earnings while countries with low statutory tax rates on profits often go along with low effective tax burdens (for example Finland and Sweden).

Table 6: Effective marginal tax rates - US-cross-border-investment in Europe - Level of subsidiary

Source of finance subsidiary	Average of each source of finance (assuming investment mix in the subsidiary- intangibles (1.43 p.c.), industrial buildings (12.99 p.c.), machinery (17.49 p.c.), financial assets (38.25 p.c.), inventories (29.84 p.c.))			Overall
	New Equity	Retained Earnings	Debt	average
Austria	41.13	38.03	6.10	26.79
Belgium	40.97	37.86	-3.86	22.91
Denmark	37.74	34.47	0.71	22.59
Finland	31.43	27.82	-0.25	18.20
France	53.47	51.02	18.36	39.32
Germany 1998	43.80	54.21	4.44	32.28
Germany 1999	43.96	49.90	4.99	31.11
Germany reform	37.35	34.05	5.79	24.26
Greece	27.25	27.25	-11.93	12.36
Ireland	29.21	29.21	1.68	18.75
Italy	30.93	27.29	-0.50	17.78
Luxembourg	41.15	38.05	-4.14	22.92
Netherlands	38.43	35.19	0.29	22.87
Portugal	38.97	35.76	-2.63	22.10
Spain	48.96	43.28	12.75	33.32
Sweden	30.63	26.98	-1.42	17.24
United Kingdom	31.58	31.77	2.52	20.60
<i>Average (Germany 1998)</i>	<i>37.71</i>	<i>35.88</i>	<i>1.47</i>	<i>23.34</i>
<i>Average (Germany 1999)</i>	<i>37.72</i>	<i>35.59</i>	<i>1.51</i>	<i>23.26</i>
<i>Average (Germany reform)</i>	<i>37.28</i>	<i>34.54</i>	<i>1.56</i>	<i>22.80</i>

Table 7: Effective marginal tax rates - US-cross-border-investment in Europe - Level of parent

	Average of each source of finance (assuming investment mix in the subsidiary- intangibles (1.43 p.c.), industrial buildings (12.99 p.c.), machinery (17.49 p.c.), financial assets (38.25 p.c.), inventories (29.84 p.c.))									
Source of finance subsidiary	New Equity			Retained Earnings			Debt			Overall average
Source of finance parent	New Equity	Retained Earnings	Debt	New Equity	Retained Earnings	Debt	New Equity	Retained Earnings	Debt	
Austria	41.13	41.13	9.42	63.57	63.57	43.95	39.13	36.13	6.36	37.09
Belgium	40.97	40.97	9.18	63.46	63.46	43.78	31.54	31.54	-5.32	33.51
Denmark	37.74	37.74	4.22	61.25	61.25	40.39	35.63	35.63	0.96	33.38
Finland	35.90	35.90	1.39	56.93	56.93	33.74	35.90	35.90	1.39	31.15
France	53.47	53.47	28.41	72.01	72.01	56.94	46.02	46.02	16.95	47.91
Germany 1998	43.80	43.80	13.53	74.09	74.09	60.14	33.96	33.96	-1.60	39.84
Germany 1999	43.96	43.96	13.79	71.29	71.29	55.83	35.68	35.68	1.05	39.57
Germany reform	37.35	37.35	3.61	60.98	60.98	39.57	39.55	39.55	7.00	34.93
Greece	33.77	33.77	-1.89	56.56	56.56	33.17	27.25	27.25	-11.93	26.29
Ireland	37.16	37.16	3.33	57.84	57.84	35.13	37.16	37.16	3.33	32.52
Italy	30.93	30.93	-6.27	56.59	56.59	33.21	34.32	34.32	-1.04	28.55
Luxembourg	41.15	41.15	9.46	63.58	63.58	43.98	31.88	31.88	-4.80	33.78
Netherlands	38.43	38.43	5.27	61.72	61.72	41.11	35.19	35.19	0.29	33.61
Portugal	38.97	38.97	6.10	62.09	62.09	41.68	32.87	32.87	-3.28	32.88
Spain	48.96	48.96	21.47	66.98	66.98	49.21	43.28	43.28	12.75	43.08
Sweden	35.15	35.15	0.22	56.39	56.39	32.90	35.15	35.15	0.22	30.32
United Kingdom	37.22	37.22	3.42	59.50	59.50	37.69	37.43	37.43	3.73	33.33
<i>Average (Germany 1998)</i>	<i>39.65</i>	<i>39.65</i>	<i>7.15</i>	<i>62.17</i>	<i>62.17</i>	<i>41.80</i>	<i>35.78</i>	<i>35.78</i>	<i>1.20</i>	<i>34.48</i>
<i>Average (Germany 1999)</i>	<i>39.66</i>	<i>39.66</i>	<i>7.17</i>	<i>61.98</i>	<i>61.98</i>	<i>41.51</i>	<i>35.90</i>	<i>35.90</i>	<i>1.38</i>	<i>34.46</i>
<i>Average (Germany reform)</i>	<i>39.22</i>	<i>39.22</i>	<i>6.49</i>	<i>61.30</i>	<i>61.30</i>	<i>40.43</i>	<i>36.15</i>	<i>36.15</i>	<i>1.77</i>	<i>34.16</i>

Table 8: Effective marginal tax rates - US-cross-border-investment in Europe - Overall level

	Average of each source of finance (assuming investment mix in the subsidiary- intangibles (1.43 p.c.), industrial buildings (12.99 p.c.), machinery (17.49 p.c.), financial assets (38.25 p.c.), inventories (29.84 p.c.))									
Source of finance subsidiary	New Equity			Retained Earnings			Debt			Overall average
Source of finance parent	New Equity	Retained Earnings	Debt	New Equity	Retained Earnings	Debt	New Equity	Retained Earnings	Debt	
Austria	72.72	60.30	52.11	85.02	76.58	71.03	71.63	58.85	50.43	65.57
Belgium	72.64	60.18	51.98	84.96	76.50	70.93	67.47	53.34	44.03	63.44
Denmark	71.61	58.83	50.41	84.26	75.58	69.86	70.48	57.33	48.67	64.25
Finland	69.86	56.51	47.71	81.36	71.77	65.43	69.86	56.51	47.71	62.02
France	79.48	69.25	62.51	89.64	82.71	78.14	75.40	63.85	56.23	72.02
Germany 1998	74.19	62.24	54.36	90.78	84.22	79.89	68.80	55.10	46.07	67.21
Germany 1999	74.28	62.36	54.50	89.25	82.18	77.73	69.74	56.35	47.52	67.05
Germany reform	70.65	57.56	48.93	83.60	74.79	68.85	71.86	59.15	50.78	64.28
Greece	68.69	54.96	45.91	81.18	71.50	65.12	65.12	50.23	40.41	59.13
Ireland	70.55	57.42	48.77	81.88	72.43	66.20	70.55	57.42	48.77	62.85
Italy	67.14	52.90	43.52	81.19	71.52	65.14	69.00	55.36	46.38	60.47
Luxembourg	72.74	60.32	52.13	85.03	76.60	71.04	67.66	53.59	44.32	63.60
Netherlands	71.24	58.34	49.84	84.01	75.24	69.47	69.47	55.99	47.11	63.49
Portugal	71.54	58.73	50.29	84.21	75.51	69.78	68.20	54.31	45.15	63.06
Spain	77.01	65.98	58.71	86.89	79.06	73.91	73.91	61.87	53.93	69.14
Sweden	69.45	55.96	47.07	81.08	71.37	64.97	69.45	55.96	47.07	61.53
United Kingdom	70.58	57.47	48.82	82.79	73.63	67.60	70.70	57.61	48.99	63.32
<i>Average (Germany 1998)</i>	<i>71.96</i>	<i>59.29</i>	<i>50.94</i>	<i>84.29</i>	<i>75.61</i>	<i>69.90</i>	<i>69.85</i>	<i>56.49</i>	<i>47.68</i>	<i>64.07</i>
<i>Average (Germany 1999)</i>	<i>71.97</i>	<i>59.30</i>	<i>50.95</i>	<i>84.18</i>	<i>75.48</i>	<i>69.76</i>	<i>69.91</i>	<i>56.57</i>	<i>47.78</i>	<i>64.06</i>
<i>Average (Germany reform)</i>	<i>71.73</i>	<i>58.98</i>	<i>50.58</i>	<i>83.81</i>	<i>74.99</i>	<i>69.16</i>	<i>70.05</i>	<i>56.76</i>	<i>48.00</i>	<i>63.88</i>

Table 9 shows the statutory tax rates on profits (corporation tax and other profit taxes when levied) and the EMTR for retained earnings in the EU-member states. EMTR above the statutory tax rates are caused by the levy of non-profit taxes others than land tax (e.g. Austria, France, and Luxembourg) or by comparably restrictive rules for profit computation (e.g. UK). On the other hand, EMTR noticeably below the statutory tax rates express comparably generous rules for profit computation (e.g. Belgium, Greece) or preferential tax rates for certain types of income (e.g. Italy).

EMTR for new equity are in general higher than EMTR on retained earnings. Thus, profit retention at the level of the subsidiary seems more favourable than distributing income to the parent. However, one has to bear in mind that capital gains upon the disposal of shares are fully taxable in the USA whereas profit taxes on distributed income can be credited against US corporation tax. At the level of the subsidiary the higher EMTR for new equity relative to retained earnings result from the levy of withholding taxes according to the provisions of the double tax treaties of the EU-member states with the USA (except Greece and Italy).³² In Germany (1998 and 1999) and the UK, however, the EMTR for new equity is lower. In Germany this can be explained by the split rate corporation tax system that is unique in Europe.³³ In the UK one half of the tax credit subject to a deduction of 5 p.c. of the dividend and half the tax credit is granted to US inbound (direct) investors according to the provisions of the US/ UK double tax treaty.³⁴ This subsidy qualifies for a relatively small repayment in the case of profit distribution.

Table 9:
Statutory tax rate on profits and EMTR for retained earnings in the EU-member states - level of subsidiary -

Country	Statutory tax rate on retained earnings	EMTR for retained earnings	Statutory tax rate on distributed profits	EMTR for distributed profits
Austria	34.00	38.03	37.30	41.13
Belgium	40.17	37.86	43.16	40.97
Denmark	34.00	34.47	37.30	37.74
Finland	28.00	27.82	31.60	31.43
France	40.00	51.02	43.00	53.47
Germany 1998	56.70	54.21	46.85	43.80
Germany 1999	52.35	49.90	46.70	43.96
Germany reform	35.00	34.05	38.25	37.35
Greece	35.00	27.25	35.00	27.25
Ireland	28.00	29.21	28.00	29.21
Italy	41.25	27.29	44.19	30.93
Luxembourg	37.45	38.05	40.58	41.15
Netherlands	35.00	35.19	38.25	38.43
Portugal	37.40	35.76	40.53	38.97
Spain	44.75	43.28	50.27	48.96
Sweden	28.00	26.98	31.60	30.63
United Kingdom	30.00	31.77	29.81	31.58

From the point of view of the subsidiary, debt financing is treated far most generously, resulting in an EU-average EMTR of about 1.5 p.c. only. If interest payments were fully deductible one would

³² See INTERNATIONAL BUREAU OF FISCAL DOCUMENTATION (1999), for the withholding taxes.

³³ See JACOBS (1999b), p. 265-268, for an overview of the European corporation tax systems.

³⁴ See GAMMIE (1998), p. 433-435 for details.

expect an EMTR for debt equal to zero. However, limitation of full interest deduction outside the scope of thin capitalization rules (e.g. trade tax in Germany and Spain) and/ or the levy of high non-profit taxes (e.g. France) can result in a positive EMTR whereas no limitation of interest deduction combined with very generous rules for profit computation result in negative EMTR expressing a subsidy of debt-financed investment (e.g. above all Greece).

Turning to the level of the *US parent* we see from the final column in table 7 that the average EMTR is rising from 23 p.c. to about 34 p.c. French subsidiaries bear the highest overall EMTR (48 p.c.) while overall EMTR below 30 p.c. exist for Greek and Italian subsidiaries. The spread of the EMTR amounts to 19 percentage points and is lower than at the level of the subsidiaries (27 percentage points). Explanation is given by the fact that all returns from investment are taxable at the level of the US parent.

Profit retention in the subsidiary bears the highest EMTR for investment in all EU-member states because of full taxation of capital gains upon the disposal of shares in the USA. This results in a double taxation of the retained earnings.

Above all, the decrease of the spread of the overall EMTR can be explained by the US taxation of foreign dividends. Due to the indirect foreign tax credit these dividends are taxed at least with the US corporation tax rate. Therefore, distributed profits in the case of equity financing and interest income in the case of debt financing should in principle bear the same tax burden. However, the results in table 7 show that average EMTR for new equity is higher than for debt financing. The reason is the limitation of the indirect foreign tax credit to the US corporation tax on the grossed-up dividend. Consequently, in the case of excess foreign tax credit the higher tax level of the country of residence of the subsidiary becomes relevant. On the other hand, countries that have compared with the US corporation tax rate a lower EMTR on distributed profits (e.g. new equity) lose part of their advantage relative to other countries as the higher US tax rate is relevant (e.g. Finland, Greece, Ireland, Italy, Sweden, and the UK). But EMTR for new equity and debt at the level of the US parent is only equal for subsidiaries in those countries with lower EMTR that do not tax either new equity nor debt preferentially (e.g. Finland, Ireland, and Sweden).

Finally, looking at table 8 which shows the EMTR for the overall level, we see from the final column that the average overall EMTR is about 64 p.c. and the spread is decreasing to 13 percentage points. France still is the country with the highest EMTR (72 p.c.) whereas Greece is the country with the lowest EMTR (59 p.c.). The average numbers in the last three rows of table 8 make clear that except for German, Italian and UK subsidiaries debt financing of foreign subsidiaries is in principle also more tax efficient than equity financing from the point of view of the US shareholders. Profit retention bears the highest overall EMTR. Considering the tax optimal financing of a US parent through its domestic shareholders debt financing is best and new equity financing worst.

After all, assessing the attractiveness of Germany as a business location for US multinationals in the European Union, we can see for all three levels (e.g. subsidiary, US parent, and US shareholder) that Germany stands on 13th position in 1998 and 1999. It would move to 12th position if the reform took place. Although this is only an improvement by one position in the country ranking, overall EMTR for investment in a German subsidiary would be very close to average. Thus we can conclude that on the one hand, the reform would improve the competitiveness of Germany significantly. On the other hand, however, Germany would not become a tax haven at all (see figures 5-7).

Figure 5: Overall EMTR with a 10 p.c. pre-tax real return assuming typical investment and financing mix
- level of subsidiary (see table 6 for the numbers) -

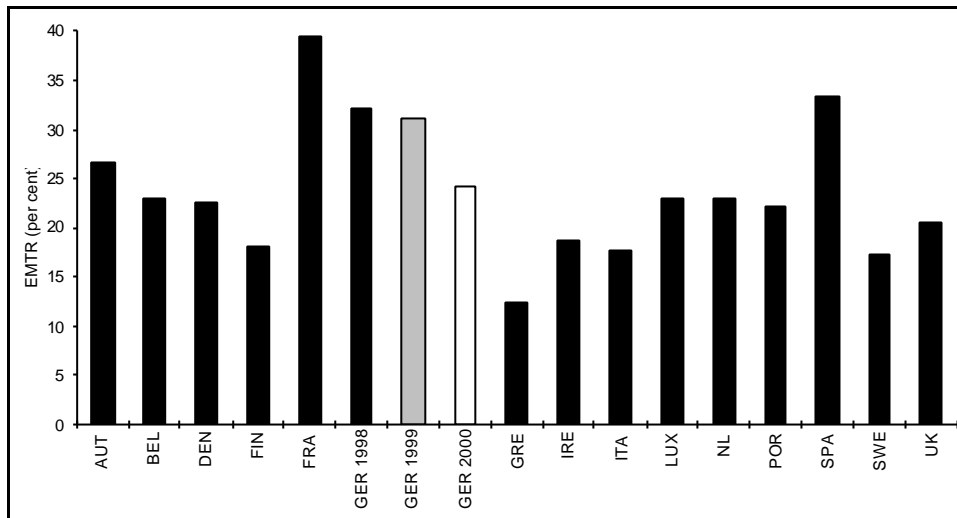


Figure 6: Overall EMTR with a 10 p.c. pre-tax real return assuming typical investment and financing mix
- level of US parent (see table 7 for the numbers) -

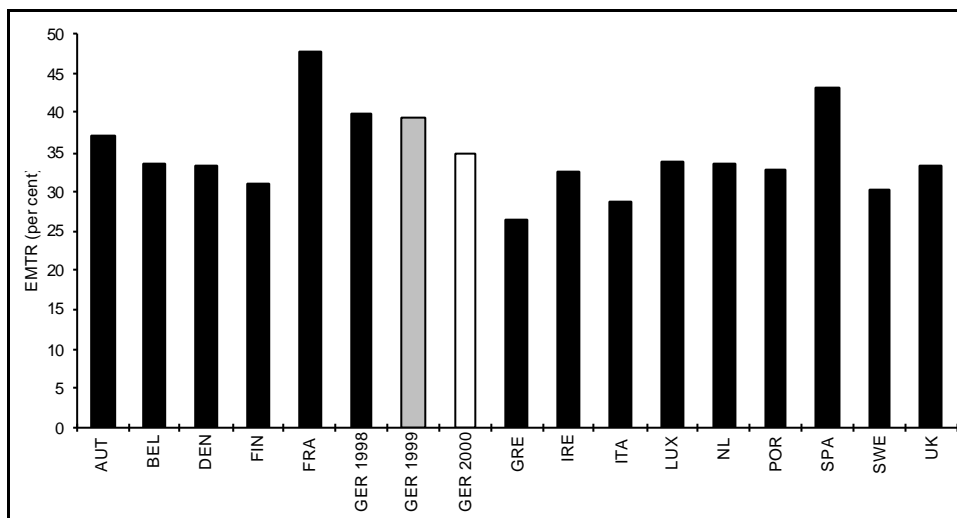
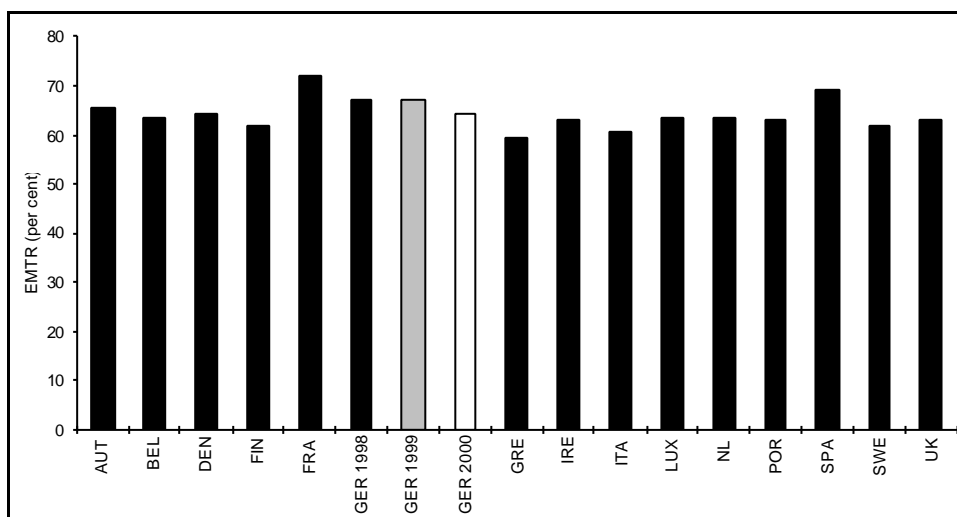


Figure 7: Overall EMTR with a 10 p.c. pre-tax real return assuming typical investment and financing mix
- level of US shareholder (see table 8 for the numbers) -



5 Conclusion

In this study we wanted to assess the attractiveness of Germany compared to the other EU-member states as a business location for US multinational investors. In order to do this we had to analyze the effective tax burdens for the level of the subsidiary, the US parent, and the US shareholders separately.

The calculation of effective marginal tax rates (EMTR) was based on the commonly used approach of King and Fullerton which was extended in certain aspects. We referred to a typical manufacturing company which is characterised by a particular combination of investments and forms of finance. We considered five different types of investment: intangibles, industrial buildings, machinery, financial assets and inventories. The financing policy considered three sources of finance: new equity capital, retained earnings, and debt.

The calculations took into account the most relevant tax provisions. Relating to company taxation, we considered the corporation tax systems, other (local) profit taxes and non-profit taxes, the tax rates, and the most relevant aspects of the tax base (e.g. depreciation rules and valuation of inventories). Moreover, the treatment of different types of investment income was taken into account (e.g. dividends, interest income and capital gains).

The results considering the *level of the subsidiaries* have shown that there is a great variation among the EMTR in the EU-member states. For our manufacturing company EMTR range from 12.36 (Greece) to 39.32 p.c. (France). The ranking of the countries from the highest to the lowest EMTR above all is influenced by differences between the (effective) rates of corporation tax (including local profit taxes and surcharges). However, on average there is only a minor impact of the tax base (i.e. rules for computing taxable income).

The analysis referring to the *level of the US parent and of the US shareholders* has shown, that differences between the effective tax burden in the EU-member states can distort decisions of a US multinational company with respect to the cross-border financing and location of investment within the EU. In general those countries with low national EMTR are more attractive as business location than countries with higher national EMTR.

Considering the source of finance of the subsidiary, debt financing is in the majority of cases most efficient whereas profit retention in the subsidiary is due to taxation of capital gains in the US indeed the worst tax strategy.

With respect to the present tax law, *Germany* stands only on 13th position in the country ranking of the EMTR. If the reform proposals for the year 2000 or later were carried out (e.g. reduction of statutory tax rate on profits to 35 p.c. and cut back of depreciation allowances) Germany would improve its position in the country ranking and range close to the average EMTR of all EU-member states. Moreover, the reform proposals are likely to have an impact both on investment patterns (e.g. deterioration of depreciable assets) and financing decisions (e.g. new equity would then be more tax efficient than debt financing) of US parents in Germany.

References

- AUERBACH, ALAN J. (1990), Comment on A. LANS BOVENBERG ET. AL., in: Taxation in the Global Economy, edited by RAZIN, ASSAF and SLEMROD, JOEL, Chicago, 325-328.
- BRÜHLER EMPFEHLUNGEN ZUR REFORM DER UNTERNEHMENSBESTEUERUNG (1999), Bericht der Kommission zur Reform der Unternehmensbesteuerung eingesetzt vom Bundesminister der Finanzen, Bonn.
- CARON & STEVENS / BAKER & MCKENZIE (1999), Survey of the Effective Tax Burden in the European Union, Amsterdam (<http://www.minfin.nl/nieuws/nota-notitie/AFP99-102.DOC>).
- CHENNELLS, LUCY, GRIFFITH, RACHEL (1997), Taxing Profits in a Changing World, The Institute for Fiscal Studies, London.
- CLAASSEN, FRANK (1994), Steuerbelastung internationaler Investitionen, Hamburg.
- COMMISSION OF THE EUROPEAN COMMUNITIES (1992), Report of the Committee of Independent Experts on Company Taxation, Brussels, Luxembourg.
- DEBATIN, HELMUT, ENDRES, DIETER (1990), The New US/ German Double Tax Treaty, München.
- DEUTSCHE BUNDESBANK (1997), Verhältniszahlen aus den Jahresabschlüssen westdeutscher Kapitalgesellschaften von 1987 bis 1995, Frankfurt.
- DEUTSCHE BUNDESBANK (1998), Statistischer Teil, Monatsbericht 9, 7.
- DEUTSCHE BUNDESBANK (1999), Kapitalverflechtung mit dem Ausland, Statistische Sonderveröffentlichung 10, Frankfurt.
- ENDRES, DIETER, DITSCH, STEFAN (1999), German Corporate Tax Planning, International Tax Journal, Winter, 16-99.
- ENDRES, DIETER, SPENGLER, CHRISTOPH (1997), Steuerstrukturen in Deutschland aus Sicht eines US-Investors, in: BURMESTER, GABRIELE, ENDRES, DIETER (Ed.), Festschrift für Helmut Debatin, München, p. 81-106.
- FULLERTON, DON (1984), Which Effective Tax Rate?, National Tax Journal, 23-41.
- FULLERTON, DON (1986), The Use of Effective Tax Rates in Tax Policy, National Tax Journal, 285-292.
- GAMMIE, MALCOLM (1998), UK Imputation, Past, Present and Future, IBFD Bulletin, 429-439.
- GRAVELLE, JANE G. (1985), „Which Effective Tax Rate?“ A Comment and Extension, National Tax Journal, 103-108.
- HEY, JOHANNA (1999), Die Brühler Empfehlungen zur Reform der Unternehmensbesteuerung, Betriebs-Berater, 1192-1198.
- INTERNATIONAL BUREAU OF FISCAL DOCUMENTATION (1999), European Tax Handbook 1999, Amsterdam.
- JACOBS, OTTO H. (1999a), Internationale Unternehmensbesteuerung, 4th ed., München.
- JACOBS, OTTO H. (1999b), Corporation Income Tax Systems in the European Union - An Analysis of their Effects on Competition and Reform Proposals, Intertax, 264-278.
- KING, MERVYN A., FULLERTON, DON (1984), The Taxation of Income from Capital, Chicago.
- LEIBFRITZ, WILLI (1989), Taxation of Capital Income in the Federal Republic of Germany, in: FUNKE, MICHAEL (Ed.), Factors in Business Management, Berlin, 148-172.
- MENCK, THOMAS (1999), Internationale Fragen der Unternehmenssteuerreform - Zu Aspekten des Brühler Konzepts, Internationale Wirtschafts-Briefe, Nr. 12 Aktuell vom 23.6.1999, 561-563.
- OECD (1991), Taxing Profits in a Global Economy, Domestic and International Issues, Paris.
- OECD (1999), Corporate Tax Burdens: Alternative Measures, Paper Prepared by the Fiscal Affairs

Secretariat, OECD for the Meeting with Members of the German Bundestag, 23 June 1999, Bonn.

- SCHIFFERS, JOACHIM (1999), Unternehmenssteuerreform - Überlegungen zu den „Brühler Empfehlungen“, GmbHRundschau, 741-747
- SCHNEIDER, DIETER (1992), Investition, Finanzierung und Besteuerung, 7th ed., Wiesbaden.
- SINN, HANS-WERNER, LEIBFRITZ, WILLI, WEICHENRIEDER, ALFONS J. (1999), ifo Vorschlag zur Steuerreform, ifo Schnelldienst 18, 3-18.
- SPENGLER, CHRISTOPH (1994), Innovationsförderung und Besteuerung, ZEW-Discussionpaper Nr. 94-10, Mannheim.
- SPENGLER, CHRISTOPH, ECKERLE, TOBIAS H. (1999), Debate on Effective Tax Burden of Corporations in Europe, ZEW news (English Ed.) No. 3, Mannheim, 1-4.
- SPENGLER, CHRISTOPH, VITUSCHEK, MICHAEL (1999), Besteuerung der Rechtsformen nach den Empfehlungen der Kommission zur Reform der Unternehmensbesteuerung, Forschungsbericht Nr. 99-04, Universität Mannheim, Mannheim.
- WAGNER, FRANZ W., BAUER, THOMAS B., WADEN, DOMINIC (1999), Was ist von den "Brühler Empfehlungen" für die Investitionspolitik, die Finanzierungsstrukturen und die Neugestaltung von Gesellschaftsverträgen der Unternehmen zu erwarten?, Betriebs-Berater, 1296-1300.
- WAGNER, FRANZ W. (1999), Die Integration einer Abgeltungssteuer in das Steuersystem - Ökonomische Analyse der Kapitaleinkommensbesteuerung in Deutschland und der EU, Der Betrieb, 1520-1528.