AN INTERNATIONAL COMPARISON OF EFFECTIVE MARGINAL TAXES ON LABOUR USE

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ABSTRACT

The purpose of this paper is to compare the different levels of tax rates on the use of the labour force in a range of OECD countries, using the methodology of effective marginal tax rates. Results for the United Kingdom, Australia, Sweden, France, Germany, Italy, Portugal, Japan, the United States and Spain are provided for 1983-2001 period.

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Introduction

Unemployment in developed countries and its differences in terms of levels and distribution (sex, age, educational level, etc.) have traditionally been of great interest for economists. There is an extensive literature devoted to the analysis of the impact of taxation as a cost on employment with regard to marginal decisions on labour supply and labour demand. Theoretically, one of the methodological approaches allowing us to deal with this issue is the concept of *effective taxation*. Although this methodology has been extensively used to analyse the impact of the tax variable on physical or financial capital, its application to the use of labour as a production factor has been rather limited[1]. Among the few studies where the effective marginal tax rate is applied to the use of labour we may cite Mckee et al (1986), who make a comparison among the OECD member countries from 1981 to 1983, and González-Páramo and Sanz (1994) who extended the analysis up to 1992, making a special emphasis on Spain. In addition, effective average rates for a large number of EU member and non-member countries are estimated in a study of the European Commission (see Martínez-Mongay, 2000).

Our purpose in this paper is to update these studies, introducing some small changes in the methodology. Our choice of countries – the UK, Sweden, France, Germany, Italy, Portugal, Japan, the USA, Spain and Australia – comprises European and non-European countries. In the first group we have considered a representative sample of Mediterranean, North, Central and East European countries while in the second group the two most developed countries have been chosen: Japan and the USA. The computation period ranges from 1983 to 2001.

[1] For a generic review of the literature on effective marginal taxation see Paredes (1992), Sanz (1994) and Romero (1999). For applications of effective marginal tax rates on financial assets see González-Páramo and Badenes (2000). For applications of effective marginal tax rates on investment on property assets see Sanz (2000).

The data used have been drawn from the Spanish National Accounts and the following OECD publications: *The tax benefit position of production workers*, *The tax benefit position of employees* and *Taxing wages.* These three publications provide us with special information on taxation and transfers regarding the representative average worker in the different OECD countries and with a computation of the different levels of effective average tax rates. Although the base information is the same as in the three studies above , effective taxation of labour use is computed in marginal terms in this paper.

Our paper is arranged as follows. In Section I, the methodology of the effective marginal tax rate is summarised and the main underlying assumptions are listed. In Section II the information used is presented and the different components of the effective marginal rate are computed and analysed. Section III summarises the main results. Section IV concludes.

I. TAXES AND THE USE OF THE LABOUR FORCE

I.1. Effective marginal tax rate on labour use

In the absence of taxes, the number of hours which maximises business profit results from making real wages equal to the marginal productivity of an extra hour of work. Let Π be the business profit denoted by:

$$\Pi = pF(K,L) - cK - wL \qquad (1)$$

where p is the price of *output y* and K, L, c and w are respectively capital and labour stock and the costs of capital and labour. The amount of this latter input which maximised equation (1) is determined solving the following first order condition:

$$\frac{\partial F}{\partial L} = \frac{w}{p} \qquad (2)$$

in such a way that, in the absence of taxes, labour demand L_D depends on the real wage:

$$L_D = L_D\left(\frac{w}{p}\right);\ L'_D < 0 \qquad (3)$$

If we consider the impact on the above-mentioned demand function and we take into account that the employer social security contributions rate t_{WE} increases the cost of labour and t_{IS} and D_{IS} denote respectively the corporation tax rate and the percentage of social security contributions deducted from this tax, then nominal gross wage turns out to be $\left(w\left(1+t_{WE}\left(1-t_{IS}D_{IS}\right)\right)\right)$, in such a way that the labour demand, given these taxes, becomes:

$$L_D^T = L_D^T\left(\frac{w\left(1+t_{WE}\left(1-t_{IS}D_{IS}\right)\right)}{p}\right) \qquad (4)$$

Differing here from Mckee et al (1986) and González-Páramo and Sanz (1994), gross wages of employers' social contributions are taken into account. The purpose is to estimate the total tax wedge between the gross total cost of labour for the employer and the net wage received by the employee.

In a static non-behavioural framework and assuming several simplifying assumptions, which will be explained below, the amount of goods and services demanded by wage earners depends on labour income $pC = wL_S$, where C is the level of consumption and L_S the supply of labour hours. When taxes are included in the analysis, the budget restriction of the consumer per unit of marginal consumption is:

$$p(1+t_C) = [w(1-T_L)]L_S^T \tag{5}$$

where T_L is the percentage of total taxes borne by labour supply. Under this scheme, the wage net of taxes that will be relevant in determining this supply is:

$$L_S = L_S\left[\frac{w(1-T_L)}{p(1+t_C)}\right] \tag{6}$$

The difference between the gross wage borne by labour demand (i.e. an employer) and the net wage actually received by an employee is called the *total tax wedge for labour,* which is expressed as follows:

$$C_L = \frac{w}{p}\left[t_{WE}(1-t_{IS}D_{IS}) + \frac{t_C}{1+t_C} + \frac{T_L}{1+t_C}\right] \tag{7}$$

The tax wedge as it appears in equation (7) is made up of three components: the net cost of social contributions paid by the employer, the consumption taxes borne by the worker as consumer and the net personal income tax borne by the worker as income taxpayer.

The effective marginal tax rate is computed as the ratio between the tax wedge and the real wage (Mckee, Visser and Saunders, 1986):

$$\tau_L = \frac{C}{w/p} = \left[\frac{t_{WE}(1-t_{IS}D_{IS})(1+t_C) + t_C + T_L}{1+t_C}\right] \tag{8}$$

The ratio of income taxes borne by the labour factor, T_L, is determined by taking into account the social contributions paid by the worker and the personal income tax:

$$T_L = t_{WA} + t_{IRPF} - t_{IRPF} \cdot D_{IRPF} \cdot t_{WA} \quad (9)$$

where t_{WA} stands for social contributions borne by wage earners, D_{IRPF} is the deduction in the personal income tax for social contributions charged to employees and finally, t_{IRPF} is the marginal tax rate which appears in the PIT tax schedule. As can be seen, the effective marginal tax rate is a synthetic measure which enables us to assess the amount of tax borne by an additional unit of labour factor entering the production process. This methodology has some characteristics that must be emphasised:

- 1. When a worker considers the possibility of supplying an additional hour of work, he takes into account the net marginal wage he earns and subsequently the tax he bears at the margin[2].

- 2. It is a synthetic measure which includes the different taxes borne by the labour factor as the personal income tax (PIT), and other taxes such as indirect taxes which levy consumption and social security contributions.

The effective marginal tax rate is a useful tool when assessing two important aspects for fiscal policy:

1. The incentive/disincentive effects of the fiscal system on employment marginal decisions.

[2] Though this is a widely held belief, there are studies highlighting that marginal tax rates are not the relevant tax rates when making decisions. Thus, for example, Bartolome (1995) concludes that a high proportion of the population takes economic decisions regarding the future based rather on the average tax than on the marginal one. Likewise, in Arrazola et al (2000) differences between legal tax rates and tax rates actually perceived are empirically tested.

2. The degree of potential neutrality in the design of the fiscal system in relation to the taxation of the different production factors. We must emphasise that economic neutrality will eventually depend on elasticities of labour supply and demand and elasticity of substitution between capital and labour. Nevertheless, the King-Fullerton methodology does not include these aspects in its computation.

I.2. The choice of assumptions

Applying and correctly interpreting effective marginal tax rates on labour use require knowledge of the simplifying assumptions we have made when constructing them:

- As shown in the following section, computations are made in relation to a representative average individual who works in the manufacturing sector and only receives labour income. In consequence, the results must be interpreted in terms of this representative individual[3].

- The approach adopted is a non-behavioural static one and defined under a partial equilibrium framework. This implies that in the face of a change in taxation (for instance, an increase in marginal rates of the PIT rate structure), what we are estimating is the effective marginal tax rate just after implementing the new measure, disregarding the eventual final effects on labour demand and supply which in turn will be determined by the elasticity of the labour demand and supply functions. Moreover, possible interactions with other markets are not taken into account such as, for example, the capital market which is relevant for decisions related to labour demand.

- The specification used does not consider who ultimately pays taxes. In other words, it does not take into account alternative tax incidence scenarios. This,

[3] A microdata analysis will enable us to study the distribution of the effective marginal tax rate taking into account individual characteristics related to population [Cf. For example, Hansen (2000)].

for instance, requires that we assume that social contributions paid by the employer are not shifted onto consumers and/or workers through prices and wages. On the contrary, they are going to be borne wholly by the employer.

- The role of the transfers received by workers is not considered. These transfers could have different effects on effective marginal tax rates (see Mckee et al (1986)).

- In equation (4) we assume that businesses obtain large enough profits to enable them to have their social contributions qualify for a deductible expenditure and thus reduce business income. Likewise, we assume that the individuals must assess their own income tax, reducing the cost of social contributions charged to them, through expenditure deductible from the tax base.

- Finally, on operational grounds, international comparison makes us overlook institutional aspects, such as the fact that there may be special tax regimes for social security contributions or for corporation tax.

II. Information sources and components of the effective marginal rate.

II.1. Reference Unit

The main difficulty when making international comparisons with a certain degree of homogeneity is defining a standard reference unit. This problem has been partially solved in the literature (Mckee et al, 1996; González-Páramo and Sanz, 1994), by making use of the OECD concept *average production worker in the manufacturing sector* (APW). In fact, the APW refers to a household consisting of a married couple with two children where only one spouse is a worker in the manufacturing sector, with his/her salary being the only source of income for the family.

The tax information used in the computations is derived from the sources of information summarised in tables 1 to 19 of the Appendix.

II.2. The PIT marginal tax rate

The allocation of marginal tax rates formally borne by the APW in terms of the PIT (personal income tax) in each country has been implemented on the basis of the above-mentioned information. The OECD assesses the tax base by computing gross earnings and deductible expenditure from their tax base[4]. Note that the tax base computed (at least taking the Spanish case as a reference) is not the actual tax but only an approximation to the tax base – as it exclusively considers earned income. Apart from the previous assumptions, the computation of effective marginal rates has been performed taking into account the following aspects:

1. Institutional aspects with respect to differences in the definition of the taxpayer unit, as well as the different tax schedules for single and married persons. In Germany, France and Portugal (since 1989), PIT regulations consider different income averaging systems – the *quotient* in France[5] and the *splitting* in the two other countries[6]. In the USA, Spain (between 1992 and 1998) and Portugal (until 1988) there was a specific tax schedule for married

[4] Health insurance – public or private – and unemployment insurance paid by the employer are included in a worker's gross earnings.

[5] French tax regulations establish that a family (household) income Y_F (the fiscal unit) is divided by a family ratio (made up of the sum of one share per spouse and a half per child included in the family unit). It may be proved that a household's marginal tax rate $t_F^{'}$ is equal to a marginal tax rate borne by each share $t_P^{'}$:

$$t_F^{'} = \frac{dT}{dY} = \frac{\Delta T}{1} = \left[\frac{Y_F + 1}{3} t_P^{'}\right] 3 - \left[\frac{Y_F}{3} t_P^{'}\right] 3 = t_P^{'}$$

[6] In the case of Germany, the marginal tax rate borne by a family unit is obtained by directly applying the algebraic expression of personal income tax regulations. Though German tax law permits the option of

couples[7]. Finally, a spouse's income is taxed separately in all the other countries studied.

2. In Sweden[8] (until 1990), Japan[9] and the USA[10] personal income is taxed at a national level (a federal tax in the USA) as well as with a local tax. In the first two countries, the personal income tax rate is the sum of rates in both taxes. USA non - federal income taxes are deductible when determining the taxable income in the federal tax. In Sweden only a local tax has been levied on personal income since 1991, when the state tax disappeared.

Graphic I shows the effects of the marginal tax rate in the income tax levied on the APW in the different countries studied. Three formal tax levels are identified: in the upper band we find Australia exceeding 40 per cent in some periods, Japan – USA at the bottom, and European countries concentrated within a 21-27 per cent range.

separate taxation for married couples, it has been proved that PIT marginal tax rate borne by a household is lower than that of individual taxation (i.e. a second income earner does not pay any tax).

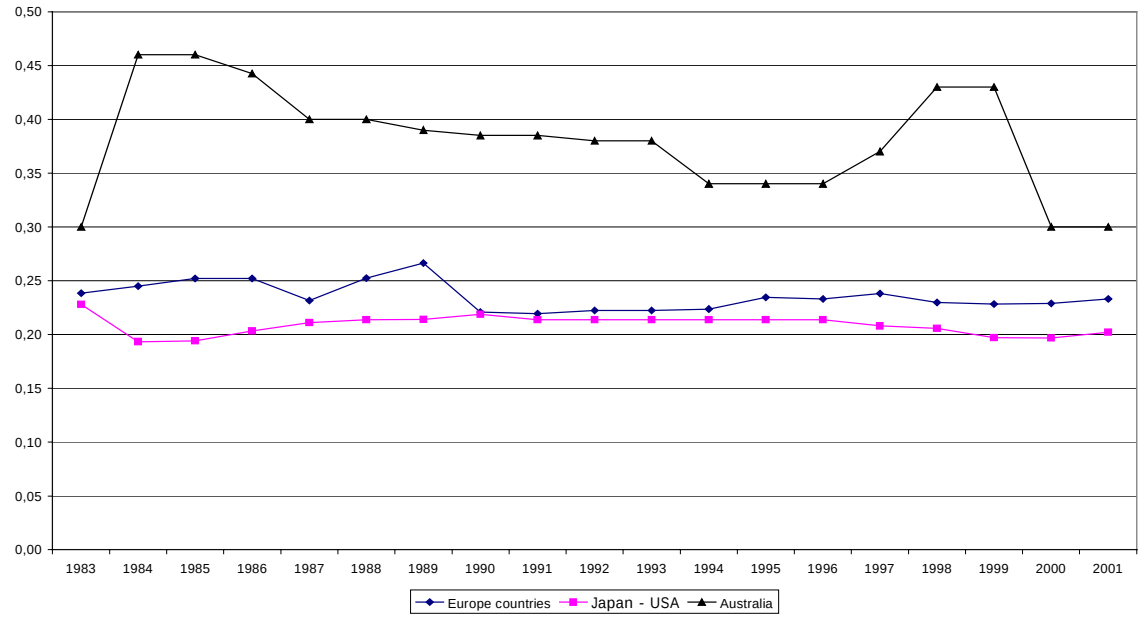
[7] In all these countries, married couples have chosen joint taxation as it is the most favourable tax option.

[8] In Sweden there were two income taxes till 1989, the former levied by the central government and the latter by local governments. Given the difficulties in calculating the marginal tax rates of local income taxes, we decided to take the average tax rate which is available in the above-mentioned OECD statistics and in *International Tax Summaries* as a reference. Since 1990 there has only been a local tax.

[9] The Japanese tax system, also has income taxes levied by prefectures and local governments (the tax base being the one the central government applies). In both cases, marginal rates are applied.

[10] In addition to the federal income tax, the District of Columbia and 44 out of the total 50 states include some types of income tax in their fiscal systems. In relation to the latter, effective average tax rate has been computed on the basis of information from the OECD statistics mentioned above.

Graphic I
The personal income marginal tax rate
1983 - 2001



Source: tables 1 to 19 of the Appendix

II.3. Social Security Contributions

Social security contributions are levied on employees and employers in all countries except in Sweden and Australia, where were been borne by the latter until 1992. Nevertheless, the distribution is different between countries: in France, Italy, Portugal and Spain employers bear most of the burden, while in Germany, Japan, the UK and the USA the distribution is more evenly balanced.

In terms of the computation of the effective marginal tax rate, social contributions paid by employers are corporation tax deductible. Social contributions charged to employees are generally considered a deductible expenditure when computing the tax base in the PIT though there are discrepancies between the different countries and the UK has been an exception for several years.

The average differences in the tax rates borne by an employer and an employee in 1981 and 1998 are shown in Table I. The highest increases in social contributions borne by the labour factor have taken place in Germany,

Japan and Sweden, while in Italy social contributions have fallen as a consequence of the reduction in social contributions charged to employers. As can be seen in the table, in the Spanish case changes have been barely noticeable.

Table I
Social Contributions borne by the Salary of the APW
(Differences in absolute values)

	France	Germany	Italy	Japan	Portugal	Spain	Sweden	UK	USA	Australia	Average
Employee 1983-2001	0.00	0.04	0.00	0.17	0.00	0.00	0.07	0.01	0.01	0.00	0.03
Employer 1983-2001	-0.08	0.02	-0.11	0.07	0.02	0.00	0.02	0.01	-0.01	0.02	0.00
Total 1983-2001	-0.08	0.06	-0.11	0.24	0.00	0.00	0.09	0.02	0.00	0.02	0.03

Source: tables 1 to 19 of Appendix.

II.4. Corporation Tax

The corporation tax rate is included in the expression of the effective marginal tax rate through fiscal saving derived from the deduction of employers' contributions. The effective cost per monetary unit of social security contributions is $(t_{WE}(1-t_{IS}D_{IS}))$, where $t_{WE}t_{IS}D_{IS}$ is the tax saving. The marginal effect of changes in the corporation tax rate on the marginal effective tax rate is:

$$\frac{\partial \tau_L}{\partial t_{IS}} = [-t_{WE}D_{IS}] < 0 \qquad (11)$$

indicating that, *ceteris paribus*, the higher the corporation tax rate and the higher tax saving, the smaller the effective marginal tax rate will be. In relation to the information on the corporation tax rate levied by each country, it must be considered that:

- The corporation tax rate applied to dividends is different from the one applied to retained earnings in Germany, France (until 1992) and Japan (until 1989).

- In Portugal between 1983 and 1988 a surtax was levied on retained earnings in addition to the state basic corporation tax[11]. The corporation tax rate we have used in this study is the sum of both tax rates.

- In Sweden (until 1984), Italy and Japan there are both a national tax and a local tax on business profits[12], the latter being considered a deductible expenditure from the tax base of the former. In the United States a federal[13] corporate tax coexists with several state and local taxes, the average tax rate of the latter being 7.4 per cent. These state and local taxes are deductible from the tax base in the federal tax. Portuguese tax law established a local tax in 1989 which increased the state tax rate by 10 per cent, but is not considered deductible when assessing the tax base of the state tax.

- Finally, institutional aspects regarding the different tax treatment for corporations depending on their characteristics, activity or dimensions have not been taken into account.

Corporation tax rates vary significantly from country to country. Dispersion was especially important in the eighties. Nonetheless they show a clearly declining common trend in the nineties as a result of the tax reforms that were undertaken in this tax.

Apart from the countries with stable tax rates -Spain and Japan- this rate has decreased from 1983 to 2001 in the other countries (particularly, in Sweden

[11] For instance, in countries such as Germany and Italy a tax deduction is limited by a maximum income taper.
[12] For simplicity, we have used the maximum marginal tax rate of the corporation tax schedule.
[13] The local tax rate is around 28%.

and the UK with decreases larger than 20 per cent in 1989 – 1991 and 1983 – 1986 respectively). This has been enhanced by an increase in effective marginal tax rates on labour use.

II.5. Consumption taxes

The marginal effect of the consumption tax rate on the effective marginal rate on labour is:

$$\frac{\partial \tau_L}{\partial t_C} = \left[\frac{1 - T_L}{(1 + t_C)^2} \right] > 0 \qquad (12)$$

This expression is positive, as seems reasonable, if $0 < T_L < 1$. In such a case, *ceteris paribus,* in those countries where taxation on goods and services consumption is low, a smaller effective marginal taxation on labour is being favoured.

In this study we apply an average tax rate derived from the national accounts data departing from the expression used in Mckee (1986) and González-Páramo and Sanz (1994):

$$t_C = \frac{IIBS}{C_P + C_{PB} - SS - IIBS} \qquad (13)$$

where IIBS denotes the proceeds of indirect taxes borne by goods and services, C_p is total private consumption, C_{PB} is total public consumption and SS are wages and salaries paid by the public sector.[14]

[14] The average tax rate as defined in equation (13) relates the collection of indirect taxes to their tax bases. The denominator is the sum of private and public consumption, minus indirect taxes in order to obtain net consumption, minus wages and salaries of public employees who do not bear such taxes although they are included in public expenditure.

Average tax rates on consumption range from 20 per cent to 25 per cent in European countries for the average period under study. The USA and Japan have the lowest level with a 7 per cent average consumption tax.

III. Effective marginal taxation on labour use

Table II summarises the effective marginal tax rate derived from expression (8). Tables 1 to 17 in the Appendix provide information on all the components that were used to construct an effective marginal tax rate. The conclusions are as follows:

- For the period of time under studyeffective marginal tax rates are, on average, lower in non-European countries. The average of all effective marginal tax rates is 0.6 while in Japan and the United States it is 0.4. Nevertheless, among non-European countries it is easy to differentiate those located in the 0.5–0.6 range – the UK, Portugal, Spain and Germany – from those with effective marginal tax rates higher than 0.6 – Italy, France and Sweden.

- The effective marginal tax rate borne by the Spanish APW (58 per cent) is very similar to the average observed in all the countries under study.

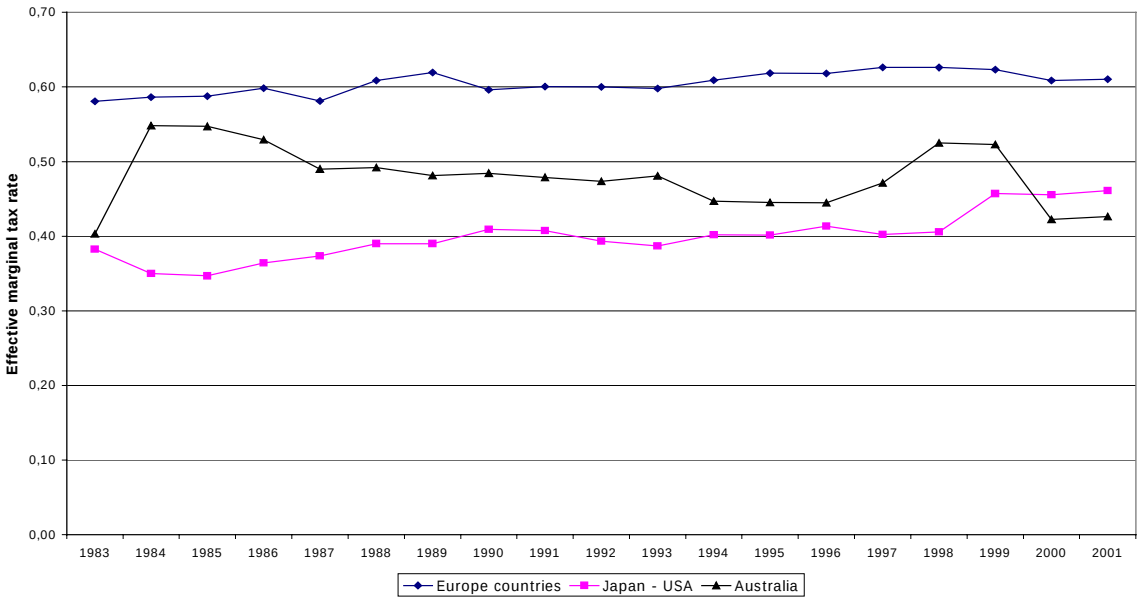
Table II
Effective marginal tax rate on labour use
1983 - 2001

	France	Germany	Italy	Japan	Portugal	Spain	Sweden	UK	USA	Australia
1983	0.63	0.54	0.71	0.33	0.40	0.52	0.74	0.52	0.43	0.40
1984	0.60	0.54	0.66	0.34	0.42	0.54	0.82	0.53	0.36	0.55
1985	0.60	0.53	0.65	0.33	0.40	0.64	0.76	0.53	0.36	0.55
1986	0.62	0.54	0.65	0.37	0.44	0.66	0.76	0.53	0.35	0.53
1987	0.61	0.54	0.65	0.35	0.44	0.56	0.76	0.51	0.40	0.49
1988	0.63	0.54	0.66	0.36	0.45	0.57	0.89	0.51	0.42	0.49
1989	0.65	0.55	0.65	0.37	0.54	0.59	0.88	0.48	0.41	0.41
1990	0.62	0.56	0.69	0.40	0.53	0.59	0.70	0.48	0.42	0.48
1991	0.61	0.57	0.70	0.40	0.52	0.59	0.73	0.48	0.42	0.48
1992	0.63	0.56	0.71	0.37	0.54	0.58	0.69	0.49	0.42	0.47
1993	0.65	0.56	0.71	0.37	0.53	0.58	0.67	0.48	0.41	0.48
1994	0.66	0.60	0.72	0.39	0.54	0.59	0.68	0.49	0.42	0.45
1995	0.65	0.59	0.76	0.39	0.54	0.58	0.69	0.51	0.42	0.45
1996	0.66	0.64	0.76	0.41	0.53	0.54	0.71	0.48	0.42	0.44
1997	0.66	0.65	0.76	0.40	0.54	0.58	0.71	0.48	0.41	0.47
1998	0.65	0.65	0.80	0.41	0.54	0.55	0.71	0.48	0.40	0.53
1999	0.62	0.66	0.78	0.55	0.54	0.56	0.71	0.49	0.36	0.52
2000	0.61	0.65	0.70	0.55	0.55	0.56	0.71	0.48	0.36	0.42
2001	0.60	0.70	0.68	0.55	0.55	0.55	0.71	0.48	0.37	0.43
Average value										
Average 1983–85	0.61	0.54	0.67	0.34	0.41	0.57	0.78	0.52	0.38	0.50
Average 1986–90	0.63	0.54	0.66	0.37	0.48	0.59	0.80	0.50	0.40	0.48
Average 1991– 95	0.64	0.57	0.72	0.38	0.53	0.58	0.69	0.49	0.42	0.47
Average 1996-2001	0.63	0.66	0.75	0.48	0.54	0.56	0.71	0.48	0.39	0.47

Source: tables 1 to 19 of Appendix

- Graphic II shows the marginal effective tax rate on labour and denotes an increasing trend in most countries except Sweden and the UK (see table II). Since 1988, in the EU member countries effective marginal taxation appears to have stayed above 0.6 while in the same period it has been higher than 0.4 in the USA–Japan. With regard to Australia, the level of effective marginal taxation fluctuates from 0.42 to 0.56.

Graphic II
Effective marginal tax rate for an APW
1983 - 2001



Source: tables 1 to 19 of Appendix

For a thorough analysis of the causes of the above-mentioned changes, graph III shows, following equation (14), the weight of the different components of the effective marginal tax rate during the time period under analysis:

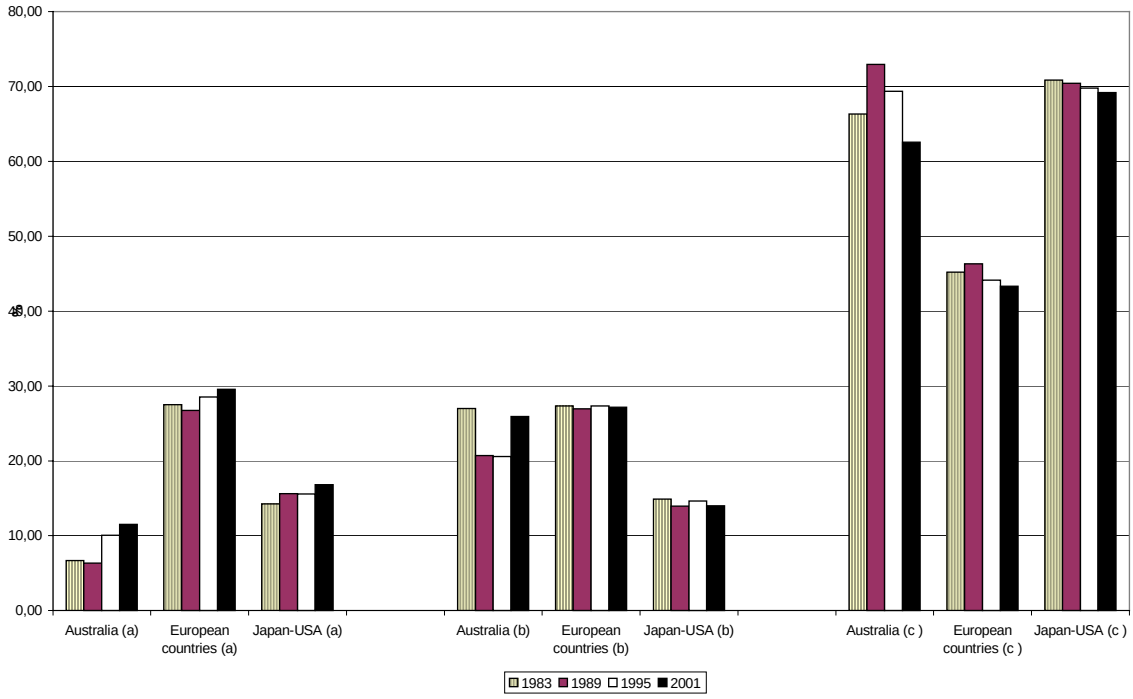
$$\tau_L = \left[t_{WE}\left(1 - t_{IS} D_{IS}\right) + \frac{t_C}{1+t_C} + \frac{T_L}{1+t_C} \right] \qquad (14)$$

The net cost of employers' social security contributions is the first term on the right side of the equation (14). As can be seen in the graph, the weight of this component is very important for the European countries as it is more than 25 per cent, higher than the Japan–USA average and much higher than Australia where this component is less than 11 per cent in spite of its upward trend.

Consumption taxation, the second component of effective marginal tax rate in European countries, is very different from the group made up of Japan and the United States. In the former case, it accounts for approximately 30 per cent while in the latter only 15 per cent. Australia approximates to European countries with 25 per cent in 2001.

Finally, the third component is the PIT cost imposed on wage earner income. As may be seen, it is the most important of all components studied, representing around 70 per cent in Japan and the United States and 65 per cent in Australia while in European countries it is approximately 45 per cent.

Graphic III
The weight of components of the effective marginal tax rate



Source: tables 1 to 19 of Appendix

Notes: (a) The net cost of employers social security contributions; (b) Consumption taxation; (c) The net cost imposed on labour use as a percentage of the effective marginal tax rate, respectively .

Summing up, the weight of the three components in the European Union is around 25 per cent, 30 per cent and 45 per cent respectively. On the

contrary, in the United States and Japan it is 15 per cent, 15 per cent and 70 per cent. That is, while in the EU it may be said there is a closely balanced distribution between the different components, in the United States and Japan there is a clear predominance of the third component. Australia is between the European countries and the Japan–USA average, the weight of the three components being 10 per cent, 25 per cent and 60 per cent.

The trend towards an increase in the effective marginal taxation seems to result from the growing importance of employer contributions both in European countries and in the United States and Japan.

IV. CONCLUDING REMARKS

In this study effective marginal tax rates have been estimated in several OECD countries. The effective marginal tax rate is the sum of three components: the net cost of employer social security contributions, consumption taxes and the net fiscal cost borne by labour income.

Among the most relevant characteristics of the structure and development of effective marginal taxation we should emphasise the following:

- The effective marginal tax rate on labour has been maintained in the period of time analysed at between 0.40 and 0.52 in Australia. In the case of the European countries under study it has stayed around 0.6 and in Japan between 0.35 and 0.46. These levels of effective marginal rates are close to the average in all countries considered in this study (55 per cent). With regard to the composition of the elements of the effective marginal tax rate, results show that: in relative terms employers' contributions in European countries have a greater importance than in Japan and the United States and Australia. Conversely, taxation on consumption in the Japan–USA average is lighter than in the average of European countries and Australia.

Finally taxation on labour income in Australia is similar to the Japan and the United States and much higher than the European average.

A simple and very useful methodology for our economic analysis has been used in the estimation of effective marginal tax rates. We must emphasise nevertheless that in spite of its name, the effective marginal taxation is useful when calculating potential taxation borne by an additional unit of labour at the margin. Among the various hypotheses, in its construction we must point out that there is neither tax shifting nor are there changes in the behaviour of economic agents. The potential of corporations to shift taxes and contributions will give rise to an increase in the final taxation borne by wage earners, thus modifying the weight of the components of the effective marginal tax rate. However our approach is static, this is why it disregards behavioural changes on labour supply and demand caused by taxation.

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APPENDIX

TABLE 1
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1983

Country	Marginal Income Tax Rate.	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes (DESI) Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.10	0.14	0.46	0.21	0.42 [1]	0.22	0.63
Germany	0.22	0.17	0.19	0.17	0.46 [2]	0.35	0.54
Italy	0.29	0.10	0.46	0.15	0.41 [3]	0.36	0.71
Japan	0.15 [4]	0.09	0.11	0.06	0.45 [5]	0.23	0.33
Portugal	0.04	0.11	0.22	0.22	0.52 [6]	0.15	0.40
Spain	0.20	0.06	0.31	0.10	0.33	0.25	0.52
Sweden	0.52 [7]	0.00	0.31	0.24	0.57 [7]	0.52	0.74
UK	0.30	0.09	0.10	0.19	0.50	0.36	0.52
USA	0.31 [9]	0.07	0.09	0.06	0.50 [10]	0.35	0.43
Australia	0.30	0.00	0.05	0.12	0.46	0.30	0.40

Notes:
(1) 34% on dividends and 50% on retained earnings; (2) 36% on dividends and 56% on retained earnings; (3) federal tax rate, 30% and local tax rate, 15%; (4) state tax rate, 10% and local tax rate, 5%; (5) 32% on dividends and 42% on retained earnings, there is also a local tax rate, 13,2%; (6) 40% on dividends plus 12% on retained earnings; (7) state tax rate, 23% and local tax rate, 29%; (8) state tax rate, 40% and local tax rate, 29%; (9) federal tax rate, 19.05% and local average tax rate, 14.30%; (10) federal tax rate, 46% and local average tax rate, 6%.

Source: *The Tax/Benefit Position of Production Workers* (several years); *International Tax Summaries (several years);* González-Páramo and Sanz (1994). *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 2
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1984

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.10	0.15	0.40	0.21	0.42 [1]	0.24	0.60
Germany	0.22	0.17	0.18	0.17	0.46 [2]	0.35	0.54
Italy	0.27	0.10	0.43	0.15	0.46 [3]	0.34	0.66
Japan	0.16 [4]	0.10	0.11	0.06	0.45 [5]	0.24	0.34
Portugal	0.04	0.12	0.25	0.21	0.52 [6]	0.15	0.42
Spain	0.22	0.06	0.31	0.11	0.35	0.27	0.54
Sweden	0.56 [7]	0.00	0.36	0.25	0.52 [8]	0.56	0.82
UK	0.30	0.09	0.10	0.20	0.45	0.36	0.53
USA	0.23 [9]	0.07	0.07	0.06	0.50 [10]	0.28	0.36
Australia	0.46	0.00	0.05	0.13	0.46	0.46	0.55

Notes:
(1) 34% on dividends and 50% on retained earnings; (2) 36% on dividends and 56% on retained earnings; (3) federal tax rate, 36% and local tax rate, 15%; (4) state tax rate, 10.5% and local tax rate, 5%; (5) 32% on dividends and 42% on retained earnings, there is also a local tax rate, 13,2%; (6) 40% on dividends plus 12% on retained earnings; (7) state tax rate, 26% and local tax rate, 30.3%; (8) state tax rate, 32% and local tax rate, 29%; (9) federal tax rate, 19.99% and local average tax rate, 13.69%; (10) federal tax rate, 46% and local average tax rate, 6.5%.

Source: *The Tax/Benefit Position of Production Workers* (several years); *International Tax Summaries (several years);* González-Páramo and Sanz (1994). *Revenue Statistics* (several years); *European Tax Handbook (several years)*

TABLE 3
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1985

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.10	0.15	0.40	0.22	0.42 [1]	0.24	0.60
Germany	0.22	0.17	0.17	0.16	0.46 [2]	0.35	0.53
Italy	0.27	0.09	0.43	0.14	0.46 [3]	0.33	0.65
Japan	0.16 [4]	0.09	0.11	0.06	0.45 [5]	0.23	0.33
Portugal	0.04	0.12	0.22	0.20	0.52 [6]	0.15	0.40
Spain	0.33	0.06	0.31	0.12	0.35	0.37	0.64
Sweden	0.50 [7]	0.00	0.31	0.27	0.52	0.50	0.76
UK	0.30	0.09	0.10	0.20	0.40	0.36	0.53
USA	0.23 [8]	0.07	0.06	0.06	0.50 [9]	0.29	0.36
Australia	0.46	0.00	0.05	0.13	0.46	0.46	0.55

Notes:
(1) 34% on dividends and 50% on retained earnings; (2) 36% on dividends and 56% on retained earnings; (3) federal tax rate, 36% and local tax rate, 15%; (4) state tax rate, 10.5% and local tax rate, 5%; (5) 32% on dividends and 42% on retained earnings, there is also a local tax rate, 13,2%; (6) 40% on dividends plus 12% on retained earnings; (7) state tax rate, 20% and local tax rate, 30.3%; (8) federal tax rate, 11.6% and local average tax rate, 13.67%; (9) federal tax rate, 46% and local average tax rate, 6.5%.

Source: *The Tax/Benefit Position of Production Workers* (several years); *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 4
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1986

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.10	0.16	0.40	0.21	0.40 [1]	0.24	0.62
Germany	0.22	0.17	0.17	0.16	0.46 [2]	0.35	0.54
Italy	0.27	0.09	0.43	0.16	0.46 [3]	0.33	0.65
Japan	0.18 [4]	0.11	0.12	0.05	0.45 [5]	0.27	0.37
Portugal	0.04	0.11	0.22	0.25	0.47 [6]	0.15	0.44
Spain	0.33	0.06	0.31	0.15	0.35	0.37	0.66
Sweden	0.50 [7]	0.00	0.31	0.27	0.52	0.50	0.76
UK	0.30	0.09	0.10	0.20	0.35	0.36	0.53
USA	0.23 [8]	0.07	0.06	0.06	0.50 [9]	0.28	0.35
Australia	0.44	0.00	0.05	0.12	0.46	0.44	0.53

Notes:
(1) 34% on dividends and 45% on retained earnings; (2) 36% on dividends and 56% on retained earnings; (3) federal tax rate, 36% and local tax rate, 16.20%; (4) state tax rate, 12% and local tax rate, 6%; (5) 32% on dividends and 42% on retained earnings, there is also a local tax rate, 13,2%; (6) 35% on dividends plus 12% on retained earnings; (7) state tax rate, 20% and local tax rate, 30.4%; (8) federal tax rate, 15% and local average tax rate, 9%; (9) federal tax rate, 46% and local average tax rate, 6.5%.

Source: *The Tax/Benefit Position of Production Workers* (several years); *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 5
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1987

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.10	0.17	0.37	0.22	0.38 [1]	0.25	0.61
Germany	0.22	0.17	0.17	0.16	0.46 [2]	0.35	0.54
Italy	0.27	0.09	0.43	0.16	0.46 [3]	0.33	0.65
Japan	0.16 [4]	0.11	0.12	0.06	0.45 [5]	0.25	0.35
Portugal	0.04	0.11	0.25	0.23	0.47 [6]	0.15	0.44
Spain	0.22	0.06	0.31	0.15	0.35	0.27	0.56
Sweden	0.50 [7]	0.00	0.31	0.28	0.52	0.50	0.76
UK	0.27	0.09	0.10	0.19	0.35	0.34	0.51
USA	0.27 [8]	0.07	0.07	0.06	0.44 [9]	0.32	0.40
Australia	0.40	0.00	0.05	0.12	0.49	0.40	0.49

Notes:
(1) 34% on dividends and 42% on retained earnings; (2) 36% on dividends and 56% on retained earnings; (3) federal tax rate, 36% and local tax rate, 16.20%; (4) state tax rate, 10.50% and local tax rate, 5%; (5) 32% on dividends and 42% on retained earnings there is also a local tax rate, 13,2%; (6) 35% on dividends plus 12% on retained earnings; (7) state tax rate, 20% and local tax rate, 30.34%; (8) federal tax rate, 15% and local average tax rate, 13.77%; (9) federal tax rate, 40% and local average tax rate, 6.5%.

Source: *The Tax/Benefit Position of Production Workers* (several years); *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 6
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1988

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rates on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.10	0.17	0.40	0.22	0.38 [1]	0.25	0.63
Germany	0.22	0.17	0.18	0.16	0.46 [2]	0.36	0.54
Italy	0.27	0.09	0.43	0.17	0.46 [3]	0.33	0.66
Japan	0.15 [4]	0.12	0.14	0.06	0.45 [5]	0.25	0.36
Portugal	0.06	0.11	0.25	0.24	0.47 [6]	0.16	0.45
Spain	0.22	0.06	0.32	0.15	0.35	0.27	0.57
Sweden	0.63 [7]	0.00	0.38	0.27	0.52	0.63	0.89
UK	0.27	0.09	0.10	0.19	0.35	0.34	0.51
USA	0.28 [8]	0.08	0.08	0.06	0.38 [9]	0.33	0.42
Australia	0.40	0.00	0.05	0.11	0.39 [10]	0.40	0.49

Notes:
(1) 34% on dividends and 42% on retained earnings; (2) 36% on dividends and 56% on retained earnings; (3) federal tax rate, 36% and local tax rate, 16.20%; (4) state tax rate, 10% and local tax rate, 5%; (5) 32% on dividends and 42% on retained earnings there is also a local tax rate, 13,2%; (6) 35% on dividends plus 12% on retained earnings; (7) state tax rate, 34% and local tax rate, 29%; (8) federal tax rate, 15% and local average tax rate, 14.97%; (9) federal tax rate, 34% and local average tax rate, 6.5%. (10) The marginal rate significantly decreases.

Source: *The Tax/Benefit Position of Production Workers* (several years); *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 7
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1989

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentages of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.10	0.18	0.42	0.21	0.37 [1]	0.26	0.65
Germany	0.22	0.17	0.18	0.17	0.46 [2]	0.36	0.55
Italy	0.26	0.09	0.43	0.16	0.46 [3]	0.32	0.65
Japan	0.15 [4]	0.12	0.14	0.06	0.46 [5]	0.25	0.37
Portugal	0.16	0.11	0.25	0.23	0.40 [6]	0.25	0.54
Spain	0.26	0.06	0.30	0.15	0.35	0.30	0.59
Sweden	0.62 [7]	0.00	0.38	0.28	0.52	0.62	0.88
UK	0.25	0.08	0.09	0.19	0.35	0.31	0.48
USA	0.28 [8]	0.08	0.08	0.06	0.38 [9]	0.33	0.41
Australia	0.39	0.00	0.05	0.11	0.39	0.39	0.48

Notes:
(1) 34% on dividends and 39% on retained earnings; (2) 36% on dividends and 56% on retained earnings; (3) federal tax rate, 36% and local tax rate, 16.20%; (4) state tax rate, 10% and local tax rate, 5%; (5) 35% on dividends and 40% on retained earnings there is also a local maximum tax rate, 13,2%; (6) federal tax rate, 36.5% and local tax rate, 3.65%; (7) state tax rate, 31% and local tax rate, 30.8%; (8) federal tax rate, 15% and local average tax rate, 15.03%; (9) federal tax rate, 34% and local average tax rate, 6.5%.

Source: *The Tax/Benefit Position of Production Eorkers* (several years); *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 8
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1990

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.10	0.18	0.38	0.22	0.40 [1]	0.26	0.62
Germany	0.21	0.19	0.19	0.17	0.43 [2]	0.36	0.56
Italy	0.26	0.09	0.50	0.18	0.46 [3]	0.32	0.69
Japan	0.16 [4]	0.14	0.15	0.06	0.46 [5]	0.28	0.40
Portugal	0.16	0.11	0.25	0.22	0.40 [6]	0.25	0.53
Spain	0.26	0.06	0.31	0.15	0.35	0.30	0.59
Sweden	0.31 [7]	0.00	0.39	0.28	0.40	0.31	0.70
UK	0.25	0.08	0.10	0.18	0.34	0.31	0.48
USA	0.28 [8]	0.08	0.08	0.06	0.38 [9]	0.33	0.42
Australia	0.39	0.00	0.07	0.10	0.39	0.39	0.48

Notes:
(1) 37% on dividends and 42% on retained earnings; (2) 36% on dividends and 50% on retained earnings; (3) federal tax rate, 36% and local tax rate, 16.20%; (4) state tax rate, 10% and local tax rate, 6%; (5) state tax rate, 35% and local maximum tax rate, 13.2%; (6) federal tax rate, 36.5% and local tax rate, 3.65%; (7) state tax rate, 0% and local tax rate, 31%; (8) federal tax rate, 15% and local average tax rate, 15%; (9) federal tax rate, 34% and local average tax rate, 6.5%.

Source: *The Tax/Benefit Position of Production Workers* (several years); *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 9
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1991

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.10	0.17	0.38	0.21	0.38 [1]	0.25	0.61
Germany	0.21	0.19	0.20	0.17	0.43 [2]	0.36	0.57
Italy	0.26	0.09	0.50	0.18	0.46 [3]	0.33	0.70
Japan	0.15 [4]	0.14	0.15	0.06	0.44 [5]	0.27	0.40
Portugal	0.15	0.11	0.25	0.21	0.40 [6]	0.24	0.52
Spain	0.26	0.06	0.31	0.15	0.35	0.30	0.59
Sweden	0.31 [7]	0.00	0.38	0.28	0.30	0.31	0.73
UK	0.25	0.08	0.10	0.19	0.33	0.31	0.48
USA	0.28 [8]	0.08	0.08	0.06	0.38 [9]	0.33	0.42
Australia	0.39	0.00	0.07	0.09	0.39	0.39	0.48

Notes:
(1) 34% on dividends and 42% on retained earnings; (2) 36% on dividends and 50% on retained earnings; (3) federal tax rate, 36% and local tax rate, 16.20%; (4) state tax rate, 10% and local tax rate, 5%; (5) state tax rate, 37.5% and local tax rate, 11%; (6) federal tax rate, 36% and local tax rate, 3.6%; (7) state tax rate, 0% and local tax rate, 31%; (8) federal tax rate, 15% and local average tax rate, 15%; (9) federal tax rate, 34% and local average tax rate, 6.5%.

Source: *The Tax/Benefit Position of Production Workers* (several years); *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 10
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1992

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.12	0.18	0.38	0.20	0.38 [1]	0.28	0.63
Germany	0.21	0.18	0.18	0.18	0.43 [2]	0.35	0.56
Italy	0.27	0.09	0.50	0.18	0.46 [3]	0.34	0.71
Japan	0.15 [4]	0.12	0.13	0.06	0.43 [5]	0.25	0.37
Portugal	0.15	0.11	0.25	0.24	0.40 [6]	0.24	0.54
Spain	0.25	0.06	0.31	0.15	0.35	0.29	0.58
Sweden	0.31 [7]	0.00	0.35	0.25	0.30	0.31	0.69
UK	0.25	0.08	0.10	0.19	0.33	0.31	0.49
USA	0.28 [8]	0.08	0.08	0.06	0.38 [9]	0.33	0.42
Australia	0.38	0.00	0.07	0.09	0.39	0.38	0.47

Notes:
(1) 34% on dividends and 42% on retained earnings; (2) 36% on dividends and 50% on retained earnings; (3) federal tax rate, 36% and local tax rate, 16.20%; (4) state tax rate, 10% and local tax rate, 5%; (5) state tax rate, 36% and local tax rate, 11%; (6) federal tax rate, 36% and local tax rate, 3.65%; (7) state tax rate, 0% and local tax rate, 31.04%; (8) federal tax rate, 15% and local average tax rate, 15%; (9) federal tax rate, 34% and local average tax rate, 6.5%.

Source: *The Tax/Benefit Position of Production Workers* (several years); *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years)*

TABLE 11
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1993

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate Applied on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.12	0.18	0.37	0.20	0.33	0.28	0.65
Germany	0.21	0.18	0.18	0.18	0.43 [1]	0.35	0.56
Italy	0.27	0.10	0.50	0.18	0.46 [2]	0.34	0.71
Japan	0.15 [3]	0.12	0.13	0.06	0.44 [4]	0.25	0.37
Portugal	0.15	0.11	0.25	0.22	0.40 [5]	0.24	0.53
Spain	0.25	0.06	0.32	0.13	0.35	0.29	0.58
Sweden	0.31 [6]	0.01	0.31	0.26	0.30	0.32	0.67
UK	0.25	0.08	0.10	0.18	0.33	0.31	0.48
USA	0.28	0.08	0.06	0.06	0.39 [8]	0.33	0.41
Australia	0.38 [7]	0.00	0.07	0.10	0.33	0.38	0.48

Notes:
(1) 36% on dividends and 50% on retained earnings; (2) federal tax rate, 36% and local tax rate, 16.20%; (3) federal tax rate, 10% and local tax rate, 5%; (4) state tax rate, 37.5% and local tax rate, 11%; (5) federal tax rate, 36% and local tax rate, 3.6%; (6) state tax rate, 0% and local tax rate, 31%; (7) federal tax rate, 15% and local average tax rate, 15%; (8) federal tax rate, 35% and local average tax rate, 6.5%.

Source: *The Tax/Benefit Position of Production Workers* (several years); *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 12
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1994

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.12	0.19	0.38	0.21	0.33	0.28	0.66
Germany	0.22	0.19	0.19	0.20	0.38 [1]	0.37	0.60
Italy	0.27	0.10	0.50	0.19	0.46 [2]	0.34	0.72
Japan	0.15 [3]	0.14	0.14	0.06	0.46 [4]	0.27	0.39
Portugal	0.15	0.11	0.25	0.24	0.40 [5]	0.24	0.54
Spain	0.25	0.07	0.32	0.14	0.35	0.29	0.59
Sweden	0.31 [6]	0.02	0.30	0.25	0.28	0.32	0.68
UK	0.25	0.08	0.10	0.19	0.33	0.31	0.49
USA	0.28 [7]	0.08	0.08	0.06	0.39 [8]	0.33	0.42
Australia	0.34	0.00	0.07	0.10	0.33	0.34	0.45

Notes:
(1) 30% on dividends and 45% on retained earnings; (2) federal tax rate, 36% and local tax rate, 16.20%; (3) federal tax rate, 10% and local tax rate, 5%; (4) state tax rate, 37.5% and local maximum tax rate, 13.2%; (5) federal tax rate, 36% and local tax rate, 3.6%; (6) state tax rate, 0% and local tax rate, 31%; (7) federal tax rate, 15% and local average tax rate, 15%; (8) federal tax rate, 35% and local average tax rate, 6.5%.

Source: *The Tax/Benefit Position of Production Workers* (several years); *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 13
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1995

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.12	0.19	0.36	0.22	0.33	0.28	0.65
Germany	0.22	0.19	0.19	0.19	0.38 [1]	0.37	0.59
Italy	0.34	0.09	0.50	0.18	0.46 [2]	0.40	0.76
Japan	0.15 [3]	0.14	0.14	0.06	0.46 [4]	0.26	0.39
Portugal	0.15	0.11	0.24	0.25	0.40 [5]	0.24	0.54
Spain	0.25	0.06	0.31	0.14	0.35	0.29	0.58
Sweden	0.32 [6]	0.04	0.31	0.23	0.28	0.34	0.69
UK	0.25	0.12	0.10	0.19	0.33	0.34	0.51
USA	0.28 [7]	0.08	0.08	0.06	0.39 [8]	0.33	0.42
Australia	0.34	0.00	0.07	0.10	0.36	0.34	0.45

Notes:
(1) 30% on dividends and 45% on retained earnings; (2) federal tax rate, 36% and local tax rate, 16.20%; (3) federal tax rate, 10% and local tax rate, 5%; (4) state tax rate, 37.5% and local maximum tax rate, 13.2%; (5) federal tax rate, 36% and local tax rate, 3.6%; (6) state tax rate, 0% and local tax rate, 31,65%; (7) federal tax rate, 15% and local average tax rate, 15%; (8) federal tax rate, 35% and local average tax rate, 6.5%.

Source: *The Tax/Benefit Position of Employees* (several years); *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 14
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1996

Country	Marginal Income Tax Rate	Employee' Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.11	0.19	0.38	0.22	0.37	0.27	0.66
Germany	0.28	0.20	0.20	0.18	0.38 [1]	0.43	0.64
Italy	0.34	0.10	0.50	0.17	0.47 [2]	0.41	0.76
Japan	0.15 [3]	0.17	0.14	0.06	0.46 [4]	0.29	0.41
Portugal	0.15	0.11	0.24	0.24	0.40 [5]	0.24	0.53
Spain	0.20	0.06	0.31	0.14	0.35	0.25	0.54
Sweden	0.32 [6]	0.05	0.33	0.22	0.28	0.35	0.71
UK	0.24	0.08	0.10	0.19	0.33	0.30	0.48
USA	0.28 [7]	0.08	0.08	0.06	0.39 [8]	0.33	0.42
Australia	0.34	0.00	0.07	0.10	0.36	0.34	0.44

Notes:
(1) 30% on dividends and 45% on retained earnings; (2) federal tax rate, 36% and local tax rate, 16.20%; (3) federal tax rate, 10% and local tax rate, 5%; (4) state tax rate, 37.5% and local maximum tax rate, 13.2%; (5) federal tax rate, 36% and local tax rate, 3.6%; (6) state tax rate, 0% and local tax rate, 31,65%; (7) federal tax rate, 15% and local average tax rate, 15%; (8) federal tax rate, 35% and local average tax rate, 6.5%.

Source: *The Tax/Benefit Position of Employees* (several years); *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 15
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1997

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.11	0.18	0.40	0.23	0.33	0.26	0.66
Germany	0.28	0.21	0.21	0.18	0.38 [1]	0.43	0.65
Italy	0.34	0.10	0.50	0.18	0.47 [2]	0.41	0.76
Japan	0.15 [3]	0.14	0.15	0.07	0.44 [4]	0.27	0.40
Portugal	0.15	0.11	0.24	0.25	0.40 [5]	0.24	0.54
Spain	0.25	0.06	0.31	0.15	0.35	0.29	0.58
Sweden	0.32 [6]	0.06	0.33	0.23	0.28	0.36	0.71
UK	0.23	0.09	0.10	0.19	0.31	0.30	0.48
USA	0.27 [7]	0.08	0.08	0.06	0.39 [8]	0.32	0.41
Australia	0.37	0.00	0.07	0.10	0.36	0.37	0.47

Notes:
(1) 30% on dividends and 45% on retained earnings; (2) federal tax rate 37% and local tax rate 16.20% (3) federal tax rate 10% and local tax rate 5%; (4) state tax rate, 37.5% and local tax rate, 11%; (5) federal tax rate, 36% and local tax rate, 3.6%; (6) state tax rate, 0% and local tax rate, 31,65%; (7) federal tax rate, 15% and local average tax rate 13.62%; (8) federal tax rate, 35% and local average tax rate, 6.5%.

Source: *The Tax/Benefit Position of Employees* (several years); *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 16
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1998

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.11	0.17	0.39	0.22	0.33	0.26	0.65
Germany	0.28	0.21	0.21	0.18	0.38 [1]	0.43	0.65
Italy	0.34	0.09	0.52	0.18	0.40 [2]	0.39	0.80
Japan	0.15 [3]	0.14	0.15	0.08	0.42 [4]	0.27	0.41
Portugal	0.15	0.11	0.24	0.25	0.37 [5]	0.24	0.54
Spain	0.20	0.06	0.31	0.15	0.35	0.25	0.55
Sweden	0.31 [6]	0.07	0.33	0.22	0.28	0.36	0.71
UK	0.23	0.09	0.10	0.19	0.31	0.30	0.48
USA	0.26 [7]	0.08	0.08	0.06	0.39 [8]	0.32	0.40
Australia	0.43	0.00	0.07	0.10	0.36	0.43	0.53

Notes:
(1) 30% on dividends and 45% on retained earnings; (2) federal tax rate 37% and local tax rate, 4.25% (3) federal tax rate, 10% and local tax rate, 5%; (4) state tax rate, 34.5% and local tax rate, 11%; (5) federal tax rate, 34% and local tax rate, 3.4%; (6) state tax rate, 0% and local tax rate, 30.76%; (7) federal tax rate, 15% and local average tax rate, 13.08%; (8) federal tax rate, 35% and local average tax rate, 6.5%.

Source: *Tax Wages 1998*; *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 17
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 1999

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.11	0.13	0.38	0.22	0.33	0.23	0.62
Germany	0.30	0.21	0.21	0.18	0.35 [1]	0.44	0.66
Italy	0.30	0.09	0.52	0.19	0.40 [2]	0.36	0.78
Japan	0.18 [3]	0.26	0.19	0.08	0.37 [4]	0.39	0.55
Portugal	0.15	0.11	0.24	0.25	0.37 [5]	0.24	0.54
Spain	0.20	0.06	0.31	0.16	0.35	0.25	0.56
Sweden	0.31 [6]	0.07	0.33	0.22	0.28	0.36	0.71
UK	0.23	0.12	0.10	0.18	0.31	0.32	0.49
USA	0.21 [7]	0.08	0.08	0.06	0.40 [8]	0.27	0.36
Australia	0.43	0.00	0.07	0.09	0.36	0.43	0.52

Notes:
(1) 30% on dividends and 40% on retained earnings; (2) federal tax rate 37% and local tax rate, 4.25% (3) federal tax rate, 10% and local tax rate, 8%; (4) state tax rate, 34.5% and local tax rate, 13.5%; (5) federal tax rate, 34% and local tax rate, 3.4%; (6) state tax rate, 0% and local tax rate, 31%; (7) federal tax rate, 15% and local average tax rate, 7.53%; (8) federal tax rate, 35% and local average tax rate, 7.45%.

Source: *Tax Wages 1998*; *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 18
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 2000

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.10	0.13	0.38	0.21	0.33	0.22	0.61
Germany	0.28	0.21	0.21	0.18	0.35 [1]	0.43	0.65
Italy	0.34	0.09	0.35	0.19	0.40 [2]	0.40	0.70
Japan	0.18 [3]	0.26	0.19	0.08	0.37 [4]	0.39	0.55
Portugal	0.15	0.11	0.24	0.25	0.35 [5]	0.24	0.55
Spain	0.20	0.06	0.31	0.16	0.35	0.25	0.56
Sweden	0.31 [6]	0.07	0.33	0.22	0.28	0.36	0.71
UK	0.23	0.08	0.12	0.18	0.30	0.29	0.48
USA	0.21 [7]	0.08	0.08	0.06	0.40 [8]	0.27	0.36
Australia	0.30	0.00	0.07	0.12	0.34	0.30	0.42

Notes:
(1) 30% on dividends and 40% on retained earnings; (2) federal tax rate 37% and local tax rate, 4.25% (3) federal tax rate, 10% and local tax rate, 8%; (4) state tax rate, 27.1% and local tax rate, 13.5%; (5) federal tax rate, 32% and local tax rate, 3.2%; (6) state tax rate, 0% and local tax rate, 30.76%; (7) federal tax rate, 15% and local average tax rate, 13.08%; (8) federal tax rate, 35% and local average tax rate, 7.42%.

Source: *Tax Wages 1998*; *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*

TABLE 19
TOTAL EFFECTIVE MARGINAL TAX RATE ON THE LABOUR FACTOR AND ITS COMPONENTS
TAX YEAR 2001

Country	Marginal Income Tax Rate	Employee Social Contributions Rate	Employer Social Contributions Rate	Tax Rate on Consumption of Goods and Services	Corporation Tax Rate	Percentage of Taxes Borne by Labour	Effective Marginal Tax Rate on the Labour Factor
France	0.08	0.13	0.38	0.20	0.33	0.21	0.60
Germany	0.36	0.20	0.20	0.18	0.35 [1]	0.49	0.70
Italy	0.32	0.09	0.35	0.16	0.39 [2]	0.38	0.68
Japan	0.18 [3]	0.26	0.19	0.08	0.37 [4]	0.39	0.55
Portugal	0.14	0.11	0.24	0.27	0.35 [5]	0.23	0.55
Spain	0.20	0.06	0.31	0.15	0.35	0.25	0.55
Sweden	0.31 [6]	0.07	0.33	0.22	0.28	0.36	0.71
UK	0.22	0.10	0.11	0.18	0.30	0.30	0.48
USA	0.22 [7]	0.08	0.08	0.06	0.40 [8]	0.28	0.37
Australia	0.30	0.00	0.07	0.12	0.30	0.30	0.43

Notes:
(1) 30% on dividends and 40% on retained earnings; (2) federal tax rate 36% and local tax rate, 4.25% (3) federal tax rate, 10% and local tax rate, 8%; (4) state tax rate, 27.1% and local tax rate, 13.5%; (5) federal tax rate, 32% and local tax rate, 3.2%; (6) state tax rate, 0% and local tax rate, 31%; (7) federal tax rate, 15% and local average tax rate, 7.43%; (8) federal tax rate, 35% and local average tax rate, 7.41%.

Source: *Tax Wages 1998*; *International Tax Summaries (several years);* González-Páramo and Sanz (1994); *Revenue Statistics* (several years); *European Tax Handbook (several years).*