Tax wedge in Croatia, Italy, Ireland, the Netherlands and Spain

MAJA CUNDIĆ, mag. math*

Preliminary communication**
JEL: H21, H24, J38
doi: 10.3326/fintp.40.2.3

* The author would like to thank two anonymous referees for their useful comments and suggestions. This article belongs to a special issue of Financial Theory and Practice, which is devoted to the comparison of tax wedge on labour income in Croatia and other EU countries. The articles in this issue have arisen from the students' research project, undertaken in 2015. The Preface to the special issue (Urban, 2016) outlines the motivation behind the research project, explains the most important methodological issues, and reviews the literature on the measurement of tax wedge in Croatia.
The views expressed in this paper are solely those of the author and do not necessarily represent those of the institution in which she is employed.
** Received: February 10, 2016
Accepted: April 6, 2016

Maja CUNDIĆ
Croatian Financial Services Supervisory Agency, Miramarska 24b, 10000 Zagreb, Croatia
e-mail: maja.cundic@hanfa.hr

Abstract

Each country has a unique tax system, comprising a number of components reflecting the taxation and economic policy of a country. The aim of this paper is to analyse and compare the tax burden on labour income in Croatia, Italy, Spain, Ireland and the Netherlands while observing various family types and gross wages. The results show that, of all the countries observed, Italy has the highest tax wedge. When it comes to most of the observed families' and single workers' tax wedges, Croatia falls somewhere in the middle, while Ireland stands out for having a relatively low tax wedge.

Keywords: taxation of labour income, progressivity, tax wedge, net average tax rate, Croatia, Italy, Spain, Ireland, the Netherlands

1 INTRODUCTION

One of the determinants of each modern country is its tax system. The efficiency of the tax system can have a significant effect on the economy, economic development level, income structure of the population, the employment and unemployment rates, as well as the citizens' satisfaction level. There is no generally accepted way of collecting taxes; for instance, each EU country's tax system is unique.

The aim of this paper is to analyse the tax burden on labour income in Croatia and selected EU countries – Italy, Spain, Ireland and the Netherlands – and compare their respective tax burdens in 2013 on the basis of certain tax burden indicators. This parallel analysis is based on the Taxing Wages methodology and constitutes a part of the research project described in Urban (2016).

The principal question is: how does the tax burden correlate with gross wage, family type, and the number of children? In addition, this paper aims to establish the similarities and differences in the personal income tax (PIT) systems and the social insurance contribution (SIC) payments in selected EU countries.

The results show that the tax wedge indeed depends on the level of income from employment, it is inversely proportional to the number of children, and it differs among the same family types in different countries. Furthermore, looking at different gross wages, it is evident that the contributions amounts differ among countries and that the contributions burden is distributed between the employer and employee in different ways, which can also have an impact on the final tax wedge amount.

In section 2 of the paper, the relevant terms are defined, the model according to which indicators are calculated are outlined, and the basic tenets are introduced. Section 3 contains an overview of labour income taxation per country, first describing the general taxation structure in a certain country and then showing the calculations for 2013. The results are compared in section 4, followed by the conclusion.

2 METHODOLOGY: MODEL AND INDICATORS

The methodology used in this paper for the calculation of tax burden indicators and other variables necessary for their calculation is based on the OECD publication Taxing Wages (OECD, 2014). Even though the tax systems differ from one country to another, it is possible to directly compare certain indicators. This paper describes the tenets and the model used to compare those indicators across different countries.

The four observed family types are: single workers, couples without children, couples with two children and single parents with two children. In this context, "single worker" means an individual living without a partner, of either sex, while a "couple" means a married couple. For a couple or single worker with two children, the children are assumed to be between six and eleven, inclusive, and without own income. According to OECD (2014), eight hypothetical units are defined and their characteristics are shown in table 1.

Table 1
Characteristics of observed hypothetical units

Designation	Adults	Number of children	Spouse I (% of AGW)	Spouse II (% of AGW)
1A-67-NC	Single worker	0	2/3 x 100	–
1A-100-NC	Single worker	0	100	–
1A-167-NC	Single worker	0	5/3 x 100	–
1A-67-2C	Single worker	2	2/3 x 100	–
2A-100/0-2C	Couple	2	100	Unemployed
2A-100/33-2C	Couple	2	100	1/3 x 100
2A-100/67-2C	Couple	2	100	2/3 x 100
2A-100/33-NC	Couple	0	100	1/3 x 100

Note: The symbols stand for the following: AGW – average gross wage; A – adult; NC – no children; 2C – 2 children.

Source: OECD (2014).

In line with OECD (2014), the family is assumed to have no income source other than full-time employed adult members' gross wage. Different amounts of annual gross wage (AGW) are included in the analysis. More specifically, the model, as well as this paper, uses 1/3 of AGW (33%), 2/3 of AGW (67%), and 5/3 of AGW (167%) (see Urban, 2016). Table 2 presents AGW amounts used in this research. The amounts refer to 2013.

Social insurance contributions (SICs), unlike taxes, are dedicated public revenue. SICs payments are made to health and pension insurance and they are paid both by employers and employees in the manner determined by the country in question. The term *labour cost* denotes the sum of the gross wage and *employer SICs*, while *net wage* means the gross wage minus *employee SICs* and personal income tax (PIT).

Table 2
Annual average gross wages in selected countries, 2013

	AGW expressed in national currency	Exchange rate	AGW (in EUR)
Croatia	HRK 93,180	HRK/EUR = 7.5735	12,303
Italy	EUR 29,704	1	29,704
Spain	EUR 26,027	1	26,027
Ireland	EUR 32,381	1	32,381
Netherlands	EUR 48,109	1	48,109

Source: (1) AGW – for Croatia: author's calculation as per CBS (2016) and Urban (2016); for other countries: OECD (2014); (2) Exchange rate for Croatia: CNB (2016).

The term *income* represents the taxable amount; in some countries, the *personal allowance* is deducted from the income to get the tax base. Personal allowance can comprise the basic allowance, child allowance, allowance for dependents, etc. Another type of tax relief is *tax credit*: unlike personal tax allowances, tax credits are reductions made after the application of tax rates, and can also comprise different components: basic tax credit, tax credit for children, etc. Tax credit is granted in all observed countries except Croatia. Apart from the above, the analysis also covers cash family benefits granted by all levels of government.

Net average tax rate is the term used to denote the share of the sum of total personal income taxes and employee SICs, net of cash family benefits, in the gross wage. *Net average tax wedge* (or tax wedge) is the share of all taxes and SICs, net of cash family benefits, in the labour cost (Urban, 2016).

The tax wedge calculation in this paper is applied only to income from employment, specifically on wages. The taxation of other types of income from employment, such as income from self-employment and second income, has not been taken into account.

All of the observed countries apply a progressive tax schedule, meaning that the net average tax rate imposed on an individual grows as their income increases (IJF, 2016). Apart from the PIT, other taxes can be levied, such as local taxes, municipal taxes, city taxes, etc.

It is important to note that employee and employer SICs refer exclusively to the payments made to the general government, as contributions paid to other funds are not included in the analysis. For instance, the Croatian pension system rests on two pillars: the 1st and the 2nd. Employee SICs paid into the 1st pillar are general government revenue, while the 2nd pillar contributions, though mandatory, are paid into private pension funds. Thus, the former plays a role in the tax burden calculation and the latter does not. For more information about this topic, see Urban (2016), Blažić and Trošelj (2012), OECD (2014, 2015).

3 TAXATION OF LABOUR INCOME IN SELECTED COUNTRIES

3.1 CROATIA

3.1.1 Basic components of labour income taxation in Croatia

SICs comprise employee SICs, payable by employees, and employer SICs, payable by employers. The employee SIC rate is 20%: 15% is allocated to the 1st pillar, while 5% is allocated to the 2nd pillar. Employer SICs, calculated and paid by the employer, comprise health insurance contributions (13%), work-related injury contributions (0.5%), and employment contributions (1.7%), adding up to 15.2% of gross wage in 2013 (Social Insurance Contributions Act, 2012).

Personal income taxpayers are all individuals earning a personal income. Personal income can come from the following six sources: employment, self-employment, property and property rights, capital, insurance and other (Personal Income Tax Act, 2015). As noted above, the applied model allows that only income from employment (wages) be taken into account.

Taxpayers are granted a personal allowance in order to reduce the tax base (table 3).[1] Disability allowances also apply, but they have not been taken into account in this research.

Table 3

Taxpayer personal allowance (Croatia, 2013)

Personal allowance	Factor	Annual amount (EUR)
Basic personal allowance	1.0	3,486
Adult dependent	0.5	1,744
First child	0.5	1,744
Second child	0.7	2,441
Third child	1.0	3,487
Fourth child	1.4	4,882
Fifth child	1.9	6,626

Source: Personal Income Tax Act (2012).

The total personal allowances granted are the sum of all allowances the taxpayer is entitled to. When the personal tax allowance is subtracted from the income, the tax base is obtained to which tax rates are applied progressively.

Table 4

Annual tax bands and tax rates (Croatia, 2013)

Annual tax base (EUR)	Rate (%)
Up to 3,487	12
3,487 – 13,950	25
Over 13,950	40

Source: Personal Income Tax Act (2012).

[1] This paper does not take into account areas of special state concern and mountainous areas where special personal allowance rates apply.

A progressive tax schedule is applied, meaning that the final PIT equals the sum of tax amounts per tax band, these tax amounts resulting from the relevant tax rates being applied to relevant tax bands (table 4). This means that amounts falling into the first band up to EUR 3,487 of the tax base are multiplied by 0.12, the following EUR 10,463 (i.e. tax base amounts falling between EUR 3,487 and EUR 13,950) by 0.25, and tax bases exceeding that amount are multiplied by 0.4. The sum of the products is PIT.

Apart from PIT, taxpayers also pay local government surtax, which is a tax that local government units (cities and municipalities) may or may not introduce. Local government surtax is a percentage of PIT (the percentage being determined by the city/municipality) (Personal Income Tax Act, 2012). This paper assumes a local government surtax rate of 12%.

Single parents and couples with children meeting specific conditions are entitled to cash family benefits, i.e. child benefit. According to the Croatian Pension Insurance Institute (HZMO, 2016), a beneficiary is entitled to child benefit if their total monthly personal income earned in the previous calendar year per household member does not exceed 50% of the budget basis. The monthly budget basis is determined for each year in accordance with the Croatian State Budget Execution Act. Thus, in 2013, the budget basis was EUR 439.[2] The child benefit amount depends on the total net monthly personal income per household member.[3] If the total net monthly personal income per family member does not exceed 16.33% of the budget basis, child benefit will amount to 9% of the budget basis per child; if the total net monthly personal income per household member is between 16.34% and 33.66% of the budget basis, the child benefit will amount to 7.5% of the budget basis per child; if the total net monthly personal income per household member falls between 33.67% and 50% of the budget basis, the granted child benefit will be equal to 6% of the budget basis per child. Moreover, the benefit for a child living in a one-parent household is increased by 15%.

3.1.2 Tax wedge in Croatia

A microsimulation model for hypothetical units (table 1) was made to calculate tax burden indicators for Croatia in 2013. The model uses set parameters to calculate SICs, PIT, local government surtax and cash family benefits, as well as net average tax rate and net average tax wedge.

As has been shown above, average monthly gross wage in 2013, according to the Croatian Bureau of Statistics (CBS, 2014), was EUR 1,025, or EUR 12,303 annually. It should be noted that 1/3 of AGW, used as a parameter in the case of hypothetical units 2A-100/33-2C and 2A-100/33-NC, is not in accordance with the 2013 Minimum Wage Act: 1/3 of AGW amounts to EUR 342, which is lower than

[2] According to the Croatian State Budget Execution Act for 2013.

[3] For persons earning personal income from employment (employees), net personal income equals gross wage minus employee SICs and PIT (including local government surtax).

the minimum gross wage (2013 minimum gross wage amounted to EUR 394). However, this amount is used in the calculation of the indicators for hypothetical units in order to meet the OECD (2014) methodology.

When calculating the amount of child benefit it is assumed that the family's net personal income in the preceding year was the same as in 2013. Therefore, for a single worker with two children earning 67% of AGW (1A-67-2C), the amount of child benefit is EUR 727 per year (consisting of the basic amount of EUR 632 and additional EUR 95 to which a beneficiary is entitled as a single parent). For a couple with two children where one spouse earns 100% of AGW and the other is without income (2A-100/0-2C), the yearly child benefit amounts to EUR 632.

For a detailed calculation of tax burden indicators in Croatia in 2013, see tables A1 and A2 in the annex. Figure 1 shows the net average tax wedge and net average tax rate for all eight hypothetical units.

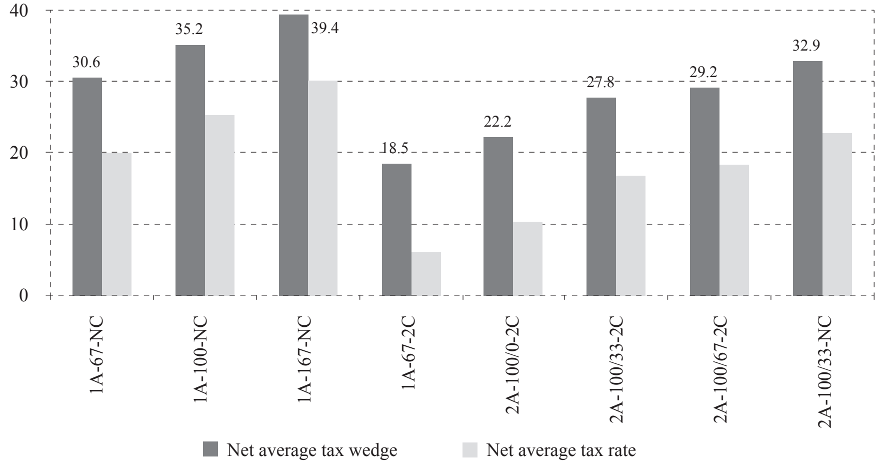
The progressive nature of personal income taxation is evident. The net average tax wedge for a single worker earning 100% of AGW (1A-100-NC) exceeds that of a single worker earning 67% of AGW (1A-67-NC), but not the tax wedge of a single worker earning 167% of AGW (1A-167-NC). In the case of a single parent with two children (1A-67-2C), it can be seen that the tax wedge of this unit is lower than that of a single worker without children earning the same gross wage (1A-67-NC).

The analysis of tax wedges for couples with and without children (table A2) shows significantly smaller amounts of PIT and local government surtax. When calculating total payable taxes, spouses are treated as separate tax units: each spouse will pay a certain amount of PIT, depending on their gross wages, while the child allowance will in this case be granted to the spouse who earns a higher annual gross wage (100% of AGW). Final household outlays paid from the gross wage are the sum of each partner's outlays.

The tax wedge for single workers with two children earning gross wages amounting to 67% of AGW (1A-67-2C) is 18.5% (figure 1), which is significantly less than the tax wedge of a single worker without children earning 67% of AGW (1A-67-NC). The tax wedge for couples with children is notably lower: the tax wedge for a couple with two children earning gross wages amounting to 100% and 33% of AGW (2A-100/33-2C) is 5.1 percentage points lower than the tax wedge for a couple without children earning the same gross wage (100% and 33% of AGW) (2A-100/33-NC). If the tax wedge of a single worker without children earning 100% of AGW (1A-100-NC) and that of a couple with children with only one spouse earning an income, also amounting to 100% of AGW (2A-100/0-2C), are compared, it can be observed that the tax wedge of a taxpayer supporting a spouse and two children falls by 13 percentage points due to an increase in personal tax allowance and granted child benefit.

FIGURE 1

Net average tax wedge and net average tax rate for hypothetical units (Croatia, 2013), in %



Source: Author's calculations.

3.2 ITALY

3.2.1 Basic components of labour income taxation in Italy

According to OECD (2014), employee SICs rate in Italy is 9.49% on gross wages up to EUR 45,530, 10.49% on wages between EUR 45,530 and EUR 99,034, and a fixed amount of EUR 10,072 is paid on wages exceeding the latter amount. Employer SICs rate is 32.08% on wages up to EUR 99,034 annually. For earnings exceeding that amount the employer pays a fixed amount of EUR 31,770 per year.

Personal income tax reliefs are available in the form of tax credits, the amounts of which depend on income bands (tables 5 and 6).

TABLE 5

Yearly basic tax credit, in EUR (Italy, 2013)

Taxable income	Basic personal credit
Up to 8,000	1,840
8,001 – 15,000	max + 502 * (15,000 – taxable income)/7,000
15,001 – 55,000	max * (55,000 – taxable income)/40,000
Over 55,000	0

Source: OECD (2014).

The child tax credit is calculated as a function of taxable income, as follows:

– Tax credit for families with one child:

$$CTC1 = 950 * (95{,}000 - \textit{taxable income})/95{,}000. \qquad (1)$$

– For families with more than one child, the amount of 95,000 in equation (1) is increased by 15,000 for each child other than the first; the amounts for all children are summed up.

– Families with more than 3 children are entitled to an additional tax credit of EUR 200 per child.

Table 6
Yearly basic tax credit, in EUR (Italy, 2013), continued

Taxable income band	Maximum amount
8,001 – 15,000	1,338
15,001 – 23,000	1,338
23,001 – 24,000	1,348
24,001 – 25,000	1,358
25,001 – 26,000	1,368
26,001 – 27,000	1,378
27,001 – 28,000	1,363
28,001 – 55,000	1,338

Source: OECD (2014).

Table 7 shows tax credit amounts for a dependent spouse and for different taxable income amounts.

Table 7
Yearly tax credit for a dependent spouse, in EUR (Italy, 2013)

Taxable income band	Tax credit
Up to 15,000	800 – 110 * taxable income/15,000
15,001 – 29,000	690
29,001 – 29,200	700
29,201 – 34,700	710
34,701 – 35,000	720
35,001 – 35,100	710
35,101 – 35,200	700
35,201 – 40,000	690
40,001 – 80,000	690 * (80,000 – taxable income)/40,000
Over 80,000	0

Source: OECD (2014).

A five-band system is in place in Italy, as shown in table 8. For instance, a 38% tax rate is applied to the portion of tax base between EUR 28,000 and EUR 55,000 per year.

Table 8
Tax bands and tax rates (Italy, 2013)

Tax band (in EUR)	Rate (%)
Up to 15,000	23
15,000 – 28,000	27
28,000 – 55,000	38
55,000 – 75,000	41
Over 75,000	43

Source: OECD (2014).

Regional and local taxes also apply. Their amount is a percentage of taxable income, depending on the region.

3.2.2 Tax wedge in Italy

The model uses regional and local tax rates of 1.73% and 0.9%, corresponding to the rates applied in Rome. Therefore, total tax is the sum of PIT after the application of tax credits and total local tax amounting to 2.63%. Both spouses' personal incomes are taxed separately.

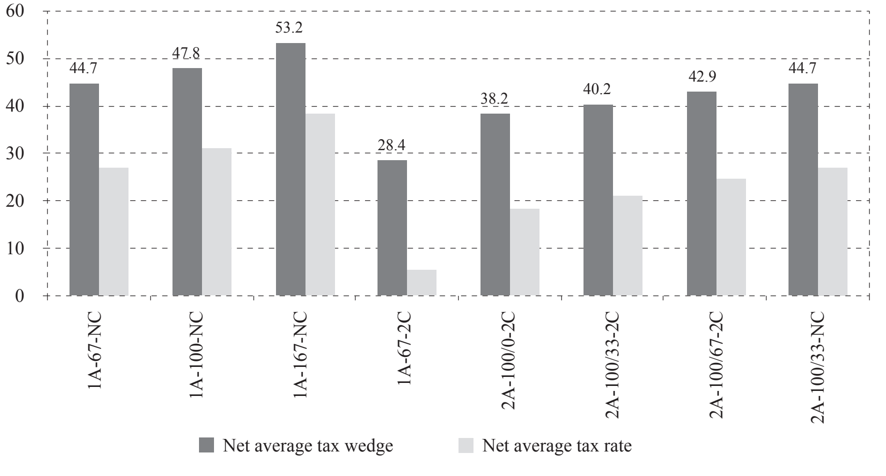
Tables A3 and A4 in the annex present a detailed calculation of tax burden indicators in Italy in 2013. Figure 2 shows the net average tax wedge and net average tax rate for all eight hypothetical units.

The tax burden imposed on single workers earning 167% of AGW (1A-167-NC) is a high 53.2% (table A3). However, the tax wedge for a single parent (1A-67-2C) is significantly smaller (28.4%): apart from receiving tax credit for two children, this hypothetical unit is also entitled to cash family benefits.

If the data on hypothetical units with children and those without children (figure 2) are compared, the impact of tax reliefs and cash family benefits on the tax wedge becomes evident. The tax wedge increases with the gross wage, pointing to the fact that the tax system is progressive (compare units 1A-67-NC, 1A-100-NC and 1A-167-NC; also compare units 2A-100/0-2C, 2A-100/33-2C and 2A-100/67-2C).

FIGURE 2

Net average tax wedge and net average tax rate for hypothetical units (Italy, 2013), in %



Source: Author's calculations based on OECD (2014).

3.3 SPAIN

3.1.1 Basic components of labour income taxation in Spain

According to OECD (2014) and Adiego et al. (2014), employee SICs in Spain (6.35% of gross wage) are dedicated to old age pension and sick leave, unemployment and professional training schemes, while employer SICs (29.9%) comprise old age pension and sick leave, work-related accidents, wages fund, and professional training. A lower (EUR 9,036) and upper ceiling (EUR 41,108.40) are taken into account when assessing SICs rates.

Spanish spouses can choose how they prefer to be taxed: by imposing taxes on total household income or on each partner's income separately. Couples taxed jointly may claim a tax allowance of EUR 3,400, while a single parent may claim EUR 2,150. Work-related expenses (WRE) can also be deducted from income (gross wage minus employee SICs) as follows:

– For income less than or equal to EUR 9,180 per year: WRE = EUR 4,080.
– For income between EUR 9,180.01 and EUR 13,260:

$$WRE = 4{,}080 - 0.35 * (\textit{net income} - 9{,}180). \tag{2}$$

– For income exceeding EUR 13,260: WRE = EUR 2,652.

The exempt income is EUR 5,151, the same amount being granted for individuals and families filing jointly. Allowance of EUR 1,836 is granted for the first child and EUR 2,040 for the second. Child allowances are shared equally between spouses when their incomes are taxed separately.

Apart from the standard personal income taxes, regional taxes are also applied.

Tables 9 and 10 show tax bands and relevant PIT and regional tax rates.

Table 9
Tax bands and tax rates (Spain, 2013)

Taxable income (in EUR)	Rate (%)
Up to 17,707.20	12.75
17,707.20 – 33,007.20	16.00
33,007.20 – 53,407.20	21.50
53,407.20 – 120,000.20	25.50
120,000.20 – 175,000.20	27.50
175,000.20 – 300,000.20	29.50
Over 300,000.20	30.50

Source: OECD (2014).

Family cash benefits are granted for dependent children: EUR 291 for families with one child and AGW below EUR 11,490.43, and EUR 582 for families with 2 children and with AGW below EUR 13,213.99.

FINANCIAL THEORY AND PRACTICE
40 (2) 201-230 (2016)

Table 10

Regional tax bands and tax rates (Spain, 2013)

Taxable income (in EUR)	Rate (%)
Up to 17,707.20	12.00
17,707.20 – 33,007.20	14.00
33,007.20 – 53,407.20	18.50
Over 53,407.20	21.50

Source: OECD (2014).

3.2.2 Tax wedge in Spain

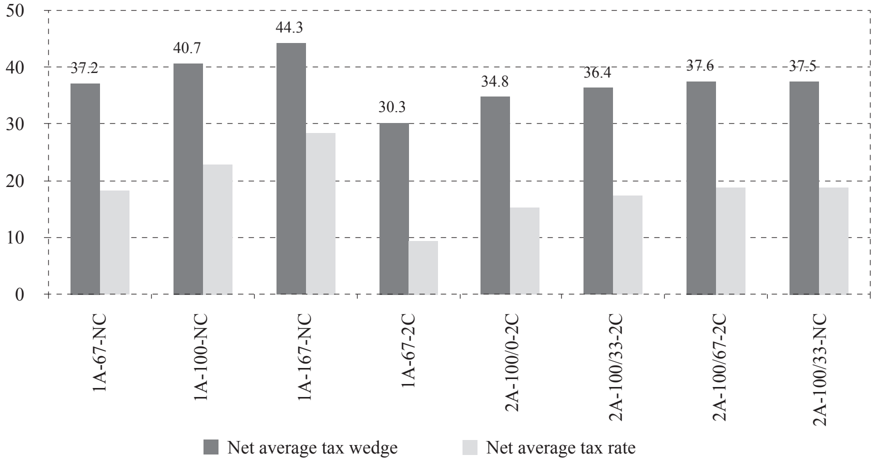
In the OECD (2014) model, each spouse's income is taxed separately, apart from where one spouse's income amounts to 0, meaning that this couple is granted a tax relief of EUR 3,400 per year. A single parent, moreover, is granted a tax relief of EUR 2,150 per year. Any non-standard tax reliefs have not been taken into account.

Tables A5 and A6 in the annex show a detailed calculation of tax burden indicators in Spain in 2013. Figure 3 shows the net average tax wedge and net average tax rate for all eight hypothetical units.

Similarly to the first two countries, Croatia and Italy, the tax burden in Spain is higher for taxpayers earning a higher income. Moreover, the tax wedge of a single parent with two children and earning a gross wage amounting to 67% of AGW (1A-67-2C) is 6.9 percentage points lower than the tax wedge of a single worker earning 67% of AGW (1A-67-NC).

Figure 3

Net average tax wedge and net average tax rate for hypothetical units (Spain, 2013), in %



Source: Author's calculations based on OECD (2014).

Evidently, supports for children in Spain, unlike in the case of Croatia and Italy, are not high: for example, the difference between the tax wedge for a couple with children 2A-100/67-2C and a couple without children 2A-100/33-NC is very low, only 1.1 percentage points (figure 3).

3.4 IRELAND

3.4.1 Basic components of labour income taxation in Ireland

It could be said that the Irish tax system was somewhat different from the tax systems observed so far: the total gross wage amount is taxable, while cash family benefits can, in some cases, be relatively high. Moreover, Ireland has a unique *Pay Related Social Insurance* (PRSI) applicable to almost all employees and employers and payable to the national social insurance. The employee shall therefore pay benefits amounting to 4% of gross wage unless the gross wage is under the annual EUR 18,304 threshold, while the employer shall pay a total of 10.75%. These PRSI contributions can fall into one of several categories, depending on the type of work and income amount (for more details, see OECD, 2014 and O'Donoghue, 2014).[4]

Apart from PIT, *Universal Social Charge* (USC), similar to healthcare contribution, is levied at a certain rate. The USC rate is income-tested:

– On income up to EUR 10,036 per year: at 2%.
– On income between EUR 10,036 and EUR 16,016: at 4%.
– On income exceeding EUR 16,016: at 7%.

Table 11
Tax bands and tax rates (Ireland, 2013)

Taxable income (in EUR)				**Rate (%)**
Single worker	Married couple (single income)	Married couple (two incomes)	Single parent	
Up to 32,800	Up to 41,800	Up to a minimum threshold of (41,800 + lower income) and 65,600	Up to 36,800	20
Other				40

Source: OECD (2014).

Table 11 shows the tax rates applicable to different tax bands. A 20% rate is applied to single workers' income up to EUR 32,800 per year, the income of a married couple receiving only one wage capped at an annual EUR 41,800, and a single parent's income limited to EUR 36,800 per year, while there is no set limit for a couple with two incomes: the threshold of the first tax band for a married couple where both spouses earn a wage is either EUR 65,600 or the lesser income plus

[4] See also: Anon (2016).

EUR 41,800, whichever is lower. Any income exceeding these amounts is taxable at a rate of 40%.

The basic tax credit for an individual is EUR 1,650 per year, or double that amount, i.e. EUR 3,300, for a married couple. Moreover, every worker is entitled to an additional tax credit of EUR 1,650, and a single parent can claim an extra EUR 1,650 in addition to the above. A special tax credit of EUR 180 can be claimed by households in which one spouse does not earn an income while taking care of children, an elderly person, or another family member (OECD, 2014).

Universal child benefit amounts to EUR 1.560 per child yearly. Low-income families can also claim income-tested cash benefit. A family with two children would thus be entitled to a benefit, *B*, amounting to:

$$B = 0.6 * (31{,}304 - income) \quad (3)$$

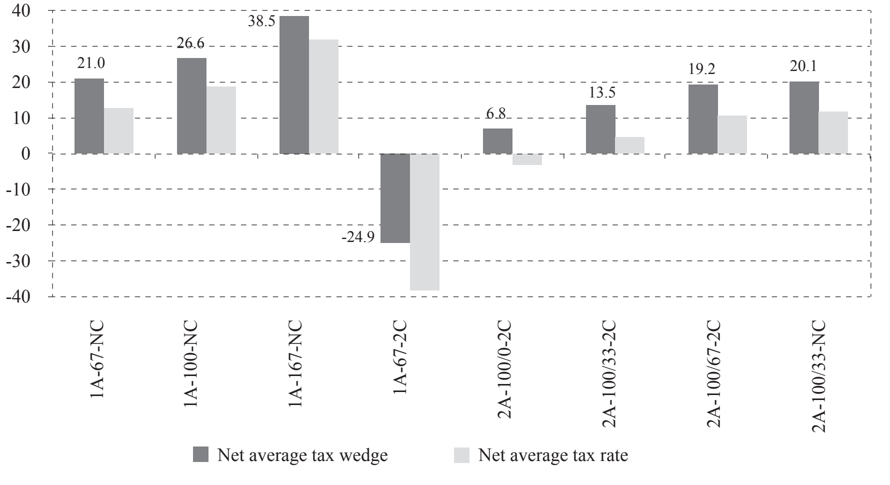
3.4.2 Tax wedge in Ireland

Tables A7 and A8 in the annex show a detailed calculation of tax burden indicators in Ireland in 2013. Figure 4 shows the net average tax wedge and net average tax rate for all eight hypothetical units.

Figure 4 shows a tax burden lower than what could be expected on the basis of the analysis of the Irish tax system. Notwithstanding the fact that the tax base comprises the entire gross wage amount, and that the tax rates are high, the net average tax wedge and net average tax rate in Ireland are significantly lower than those in the countries observed so far. This is due to tax credits and relatively high amounts of cash benefits which can even exceed total taxes under certain conditions.

FIGURE 4

Net average tax wedge and net average tax rate for hypothetical units (Ireland, 2013), in %



Source: Author's calculations based on OECD (2014).

FINANCIAL THEORY AND PRACTICE
40 (2) 201-230 (2016)

The case of a single parent with two children earning a gross wage amounting to 67% of AGW (1A-67-2C, figure 4) is particularly interesting. The applicable tax wedge is drastically lower than that of a taxpayer without children earning a gross wage of 67% of AGW (1A-67-NC): it is as low as -24.9%. This unusual negative rate, which is not typical for the countries observed so far, is due to cash family benefits and total tax credits. The net average tax rate is markedly low and negative, amounting to -38.3%. The only outlays are USC payments and a smaller amount for employee SICs. Figure 4 also shows that a couple with two children will have a lower tax burden than a couple without children. A couple where one spouse is a dependent and the other earns 100% of AGW (2A-100/0-2C) is also entitled to higher state supports, leading to significantly lower total tax and a tax wedge of only 6.8%.

3.5 THE NETHERLANDS

3.5.1 Basic components of labour income taxation in the Netherlands

The Dutch tax system is specific in some of its features. Employee SICs to the general unemployment fund are 0% for gross wages between EUR 17,501 and EUR 50,853. Employers pay a premium for their employees' unemployment and disability. An employee will pay EUR 1.250 per year for basic health insurance to a self-chosen private health insurance company; however, this contribution is not considered in the calculation of tax burden indicators because it represents a non-tax compulsory payment (see Urban, 2016). Old age pension contribution rate stands at 17.9% of taxable income if this income is less or equal to EUR 33,363 per year. Otherwise, the contribution is fixed and amounts to EUR 5,972. For annual gross wages lower than EUR 50,853, an employer can pay unemployment, disability, and similar contributions at a rate of up to 17.9% of gross wage.

Tax credit is partially deducted from PIT and partially from contributions. General tax credit amounts to EUR 2,001 per year, and work credit amounts to 17.1% of taxable income and is capped at EUR 1,723; a single parent can claim an additional EUR 947 of credit (OECD, 2014; de Vos and de Agostini, 2014).

Table 12
Tax bands and tax rates (the Netherlands, 2013)

Taxable income (in EUR)	Tax rate (%)	Contributions rate (%)
Up to 19,645	5.85	31.15
19,645 – 33,363	10.85	31.15
33,363 – 55,991	42	–
Over 55,991	52	–

Source: OECD (2014).

Cash benefits for families with two children comprise two components: a basic benefit of EUR 1,861 and an additional allowance which equals C and is calculated as follows:

$$C = 1{,}553 - 0.076 * (\textit{taxable income} - 26{,}147) \quad (4)$$

FINANCIAL THEORY AND PRACTICE
40 (2) 201-230 (2016)

Additional allowance amounting to *C* is not granted to families with two children whose taxable income exceeds EUR 46,581 per year.

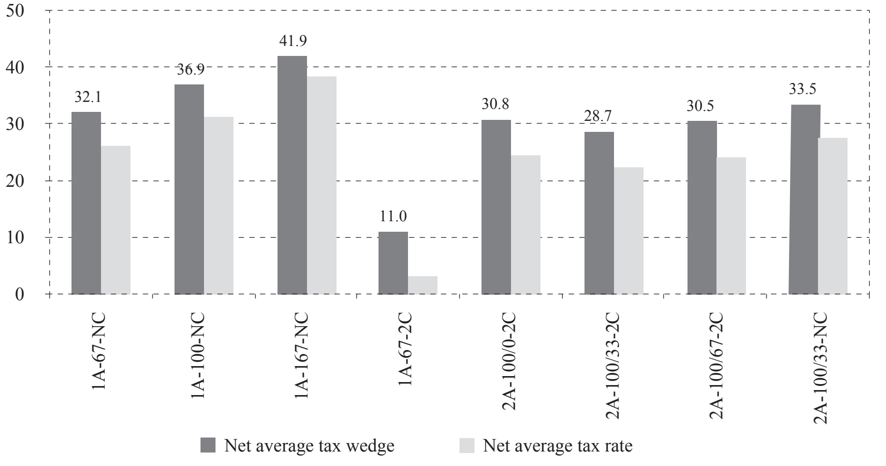
3.5.2 Tax wedge in the Netherlands

Tables A9 and A10 in the annex show a detailed calculation of tax burden indicators in the Netherlands in 2013. Figure 5 shows the net average tax wedge and net average tax rate for all eight hypothetical units.

Net average tax rate and net average tax wedge for single workers show expected tendencies. They are significantly lower for single parents with two children earning 67% of AGW (1A-67-2C), where the tax wedge is lower by as many as 21.1 percentage points when compared with the tax wedge of a single worker without children earning the same gross wage (1A-67-NC). This difference is again the result of cash family benefits. However, figure 5 shows somewhat unexpected tax wedge trends: a couple with two children and annual gross wages amounting to 100% and 0% of AGW (2A-100/0-2C) bears a relatively high tax burden, almost equal to the tax burden of a couple with two children and gross wages amounting to 100% and 33% of AGW (2A-100/33-2C). Moreover, the cash benefits they are granted are similar. Therefore, 2A-100/0-2C bears a higher tax burden than 2A-100/33-2C, but also a higher burden than couples with annual gross wages amounting to 100% and 67% of AGW (2A-100/67-2C).

Figure 5

Net average tax wedge and net average tax rate for hypothetical units (the Netherlands, 2013), in %



Source: Author's calculations based on OECD (2014).

4 COMPARISON OF TAX BURDEN ON LABOUR INCOME IN SELECTED COUNTRIES

Despite numerous differences in the tax systems of the observed countries, their SICs, PITs and cash family benefits are based on similar principles. Progressive tax schedules are applied in all of the observed countries, with a difference in the number and thresholds of tax bands and in the relevant tax rates; employee SICs always include old age pension contributions, while employer SICs comprise health insurance benefits, with a difference in the way in which contributions are determined and in the ways the rates are applied (Čok et al., 2013).

The results of net average tax wedge calculation are summarized in tables 13 and 14, separately for single worker units and couple units.

The results show that Italy has the highest share of taxes and SICs in total labour cost. Italy certainly has the highest tax wedge for all observed family types and all gross wage amounts, apart from the case of single parents with two children earning an annual gross wage of 67% of AGW (1A-67-2C). In the case of hypothetical unit 1A-67-2C, the highest tax wedge is found in Spain (30.3%), followed by Italy (28.4%) and Croatia (18.5%). The smallest tax wedge is found in the Netherlands and Ireland, which stands out as a country with a negative tax wedge. Spain takes the second place in almost all cases, while Ireland always takes the last. Therefore, coming up after Italy and Spain, Croatia and the Netherlands are placed somewhere in the middle when it comes to the size of the tax wedge. Ireland stands out with a very low, sometimes even negative, tax wedge.

Table 13

Comparison of the net average tax wedge for hypothetical units: single workers (as %), 2013

	1A-67-NC	1A-100-NC	1A-167-NC	1A-67-2C
Croatia	30.6	35.2	39.4	18.5
Italy	44.7	47.8	53.2	28.4
Spain	37.2	40.7	44.3	30.3
Ireland	21.0	26.6	38.5	-24.9
Netherlands	32.1	36.9	41.9	11.0

Source: Author's calculations based on OECD (2014).

Table 14

Comparison of the net average tax wedge for hypothetical units: couples (as %), 2013

	2A-100/0-2C	2A-100/33-2C	2A-100/67-2C	2A-100/33-BD
Croatia	22.2	27.8	29.2	32.9
Italy	38.2	40.2	42.9	44.7
Spain	34.8	36.4	37.6	37.5
Ireland	6.8	13.5	19.2	20.1
Netherlands	30.8	28.7	30.5	33.5

Source: Author's calculations based on OECD (2014).

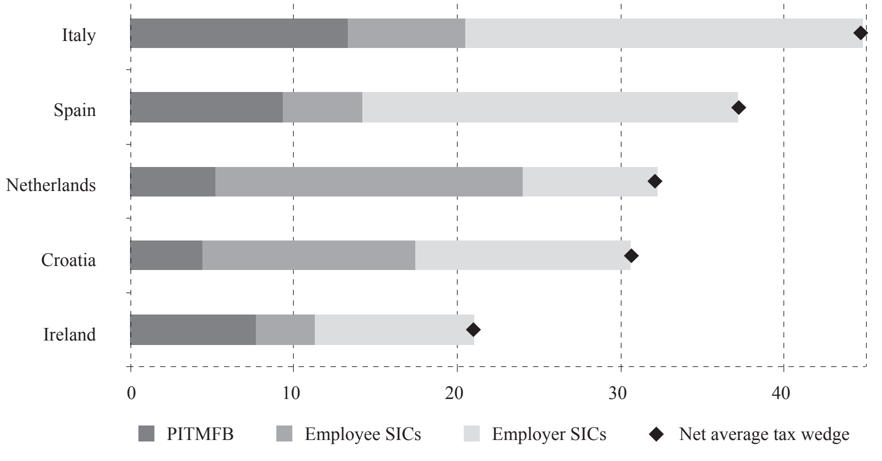
Charts 6 to 13 show a comparative analysis of the net average tax wedge for all selected countries, showing every hypothetical unit separately and decomposing the tax wedge into three elements, which represent the shares of: (a) PIT minus cash family benefits (PITMFB), (b) employee SICs, and (c) employer SICs.

Charts 6 to 9 show a comparison of tax wedge decompositions for single-worker hypothetical units. When it comes to a single worker without children earning a gross wage amounting to 67% of AGW (1A-67-NC, figure 6) and a single parent with two children and the same gross wage (1A-67-2C, figure 7), significant differences in the share of PITMFB in labour costs are found, especially so in Ireland, but in the Netherlands, Italy and Croatia as well. It has been noted above that this is the result of differences in personal allowances and tax credits, as well as of differences in cash family benefits.

If PITMFB shares for hypothetical units without children earning different gross wages are compared, it becomes evident that Italy owes its high tax wedge to its PITMFB share. It is only in the last observed case (1A-167-NC; figure 9) that the Netherlands's PITMFB share is the highest. When it comes to employee SICs share in labour cost, Croatia comes first (13%) for almost all gross wage levels. Employer SICs share in total labour cost is highest in Italy, 24.3%. Next comes Spain with 23%, i.e. 22.1% for taxpayers earning 167% of AGW. Employer SICs share amounts to 13.2% in Croatia and 9.7% in Ireland, and it varies in the Netherlands – it is always under 9%, but varies depending on wage.

Figure 6

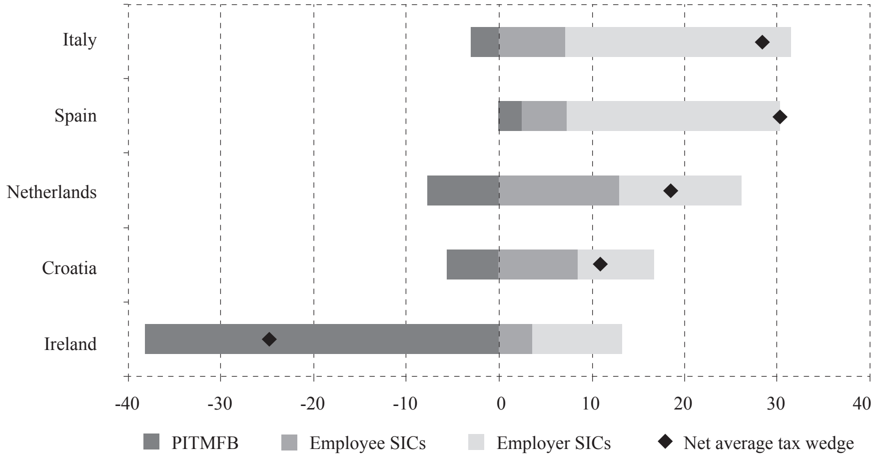
Decomposition of net average tax wedge for hypothetical unit 1A-67-NC, 2013, in %



Source: Author's calculations based on OECD (2014).

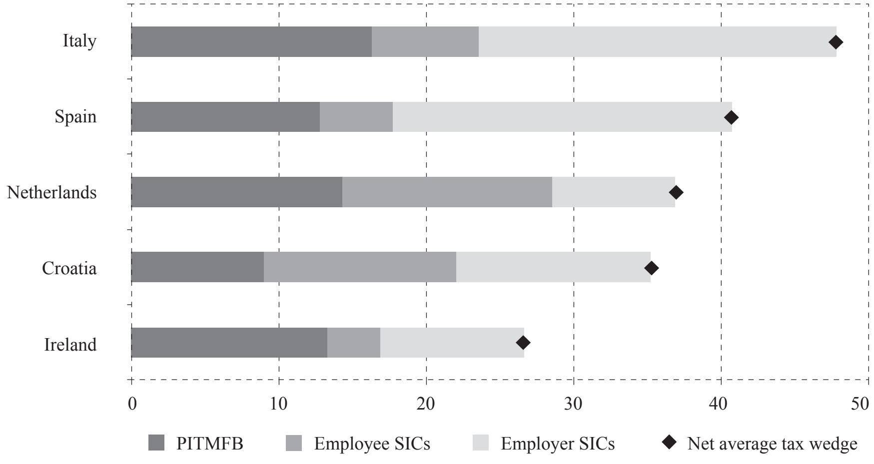
FINANCIAL THEORY AND PRACTICE
40 (2) 201-230 (2016)

FIGURE 7
Decomposition of net average tax wedge for hypothetical unit 1A-67-2C, 2013, in %



Source: Author's calculations based on OECD (2014).

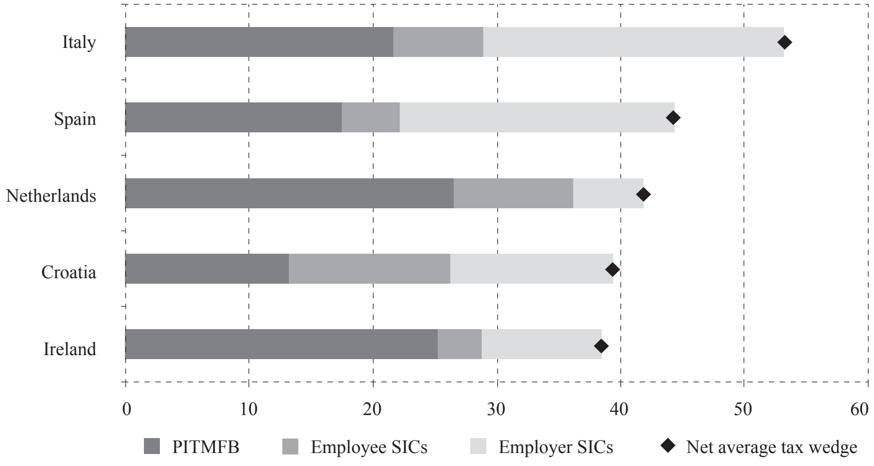
FIGURE 8
Decomposition of net average tax wedge for hypothetical unit 1A-100-NC, 2013, in %



Source: Author's calculations based on OECD (2014).

Figure 9

Decomposition of net average tax wedge for hypothetical unit 1A-167-NC, 2013, in %



Source: Author's calculations based on OECD (2014).

Charts 10 to 13 show comparative decompositions of net average tax wedge for hypothetical units – couples.

If couples with two children (figures 10, 11 and 12) are observed, the greatest share of PITMFB in the tax wedge is again found in Italy, apart from 2A-100/0-2C (figure 10), where the Netherlands comes first with 10.4%. For 2A-100/0-2C, Spain comes second and Italy comes third. The share of PITMFB for 2A-100/67-2C (figure 11) is lowest in Croatia, only 3%, followed by Ireland (5.8%), the Netherlands and Spain (8.2% and 9.7%, respectively), and Italy, with the highest share amounting to 11.5%. Employee contributions are still highest in Croatia, followed by the Netherlands, Italy, Spain, and Ireland as the country with the lowest share of employee contributions. Employer SICs share is still highest in Italy (24.3%), with Spain coming up second. Croatia is in the third place with 13.2%. The Netherlands and Ireland have lower employer SICs, under 10%.

Figures 12 and 13 show a couple with two children and a couple without children earning the same gross wages (2A-100/33-2C and 2A-100/33-NC, respectively), where one would expect that the tax wedge for the couple without children would always be higher. The greatest difference of 6.6 percentage points is observed in Ireland, followed by Croatia with a difference of 5.2 percentage points, while a difference of only 1.1 percentage points was found in Spain.

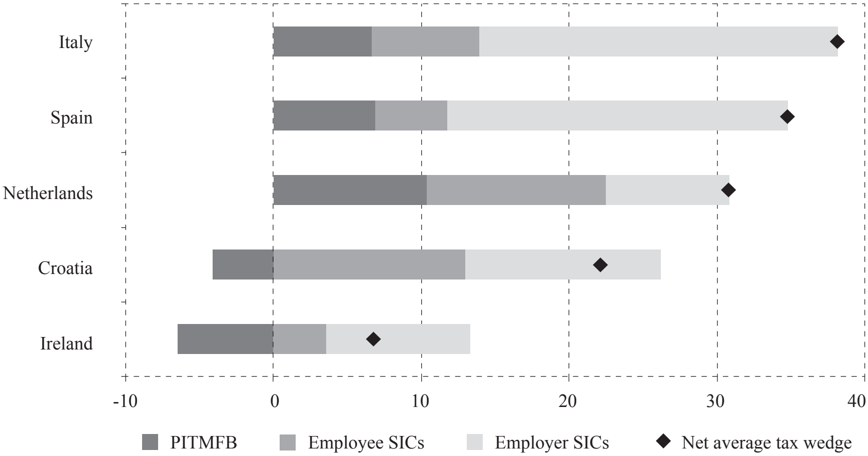
The Netherlands differs from other observed countries by the fact that the tax wedge falls from 30.8% for couples with two children earning 100 and 0% of AGW (2A-100/0-2C) to 28.7% for couples with two children earning 100 and

33% of AGW (2A-100/33-2C) and then rises again to 30.5% for couples with two children earning 100 and 67% of AGW (2A-100/67-2C).

The tax wedge for almost all observed wages is highest in Italy, and lowest in Ireland, while Croatia, in most cases, comes in the middle.

Figure 10

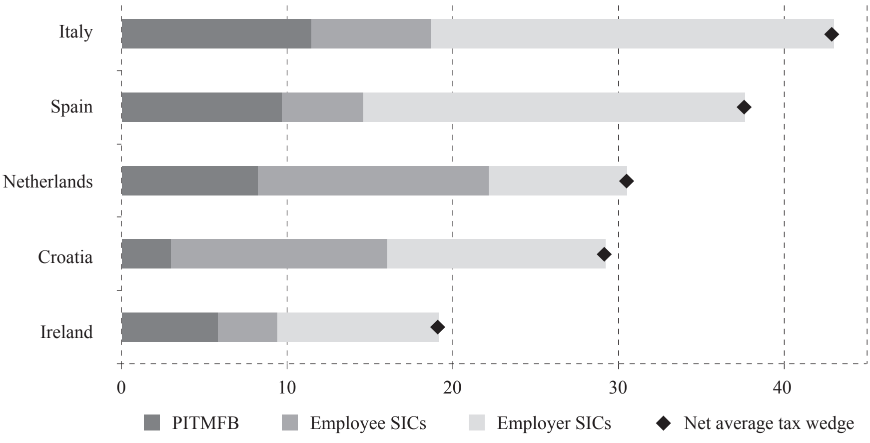
Decomposition of net average tax wedge for hypothetical unit 2A-100/0-2C, 2013, in %



Source: Author's calculations based on OECD (2014).

Figure 11

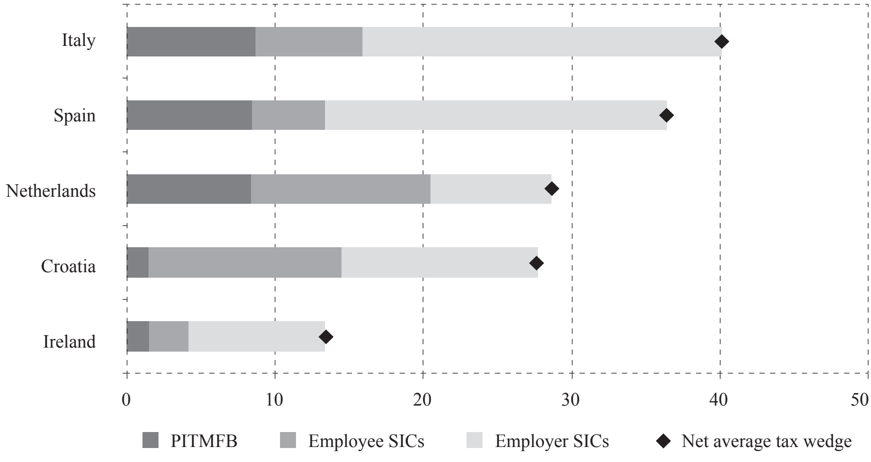
Decomposition of net average tax wedge for hypothetical unit 2A-100/67-2C, 2013, in %



Source: Author's calculations based on OECD (2014).

Figure 12

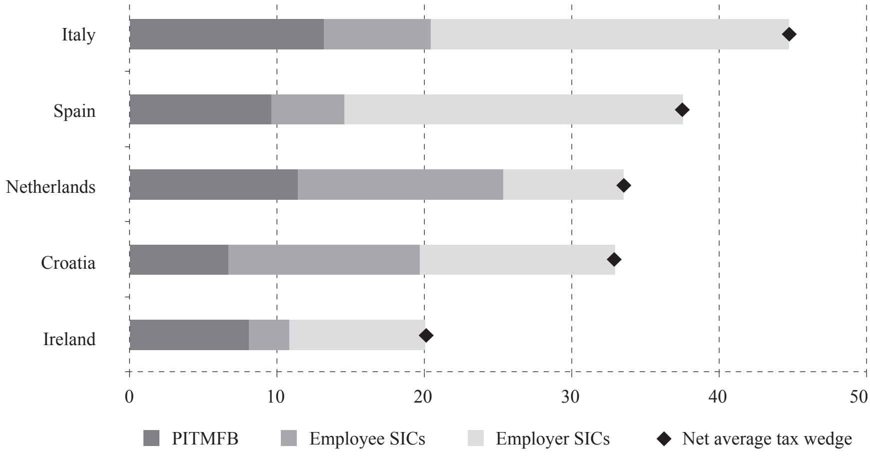
Decomposition of net average tax wedge for hypothetical unit 2A-100/33-2C, 2013, in %



Source: Author's calculations based on OECD (2014).

Figure 13

Comparative decomposition of net average tax wedge for hypothetical unit 2A-100/33-NC, 2013, in %



Source: Author's calculations based on OECD (2014).

FINANCIAL THEORY AND PRACTICE
40 (2) 201-230 (2016)

5 CONCLUSION

This paper has compared the tax burden on labour income for different family types in Croatia, Italy, Spain, Ireland and the Netherlands. The results show that Italy's tax wedge is, without a doubt, the highest for almost all observed family types. The Netherlands and Ireland in the northwest of Europe are characterized by low tax wedges, Ireland especially so.

Lower net average tax rates and lower tax wedge may imply a healthier economy when compared with a country imposing a higher tax on its citizens. Of course, a lower tax wedge is not a necessary condition for citizen satisfaction; citizens can be satisfied even if they pay higher taxes, under the condition that they are provided with satisfactory public services and goods from the state in return. The amount of taxes and other levies imposed on individuals of a certain country depends on a number of factors, but most citizens will be happier if more of their wage is spent on private spending than on state-imposed levies. However, private spending will again lead to an increase in government revenue from other taxes. The question therefore remains what amount of tax wedge is optimal.

REFERENCES

1. Anon, 2016. Kako izračunati plaću...? *Što* je to tax credit, pay slip, PRSI, USC...? Život u Dublinu. [online] Available at: <http://zivot-u-dublinu.com/kako-izracunati-placu-sto-je-to-tax-credit-pay-slip-prsi-usc/>.
2. Blažić, H. and Trošelj, I., 2012. Međunarodna usporedba poreznog opterećenja radne snage: utjecaj nove metodologije na položaj Hrvatske. In: L. Božina, M. Gonan-Božac and D. Učkar, eds. *Financije i menadžment u globalnoj ekonomiji*. Pula: Sveučilište Jurja Dobrile u Puli, Odjel za ekonomiju i turizam, pp. 185-204.
3. CBS, 2014. *Prosječna mjesečna isplaćena neto-plaća po zaposlenome u pravnim osobama Republike Hrvatske za 2013. i Prosječna mjesečna bruto-plaća po zaposlenome u pravnim osobama Republike Hrvatske za 2013*. [online] Available at: <http://narodne-novine.nn.hr/clanci/sluzbeni/2014_03_32_596.html>.
4. CBS, 2016. *Statistika u nizu: Zaposlenost i plaće (Statistics in line: Employment and wages)*. [online] Available at: <http://www.dzs.hr/Hrv_Eng/Pokazatelji/MSI ZAPOSLENOST I PLACE.xlsx>.
5. CNB, 2016. *CNB midpoint exchange rate*. [online] Available at: <http://www.en/statistics/statistical-data/central-bank-cnb/cnb-midpoint-exchange-rate>.
6. Čok, M. [et al.], 2013. Taxation of wages in the Alps-Adriatic region. *Financial Theory and Practice*, 37(3), pp. 259-277. Available at: <http://hrcak.srce.hr/107921?lang=en>.
7. de Vos, K. and de Agostini, P., 2014. *EUROMOD Country Report: Netherlands*. [online] Available at: <https://www.iser.essex.ac.uk/files/euromod/country-reports/Year5/CR_NL_2009_13_Final.pdf>.
8. HZMO, 2016. *Cenzusi i svote doplatka za djecu*. [online] Available at: <http://www.mirovinsko.hr/default.aspx?ID=100>.
9. IJF, 2016. *Leksikon javnih financija*. [online] Available at: <http://www.ijf.hr/hr/korisne-informacije/leksikon-javnih-financija/14/>.
10. Minimum Wage Act (Zakon o minimalnoj plaći), NN 39/13. [online] Available at: <http://narodne-novine.nn.hr/clanci/sluzbeni/2013_04_39_720.html>.
11. O'Donoghue, C., 2014. *EUROMOD Country Report: Ireland 2009-2013*. [online] Available at: <https://www.iser.essex.ac.uk/files/euromod/country-reports/Year5/CR_IE_Year5_01082014.pdf>.
12. OECD, 2014. *Taxing Wages 2014*. Paris: OECD.
13. Personal Income Tax Act. (Zakon o porezu na dohodak), NN 177/04, 73/08, 80/10, 114/11, 22/12, 144/12, 43/13, 120/13, 125/13, 148/13, 83/14, 143/14. [online] Available at: <http://www.zakon.hr/z/85/Zakon-o-porezu-na-Personal income>.
14. Social Insurance Contributions Act Amendments Act (Zakon o izmjenama i dopunama Zakona o doprinosima), NN 22/12. [online] Available at: <http://narodne-novine.nn.hr/clanci/sluzbeni/2012_02_22_572.html>.
15. Urban, I., 2014. Supports for households with children. *Newsletter,* No. 88. [online] Available at: <http://www.ijf.hr/upload/files/file/ENG/newsletter/88.pdf>.
16. Urban, I., 2016. Tax wedge on labour income in Croatia and the European Union. *Financial Theory and Practice,* 40(2), pp. 157-168. doi: 10.3326/fintp.40.2.1

ANNEX

CALCULATION OF TAX BURDEN INDICATORS FOR HYPOTHETICAL UNITS IN SELECTED COUNTRIES

CROATIA

Table A1

Calculation of tax burden indicators for hypothetical units: single workers (Croatia, 2013)

	1A-67-NC	1A-100-NC	1A-167-NC	1A-67-2C
1. Gross wage (in EUR)	8,202	12,303	20,505	8,202
2. Employer SICs	1,247	1,870	3,117	1,247
3. Employee SICs	1,640	2,461	4,101	1,640
3.1. Paid into the 1st pension insurance pillar	1,230	1,845	3,076	1,230
3.2. Paid into the 2nd pension insurance pillar	410	615	1,025	410
4. Work-related expenses	–	–	–	–
5. Tax relief	–	–	–	–
6. Personal income	6,562	9,842	16,404	6,562
7. Personal allowance	3,486	3,486	3,486	7,671
8. Tax base	3,076	6,357	12,918	0
9. PIT	369	1,136	2,776	0
10. Tax credit	–	–	–	–
11. PIT after tax credit	369	1,136	2,776	0
12. Local taxes (12% local government surtax)	44	136	333	0
13. Total taxes	413	1,272	3,110	0
14. Cash family benefits	0	0	0	727
15. Net wage	6,148	8,570	13,294	6,562
16. Labour cost	9,449	14,173	23,622	9,449
17. Total taxes and contributions	3,300	5,603	10,327	2,887
17.1. Tax levies	2,890	4,987	9,303	1,750
17.2. Non-tax payments	410	615	1,025	410
18. Net average tax rate (%)	20.0	25.3	30.2	6.1
19. Net average tax wedge (%)	30.6	35.2	39.4	18.5

Note: According to the Taxing Wages methodology (OECD, 2014), employee SICs paid into the 2nd pension insurance pillar are not tax payments. Item no. 17 is therefore divided into tax (17.1.) and non-tax payments (17.2.), and only tax payments are included in tax burden indicators calculation.

Source: Author's calculations.

FINANCIAL THEORY AND PRACTICE
40 (2) 201-230 (2016)

Table A2

Calculation of tax burden indicators for hypothetical units: couples (Croatia, 2013)

	2A-100/ 0-2C	2A-100/ 33-2C	2A-100/ 67-2C	2A-100/ 33-NC
1. Gross wage (in EUR)	12,303	16,404	20,505	16,404
2. Employer SICs	1,870	2,493	3,117	2,493
3. Employee SICs	2,461	3,281	4,101	3,281
3.1. Paid into the 1st pension insurance pillar	1,845	2,461	3,076	2,461
3.2. Paid into the 2nd pension insurance pillar	615	820	1,025	820
4. Work-related expenses	–	–	–	–
5. Tax relief	–	–	–	–
6. Personal income	9,842	13,123	16,404	13,123
7. Personal allowance	9,412	11,155	11,155	6,972
8. Tax base	431	2,174	5,249	6,357
9. PIT	52	261	630	1,136
10. Tax credit	–	–	–	–
11. PIT after tax credit	52	261	630	1,136
12. Local taxes (12% local government surtax)	6	31	76	136
13. Total taxes	58	292	706	1,272
14. Cash family benefits	632	0	0	0
15. Net wage	9,785	12,831	15,698	11,851
16. Labour cost	14,173	18,897	24,161	18,897
17. Total taxes and contributions	3,756	6,066	7,923	7,047
17.1. Tax payments	3,141	5,246	6,899	6,226
17.2. Non-tax payments	615	820	1,025	820
18. Net average tax rate (%)	10.3	16.8	18.4	22.8
19. Net average tax wedge (%)	22.2	27.8	29.2	32.9

Note: See note under table A1.

Source: Author's calculations.

ITALY

Table A3

Calculation of tax burden indicators for hypothetical units: single workers (Italy, 2013)

	1A-67-NC	1A-100-NC	1A-167-NC	1A-67-2C
1. Gross wage (in EUR)	19,802	29,704	49,506	19,802
2. Employer SICs	6,353	9,529	15,882	6,353
3. Employee SICs	1,879	2,819	4,738	1,879
4. Work-related expenses	–	–	–	–
5. Tax relief	–	–	–	–
6. Personal income	17,923	26,885	44,768	17,923
7. Personal allowance	–	–	–	–
8. Tax base	17,923	26,885	44,768	17,923
9. PIT	4,239	6,659	13,332	4,239
10. Tax credit	1,240	969	342	2,831
11. PIT after tax credit	2,999	5,690	12,990	1,409
12. Local taxes	471	707	1,177	471
13. Total taxes	3,470	6,397	14,167	1,880
14. Cash family benefits	0	0	0	2,671
15. Net wage	11,453	20,487	30,601	18,714
16. Labour cost	26,155	39,233	65,388	26,155
17. Total taxes and contributions	11,703	18,745	34,787	10,112
18. Net average tax rate (%)	27.0	31.0	38.2	5.5
19. Net average tax wedge (%)	44.7	47.8	53.2	28.4

Source: Author's calculations based on OECD (2014).

Table A4

Calculation of tax burden indicators for hypothetical units: couples (Italy, 2013)

	2A-100/ 0-2C	2A-100/ 33-2C	2A-100/ 67-2C	2A-100/ 33-NC
1. Gross wage (in EUR)	29,704	39,605	49,506	39,605
2. Employer SICs	9,529	12,705	15,882	12,705
3. Employee SICs	2,819	3,758	4,698	3,758
4. Work-related expenses	–	–	–	–
5. Tax relief	–	–	–	–
6. Personal income	26,885	35,846	44,808	35,846
7. Personal allowance	–	–	–	–
8. Tax base	26,885	35,846	44,808	35,846
9. PIT	6,659	8,720	10,898	8,720
10. Tax credit	3,094	4,175	3,722	2,740
11. PIT after tax credit	3,565	4,545	7,176	5,980
12. Local taxes	707	943	1,178	943
13. Total taxes	4,272	5,488	8,354	6,923
14. Cash family benefits	1,644	932	861	0
15. Net wage	24,257	31,290	37,314	28,923
16. Labour cost	39,233	52,310	65,388	52,310
17. Total taxes and contributions	16,620	21,951	28,934	23,387
18. Net average tax rate (%)	18.3	21.0	24.6	27.0
19. Net average tax wedge (%)	38.2	40.2	42.9	44.7

Source: Author's calculations based on OECD (2014).

FINANCIAL THEORY AND PRACTICE
40 (2) 201-230 (2016)

SPAIN

TABLE A5

Calculation of tax burden indicators for hypothetical units: single workers (Spain, 2013)

	1A-67-NC	1A-100-NC	1A-167-NC	1A-67-2C
1. Gross wage (in EUR)	17,351	26,027	43,378	17,351
2. Employer SICs	5,188	7,782	12,291	5,188
3. Employee SICs	1,102	1,653	2,610	1,102
4. Work-related expenses	2,652	2,652	2,652	2,652
5. Tax relief	0	0	0	2,150
6. Personal income	13,597	21,722	38,116	11,447
7. Personal allowance	–	–	–	–
8. Tax base	13,597	21,722	38,116	11,447
9. PIT	3,365	5,587	11,016	2,833
10. Tax credit	1,275	1,275	1,275	2,289
11. PIT after tax credit	2,091	4,312	9,741	543
12. Local taxes	–	–	–	–
13. Total taxes	2,091	4,312	9,741	543
14. Cash family benefits	0	0	0	0
15. Net wage	14,159	20,062	31,027	15,706
16. Labour cost	22,539	33,809	55,670	22,539
17. Total taxes and contributions	8,380	13,747	24,643	6,834
18. Net average tax rate (%)	18.4	22.9	28.5	9.5
19. Net average tax wedge (%)	37.2	40.7	44.3	30.3

Source: Author's calculations based on OECD (2014).

TABLE A6

Calculation of tax burden indicators for hypothetical units: couples (Spain, 2013)

	2A-100/ 0-2C	2A-100/ 33-2C	2A-100/ 67-2C	2A-100/ 33-NC
1. Gross wage (in EUR)	26,027	34,703	43,378	34,703
2. Employer SICs	7,782	10,376	12,970	10,376
3. Employee SICs	1,653	2,204	2,755	2,204
4. Work-related expenses	2,652	6,732	5,304	6,732
5. Tax relief	3,400	0	0	0
6. Personal income	18,322	25,767	35,320	25,767
7. Personal allowance	–	–	–	–
8. Tax base	18,322	25,767	35,320	25,767
9. PIT	4,567	6,588	8,952	6,588
10. Tax credit	2,234	2,756	3,509	2,276
11. PIT after tax credit	2,333	3,832	5,443	4,312
12. Local taxes	–	–	–	–
13. Total taxes	2,333	3,832	5,443	4,312
14. Cash family benefits	0	0	0	0
15. Net wage	22,041	28,666	35,180	28,187
16. Labour cost	33,809	45,079	56,348	45,079
17. Total taxes and contributions	11,768	16,412	21,168	16,892
18. Net average tax rate (%)	15.3	17.4	18.9	18.8
19. Net average tax wedge (%)	34.8	36.4	37.6	37.5

Source: Author's calculations based on OECD (2014).

FINANCIAL THEORY AND PRACTICE
40 (2) 201-230 (2016)

IRELAND

Table A7

Calculation of tax burden indicators for hypothetical units: single workers (Ireland, 2013)

	1A-67-NC	1A-100-NC	1A-167-NC	1A-67-2C
1. Gross wage (in EUR)	21,587	32,381	53,968	21,587
2. Employer SICs	2,321	3,481	5,802	2,321
3. Employee SICs	863	1,295	2,159	863
4. Work-related expenses	–	–	–	–
5. Tax relief	–	–	–	–
6. Personal income	21,587	32,381	53,968	21,587
7. Personal allowance	–	–	–	–
8. Tax base	21,587	32,381	53,968	21,587
9. PIT	4,317	6,476	15,239	4,317
10. Tax credit	3,300	3,300	3,300	4,950
11. PIT after tax credit	1,017	3,176	11,939	0
12. Local taxes (USC)	830	1,585	3,097	830
13. Total taxes	1,847	4,762	15,036	830
14. Cash family benefits	0	0	0	9,966
15. Net wage	18,876	26,324	36,774	29,860
16. Labour cost	23,908	35,862	59,770	23,908
17. Total taxes and contributions	5,031	9,538	22,996	4,014
18. Net average tax rate (%)	12.6	18.7	31.9	-38.3
19. Net average tax wedge (%)	21	26.6	38.5	-24.9

Source: Author's calculations based on OECD (2014).

Table A8

Calculation of tax burden indicators for hypothetical units: couples (Ireland, 2013)

	2A-100/ 0-2C	2A-100/ 33-2C	2A-100/ 67-2C	2A-100/ 33-NC
1. Gross wage (in EUR)	32,381	43,175	53,968	43,175
2. Employer SICs	3,481	4,398	5,802	4,398
3. Employee SICs	1,295	1,295	2,159	1,295
4. Work-related expenses	–	–	–	–
5. Tax relief	–	–	–	–
6. Personal income	32,381	43,175	53,968	43,175
7. Personal allowance	–	–	–	–
8. Tax base	32,381	43,175	53,968	43,175
9. PIT	6,476	8,635	10,794	8,635
10. Tax credit	5,760	6,600	6,600	6,600
11. PIT after tax credit	716	2,035	4,194	2,035
12. Local taxes	1,585	1,816	2,415	1,816
13. Total taxes	2,302	3,851	6,609	3,851
14. Cash family benefits	4,632	3,120	3,120	0
15. Net wage	33,416	41,148	48,320	38,028
16. Labour cost	35,862	47,573	59,770	47,573
17. Total taxes and contributions	7,078	9,544	14,569	9,544
18. Net average tax rate (%)	-3.2	4.7	10.5	11.9
19. Net average tax wedge (%)	6.8	13.5	19.2	20.1

Source: Author's calculations based on OECD (2014).

FINANCIAL THEORY AND PRACTICE
40 (2) 201-230 (2016)

THE NETHERLANDS

TABLE A9

Calculation of tax burden indicators for hypothetical units: single workers (the Netherlands, 2013)

	1A-67-NC	1A-100-NC	1A-167-NC	1A-67-2C
1. Gross wage (in EUR)	32,073	48,109	80,182	32,073
2. Employer SICs	2,862	4,405	4,864	2,862
3. Employee SICs	6,562	7,462	8,245	2,985
4. Work-related expenses	–	–	–	–
5. Tax relief	2,413	3,590	3,941	2,413
6. Personal income	31,129	46,328	76,727	31,129
7. Personal allowance	–	–	–	–
8. Tax base	31,129	46,328	76,727	31,129
9. PIT	2,395	8,083	22,924	2,395
10. Tax credit	589	550	403	1,355
11. PIT after tax credit	1,806	7,533	22,521	1,040
12. Local taxes	–	–	–	–
13. Total taxes	1,806	7,533	22,521	1,040
14. Cash family benefits	0	0	0	3,035
15. Net wage	23,705	33,114	49,416	31,083
16. Labour cost	34,935	52,514	85,046	34,935
17. Total taxes and contributions	11,230	19,400	35,630	6,887
18. Net average tax rate (%)	26.1	31.2	38.4	3.1
19. Net average tax wedge (%)	32.1	36.9	41.9	11.0

Source: Author's calculations based on OECD (2014).

TABLE A10

Calculation of tax burden indicators for hypothetical units: couples (the Netherlands, 2013)

	2A-100/ 0-2C	2A-100/ 33-2C	2A-100/ 67-2C	2A-100/ 33-NC
1. Gross wage (in EUR)	48,109	64,146	80,182	64,146
2. Employer SICs	4,405	5,751	7,267	5,751
3. Employee SICs	6,339	8,453	12,275	9,689
4. Work-related expenses	–	–	–	–
5. Tax relief	3,590	4,825	6,003	4,825
6. Personal income	46,328	62,258	77,457	62,258
7. Personal allowance	–	–	–	–
8. Tax base	46,328	62,258	77,457	62,258
9. PIT	8,083	9,015	10,478	9,015
10. Tax credit	761	1,296	1,467	1,064
11. PIT after tax credit	7,322	7,719	9,011	7,951
12. Local taxes	–	–	–	–
13. Total taxes	7,322	7,719	9,011	7,951
14. Cash family benefits	1,880	1,861	1,861	0
15. Net wage	36,328	49,835	60,757	46,505
16. Labour cost	52,514	69,897	87,449	69,897
17. Total taxes and contributions	18,066	21,923	28,553	23,391
18. Net average tax rate (%)	24.5	22.3	24.2	27.5
19. Net average tax wedge (%)	30.8	28.7	30.5	33.5

Source: Author's calculations based on OECD (2014).