Taxation of wages in the Alps-Adriatic region

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Abstract

Austria, Croatia, Hungary, Italy and Slovenia differ not only in level of average gross wage but also in the overall taxation of wages. While Croatia, Hungary and Slovenia tax the average gross wage less than Italy and Austria, a comparison of gross wages that are in absolute values close to the average gross wages of Italy and Austria or higher shows the reverse, i.e. it reveals a considerably higher taxation in the former three countries.

Keywords: wages, personal income tax, social security contributions, tax wedge

1 INTRODUCTION

The tax system as a whole and the taxation of wages in particular are important factors that influence the international positioning and overall competitiveness of countries, irrespective of their geographical proximity or membership in the same economic union. To a large extent this is the case with Austria, Croatia, Hungary, Italy and Slovenia, five neighbouring countries that (except Croatia) are members of the European Union (EU), sharing its single market and applying common policies regarding free movement of goods, capital, services and people[1]. Due to their different socio-political backgrounds, the gross domestic product (GDP) per capita of these countries varies substantially. In 2010, Austria recorded 126% of the EU average GDP per capita in purchasing power standards followed by Italy (100%), Slovenia (85%), Hungary (65%) and Croatia (61%) (EUROSTAT, 2012). In consequence, the levels of annual average gross wages (below, average gross wages) in those countries also vary in the ratio of 1:4.5. Moreover, the availability of good traffic connections and the open labour market stimulate employment in the neighbouring countries, mostly for workers from countries with lower incomes seeking better-paid employment. These countries also compete for foreign direct investments and try to attract regional headquarters of multinational companies. It is beyond the scope of this paper to capture the complexity of the factors that determine countries' international competitiveness. There is a broad spectrum of these factors, including institutions, the education system and the macroeconomic environment (European Commission, 2011b; World Economic Forum, 2012; Centre for International Competitiveness, 2012)[2]. Taxes on wages represent a large proportion of labour costs and thus also play an important role. In addition, taxes on labour, among which taxes on wages comprise a major share, provide substantial revenue for government budgets[3].

[1] These countries are also part of the Alps-Adriatic working community (http://www.alpeadria.org), which is also reflected in the article's title.

[2] There are numerous other research studies dealing with different aspects of competitiveness. Overesch and Johannes (2009), for example, stress the process of cutting corporate income taxes in Western Europe as an endeavour to retain a competitive position threatened by the low wages in Eastern Europe. Delakorda and Strojan-Kastelec (2000) confirm that Slovenia's main disadvantage compared to other transitional countries lies in its high labour costs and high taxation of wages.

[3] In 2010, taxes on labour contributed 56.8% (23.8%) of total taxation (of GDP) in Austria, 43.4 % (14.3 %) in Croatia, 48.3% (18.2%) in Hungary, 51.6% (21.8%) in Italy, and 51.8% (19.7%) in Slovenia (European Commission, 2012; Ministry of Finance, 2010).

The aim of this paper is to compare taxation of wages in the above mentioned countries and reveal how they differ in the overall tax burden. Firstly, an overview of the personal income tax systems and social security contribution rates is presented, followed by the calculation of taxes and consequently tax wedges for different gross wage levels.

The taxation levels of wages for selected household types are regularly published by the OECD (i.e. OECD, 2011) and the EU monitors taxation trends within the EU including taxes on labour (European Commission, 2011a). KPMG annually publishes an overview of personal income tax and social security contribution rates for a range of countries with special emphasis on the highest rates of personal income tax (KPMG, 2011), while IBFD publishes an overall review of taxes in the European countries (IBFD, 2010). A broad range of tax information is also available from National Ministries of Finance and Tax administration websites. Our analysis follows the work of Grulja (2011), which is based on the OECD methodology regarding the definitions of wages, the taxes included and the tax wedge. It also covers Croatia, even though it is not an OECD member[4].We calculate taxes for the average gross wage in each country (as does the OECD) and in addition, we calculate country-specific taxes for a common set of annual gross wages (below, gross wages) equal in absolute terms and ranging from EUR 10,000 to EUR 100,000. The results are presented for a single employee without children or other dependent family members.

In order to facilitate a comparison with the OECD results, the base year for calculation is 2010. One should thus be aware that in the turbulent times of the current financial crisis some of our calculated figures might change when the latest parameters of a country's specific tax systems are taken into account. The fact is that nowadays countries frequently adjust their tax systems. However, we believe that such changes are not so extensive as to overturn our findings, which are that Croatia, Hungary and Slovenia tax their average gross wages less than Austria and Italy and in addition, their average gross wages are also considerably lower in absolute terms compared to Italy and Austria. Yet when we compare the overall taxation of gross wages that in absolute values are close to the average gross wages of Italy and Austria, the order is reversed as they are taxed considerably higher in Croatia, Hungary and Slovenia, implying that the tax systems of these three countries are competitive at the level of relatively low gross wages (in absolute terms). From the policy point of view, our conclusions suggest that these three countries are caught in an inherent Catch-22, as their strategic goals are to achieve international competitiveness and the average level of EU development, while their tax systems do not boost their international competitiveness in the segment

[4] The calculations for Croatia are based on the works of Cipek and Šnajder (2010), Grdović Gnip and Tomić (2010), Tomić and Grdović Gnip (2011), Turković Jarža (2010). Taxation of wages in Croatia is also covered by Urban (2009).

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of individuals with high gross wages, whom we believe to represent the spearhead of innovations, knowledge and productivity.

The structure of the paper is as follows. Section two includes the methodology and assumptions used in the calculation of taxes and an overview of the tax parameters. Section three presents the taxation of wages by countries. Section four provides a comparison of taxation among countries, while the last section concludes.

2 METHODOLOGY AND ASSUMPTIONS

As already noted, our analysis is based on the OECD methodology regarding the definitions of wages, the taxes included and the tax wedge. The OECD definition of average worker has been broadened from average manual production worker (ISIC Sector D) to average worker (ISIC Sectors C to K), including both manual and non-manual workers[5]. As a general rule, all remunerations paid out to the workers are taken into account including the payment of overtime work and different supplements paid in money, while capital incomes (interests, dividends and capital gains) and fringe benefits are not included (OECD, 2011).

Table 1 includes the list of general assumptions applied to all five countries. Country-specific details are presented further on in the text.

Table 1
General assumptions

Employee characteristics (tax payer)	− single − without children/other dependent family members − wage as the only income source in 2010
Gross wage (EUR)	− average gross wage − 10,000; 20,000; 30,000; 50,000; 100,000
Social security contributions (SSC)	− employer's social security contributions − employee's social security contributions
Other contributions and taxes by employer	− other employer's contributions − payroll tax
Tax relief	− standard tax allowances and tax credits
Personal income tax (PIT)	− all levels (central and sub-central)
Calculated categories (results)	− labour costs − tax wedge − effective tax rate (ETR) (for the employer; for the employee and overall) − net wage as a share of the gross wage − net wage as a share of labour costs

Source: Own calculations.

[5] Average gross wages used in the paper are taken from the OECD (OECD, 2011) and thus differ from "usual" average gross wages, calculated by national statistical offices. Since Croatia is not an OECD member, its average gross wage is calculated according to the OECD definition, by the methodology of Tomić and Grdović Gnip (2011), using data from DZS (2012).

The taxes are calculated on the assumption of a single adult person without children or other dependent family members, who is receiving a wage (income from employment) as his/her sole income source. Besides the average gross wage, which differs from one country to another, a common set of gross wages ranging between EUR 10,000 and EUR 100,000 is taken into consideration. Among the taxes, apart from personal income tax (PIT), the employer's and employee's social security contributions (SSC) and other compulsory contributions and taxes are taken into account. PIT includes central (national) personal income tax as well as personal income taxes levied by sub-central levels of government. Labour costs are defined as the employer's SSC (and other employer contributions and taxes) added to the gross wage of an employee. Other costs connected with employment, e.g. travel-to-work allowance are not included. The tax wedge is defined as the difference between the labour costs of the employer and the corresponding net take-home pay of the employee. In the subsequent text, the tax wedge is calculated by expressing overall taxes as a percentage of labour costs.

Labour costs might be a better common denominator for international comparisons but due to the SSC ceiling and progressive PIT systems it would be very difficult to start calculations from the top (i.e. from labour costs) downwards. Gross wages as common denominator are thus more user friendly and they are also used by the OECD. Furthermore we used the OECD results as a benchmark to verify the correctness of our calculations.

The employee's effective tax rate (ETR) is defined as the overall taxes paid by the employee divided by the gross wage. The employer's ETR comprises of overall taxes paid by the employer divided by the gross wage and the overall ETR stands for overall taxes paid by the employer as well as the employee divided by the gross wage.

Common characteristics of all countries regarding the taxation of wages are:
- a progressive national PIT tax schedule[6];
- the application of tax relief in the form of tax allowances and/or tax credits; and
- the taxation of gross wages with the employers and employees SSC:
  - the basis for SSC is the gross wage;
  - the employees' SSC always include pension contributions; and
  - the employers' SSC always include healthcare contributions.

On the other hand, tax systems vary from country to country in several respects, for example in the number and types of tax relief, the number and width of the PIT schedule brackets, the levels of PIT marginal tax rates across the schedule brackets,

[6] Even though the flat-tax concept has dominated PIT reforms in Eastern Europe (Moore, 2005; Ivanova, Keen and Klemm, 2005; Fuest, Peichl and Schaefer, 2008), none of these countries had implemented such a tax by 2010.

the numbers and types of SSC, as well as the rates and definitions of their bases. The main characteristics of these country-specific tax parameters are presented in table 2.

TABLE 2

Tax parameters in 2010

Type of taxation		Country				
		Slovenia	**Italy**	**Austria**	**Hungary**	**Croatia[1]**
1	**Central PIT**					
1.1	Number of PIT schedule tax brackets	3	5	4	2	5
1.2	PIT marginal tax rates (%)	16; 27; 41	23; 27; 38; 41; 43	0; 36.5; 43.21; 50	17; 32	13.5; 25; 30; 37.5; 42.5
1.3	Threshold for the highest marginal tax rate (EUR)	15,058	75,000	60,000	18,150	41,481
1.4	Tax reliefs	tax allowances	tax credits	tax allowances and tax credits	tax credits	tax allowances
2	**Sub-central PIT rates (%)**	–	regional: 0.9 – 1.4; local: 0 – 0.8	–	–	local: 0 – 18
3	**Other employee's taxes (%)**	–	–	–	–	crisis tax (0; 2; 4 of the net wage)
4	**SSC**					
4.1	Annual ceiling (EUR)	–	for employees and employers for all SSC; ceiling at 92,147 of the base (fixed amount above the ceiling)	for employees and employers for all SSC; ceiling at 49,320 of the base	for pension SSC for employees; upper amount of contributions is set at 2,570	for pension SSC for employees; ceiling at 76,207 of the base
4.2	Employee's SSC rates (%)	22.1	9.49; 10.49; (fixed amount above the ceiling)	18.1	17	20
4.3	Employer's SSC rates (%)	16.1	32.08; (fixed amount above the ceiling)	21.7	27	17.2
4.4	Other employer's contributions (%)	–	–	Social Health Security Fund (1.53 of the gross wage)	–	–
5	**Payroll tax (%)**	–	–	regional and local (7.91 of the gross wage)	contribution for professional education (1.5 of the gross wage)	–

[1] There were four marginal tax rates (15%, 25%, 35% and 45%) in Croatia in the first half of 2010, replaced by only three marginal tax rates (12%, 25% and 40%) as of 1st July 2010. As a consequence, the annual PIT for 2010 is based on "average PIT schedule" with five marginal tax rates of 13.5%, 25%, 30%, 37.5% and 42.5%. Crisis tax in Croatia in 2010 was levied till 31st October 2010.

PIT – personal income tax. SSC – social security contributions.

Source: Cipek and Šnajder (2010); Tomić and Grdović Gnip (2011); IBFD (2010); OECD (2011); Turković Jarža (2010).

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As table 2 shows, there are substantial differences among the countries regarding the overall rate of SSC and the highest marginal PIT rate. However, the effective taxation also depends on the system of tax reliefs and other details of the tax schedules, i.e. how quickly the highest marginal PIT rate is reached. Another important element is the SSC ceiling, Slovenia being the only country not to have one.

3 TAXATION OF WAGES BY COUNTRIES

Tables 3 to 7 illustrate the taxation of different levels of gross wage for all five countries. First, the average gross wages according to the OECD methodology are presented, revealing differences from one country to another. They are followed by five other levels of gross wage, equal for all five countries: EUR 10,000; EUR 20,000; EUR 30,000; EUR 40,000; EUR 50,000 and EUR 100,000.

3.1 TAXATION OF WAGES IN SLOVENIA

The Slovenian taxation system reveals a high level of progressivity as a consequence of its progressive PIT schedule and proportional SSC. The combination of both results is the high taxation of higher gross wages (5th and 6th wage levels) compared to lower wage levels. This is evident from all the results. The tax wedge at a gross wage of EUR 100,000 is thus 21.6 percentage points or 61.4% higher than the tax wedge at a gross wage of EUR 10,000. The low taxation of an employee in wage level 2 is mostly a consequence of a high general tax allowance for low income taxpayers, which results in a low amount of PIT.

TABLE 3

Taxation of wages in Slovenia

Wage level[1]		Annual level of data					
		1	2	3	4	5	6
1	**Gross wage (EUR)**	**16,551**	**10,000**	**20,000**	**30,000**	**50,000**	**100,000**
2	Employee's SSC (EUR)	3,658	2,210	4,420	6,630	11,050	22,100
3	PIT (EUR)	1,816	267	2,541	5,374	11,762	27,732
4	Employee's taxes (2+3) (EUR)	5,474	2,477	6,961	12,004	22,812	49,832
5	Employee's ETR (4/1) (%)	33.1	24.8	34.8	40.0	45.6	49.8
6	**Net wage (1-4) (EUR)**	**11,077**	**7,523**	**13,039**	**17,996**	**27,188**	**50,168**
7	Employer's SSC (EUR)	2,665	1,610	3,220	4,830	8,050	16,100
8	Employer's ETR (7/1) (%)	16.1	16.1	16.1	16.1	16.1	16.1
9	**Labour costs (1+7) (EUR)**	**19,216**	**11,610**	**23,220**	**34,830**	**58,050**	**116,100**
10	Overall taxes (2+3+7) (EUR)	8,138	4,087	10,181	16,834	30,862	65,932
11	Overall ETR (10/1) (%)	49.2	40.9	50.9	56.1	61.7	65.9
12	**Tax wedge (10/9) (%)**	**42.4**	**35.2**	**43.9**	**48.3**	**53.2**	**56.8**
13	Net wage/gross wage (6/1) (%)	66.9	75.2	65.2	60.0	54.4	50.2
14	Net wage/labour costs (6/9) (%)	57.6	64.8	56.2	51.7	46.8	43.2

[1] Wage level 1 is the average gross wage for 2010.
Employee's ETR – Employee's effective tax rate.
Employer's ETR – Employer's effective tax rate.
Overall ETR – Overall effective tax rate.

Source: IBFD (2010); OECD (2011); own calculations.

The reason for the relatively high taxation of employees is, beside the high rate of their SSC, the low threshold for the highest marginal PIT rate (15,058 EUR). As a result, wage levels including the 4th and above are all subject to the highest marginal PIT rate.

Slovenia is the only country without a ceiling for SSC and therefore the PIT progressivity is not mitigated by a decline in the average tax rate of SSC at a higher wage levels.

3.2 TAXATION OF WAGES IN ITALY

Table 4 reveals a higher employer's ETR, compared to the level of taxes imposed on employees up to 5th wage level in Italy.

TABLE 4

Taxation of wages in Italy

Wage level[1]		Annual level of data					
		1	2	3	4	5	6
1	**Gross wage (EUR)**	**27,827**	**10,000**	**20,000**	**30,000**	**50,000**	**100,000**
2	Employee's SSC (EUR)	2,641	949	1,898	2,847	5,245	9,243
3	PIT[2] (EUR)	5,652	489	3,397	6,288	11,361	33,920
4	Employee's taxes (2+3) (EUR)	8,293	1,438	5,295	9,135	16,606	43,163
5	Employee's ETR (4/1) (%)	29.8	14.4	26.5	30.5	33.2	43.2
6	**Net wage (1-4) (EUR)**	**19,534**	**8,562**	**14,705**	**20,865**	**33,394**	**56,837**
7	Employer's SSC (EUR)	8,927	3,208	6,416	9,624	16,040	29,561
8	Employer's ETR (7/1) (%)	32.1	32.1	32.1	32.1	32.1	29.6
9	**Labour costs (1+7) (EUR)**	**36,754**	**13,208**	**26,416**	**39,624**	**66,040**	**129,561**
10	Overall taxes (2+3+7) (EUR)	17,219	4,646	11,711	18,759	32,646	72,723
11	Overall ETR (10/1) (%)	61.9	46.5	58.6	62.5	65.3	72.7
12	**Tax wedge (10/9) (%)**	**46.9**	**35.2**	**44.3**	**47.3**	**49.4**	**56.1**
13	Net wage/gross wage (6/1) (%)	70.2	85.6	73.5	69.6	66.8	56.8
14	Net wage/labour costs (6/9) (%)	53.1	64.8	55.7	52.7	50.6	43.9

[1] Wage level 1 is the average gross wage for 2010.
[2] PIT includes sub-central PIT at the rates which are used in the capital (Rome).
Employee's ETR – Employee's effective tax rate.
Employer's ETR – Employer's effective tax rate.
Overall ETR – Overall effective tax rate.

Source: IBFD (2010); OECD (2011); own calculations.

The specific feature of Italy is a progressive system of employees' SSC rates. Gross wages up to EUR 42,364 are subject to 9.49% employee's SSC, whereas gross wages above EUR 42,364 and below the ceiling of EUR 92,147 are subject to 10.49% employee's SSC. On the other hand, employer's SSC rate remains constant (32.08%) up to the ceiling. The effect of the relatively high ceiling (EUR 92,147) is negligible at the wage levels shown in table 4, clearly reflected in employer's ETR that is constant up to the 6th wage level, where it finally declines

by a mere 2.5 percentage points. The effect of the ceiling would significantly influence the effective tax rates at wage levels higher than those presented.

3.3 TAXATION OF WAGES IN AUSTRIA

An Austrian characteristic is the zero-rate first PIT bracket up to the tax base of EUR 11,000 which results in relatively modest overall taxation of low wage levels. On the other hand, the ceiling for SSC set at EUR 49,320 reduces the taxation of higher gross wages in spite of the 50% marginal PIT rate that applies above the tax base of EUR 60,000.

In Austria, a special PIT taxation is used for separate or irregular payments (such as the 13th and 14th monthly wages) in an amount up to one-sixth of annual regular payments. The first 620 EUR of those irregular amounts are tax free at the annual level, while the rest is taxed with a flat tax rate of 6% (OECD, 2011). Following the OECD methodology, all gross wages from table 5 include a share which corresponds to the 13th and 14th monthly wage and which is taxed according to this special rule. As a consequence, PIT in table 5 is a combination of progressive PIT according to schedule and flat 6% tax.

TABLE 5

Taxation of wages in Austria

Wage level[1]		Annual level of data					
		1	2	3	4	5	6
1	**Gross wage (EUR)**	**39,828**	**10,000**	**20,000**	**30,000**	**50,000**	**100,000**
2	Employee's SSC (EUR)	7,209	1,510	3,620	5,430	8,927	8,927
3	PIT (EUR)	5,476	-	494	2,975	8,500	28,008
4	Employee's taxes (2+3) (EUR)	12,685	1,510	4,114	8,405	17,427	36,934
5	Employee's ETR (4/1) (%)	31.8	15.1	20.6	28.0	34.9	36.9
6	**Net wage (1-4) (EUR)**	**27,143**	**8,490**	**15,886**	**21,595**	**32,573**	**63,066**
7	Employer's SSC[2] (EUR)	12,239	3,073	6,146	9,219	15,217	19,732
8	Employer's ETR (7/1) (%)	30.7	30.7	30.7	30.7	30.4	19.7
9	**Labour costs (1+7) (EUR)**	**52,067**	**13,073**	**26,146**	**39,219**	**65,217**	**119,732**
10	Overall taxes (2+3+7) (EUR)	24,924	4,583	10,260	17,624	32,645	56,667
11	Overall ETR (10/1) (%)	62.6	45.8	51.3	58.8	65.3	56.7
12	**Tax wedge (10/9) (%)**	**47.9**	**35.1**	**39.2**	**44.9**	**50.1**	**47.3**
13	Net wage/gross wage (6/1) (%)	68.2	84.9	79.4	72.0	65.2	63.1
14	Net wage/labour costs (6/9) (%)	52.1	64.9	60.8	55.1	49.9	52.7

[1] Wage level 1 is the average gross wage for 2010.
[2] Employer's SSC includes other employer's contributions and payroll tax.
Employee's ETR – Employee's effective tax rate.
Employer's ETR – Employer's effective tax rate.
Overall ETR – Overall effective tax rate.

Source: IBFD (2010); OECD (2011); own calculations.

The effect of the ceiling is revealed by employer's ETR, which is 10.7 percentage points lower at wage level 6 than at wage level 5. Employee's ETR on the other

hand does not show a drop due to the ceiling, since the effect of progressive PIT prevails. In general, Austria is characterised by high labour costs and high net wages (a combination of relatively low taxation of the employee and high taxation of the employer).

3.4 TAXATION OF WAGES IN HUNGARY

Hungary applies a relatively high taxation of low-wage levels from the employee's point of view. The employee's ETR for low wages is the highest among all the countries under scrutiny. At higher wage levels the employee's ETR is no longer the highest due to the upper amount for employee's pension insurance contributions and the modest (32%) highest PIT marginal tax rate, which is applied to the tax base above EUR 18,150.

TABLE 6

Taxation of wages in Hungary

	Wage level[1]	Annual level of data					
		1	2	3	4	5	6
1	**Gross wage (EUR)**	**8,876**	**10,000**	**20,000**	**30,000**	**50,000**	**100,000**
2	Employee's SSC (EUR)	1,509	1,700	3,400	4,820	6,320	10,070
3	PIT (EUR)	1,256	1,499	5,406	9,470	17,598	37,918
4	Employee's taxes (2+3) (EUR)	2,765	3,199	8,806	14,290	23,918	47,988
5	Employee's ETR (4/1) (%)	31.2	32.0	44.0	47.6	47.8	48.0
6	**Net wage (1-4) (EUR)**	**6,111**	**6,801**	**11,195**	**15,711**	**26,083**	**52,013**
7	Employer's SSC[2] (EUR)	2,530	2,850	5,700	8,550	14,250	28,500
8	Employer's ETR (7/1) (%)	28.5	28.5	28.5	28.5	28.5	28.5
9	**Labour costs (1+7) (EUR)**	**11,406**	**12,850**	**25,700**	**38,550**	**64,250**	**128,500**
10	Overall taxes (2+3+7) (EUR)	5,295	6,049	14,506	22,840	38,168	76,488
11	Overall ETR (10/1) (%)	59.7	60.5	72.5	76.1	76.3	76.5
12	**Tax wedge (10/9) (%)**	**46.4**	**47.1**	**56.4**	**59.3**	**59.4**	**59.5**
13	Net wage/gross wage (6/1) (%)	68.8	68.0	56.0	52.4	52.2	52.0
14	Net wage/labour costs (6/9) (%)	53.6	52.9	43.6	40.8	40.6	40.5

[1] Wage level 1 is the average gross wage for 2010.
[2] Employer's SSC includes payroll tax.
Employee's ETR – Employee's effective tax rate.
Employer's ETR – Employer's effective tax rate.
Overall ETR – Overall effective tax rate.

Source: Source: IBFD (2010); OECD (2011); own calculations.

On the other hand, employer's SSC are not subject to any ceiling. Even though the employer's taxation records low levels, gross wages in Hungary remain the most heavily taxed for all wage levels above the Hungarian average gross wage.

3.5 TAXATION OF WAGES IN CROATIA

In Croatia, the SSC ceiling applies only to the employee's pension insurance contributions and is set relatively high at EUR 76,207, so that it influences only employees with the highest wage level, mitigating the progressivity of the PIT rates.

In addition to the progressive national and sub-central PIT, in 2010 Croatia also temporarily applied a progressive crisis tax levied on net wages, which increases the overall taxation in table 7.

Table 7

Taxation of wages in Croatia

Wage level[1]		Annual level of data					
		1	2	3	4	5	6
1	**Gross wage (EUR)**	**12,019**	**10,000**	**20,000**	**30,000**	**50,000**	**100,000**
2	Employee's SSC (EUR)	2,404	2,000	4,000	6,000	10,000	15,241
3	PIT[2] (EUR)	1,243	874	3,474	6,655	14,033	36,969
4	Employee's taxes (2+3) (EUR)	3,647	2,874	7,474	12,655	24,033	52,211
5	Employee's ETR (4/1) (%)	30.3	28.7	37.4	42.2	48.1	52.2
6	**Net wage (1-4) (EUR)**	**8,372**	**7,126**	**12,526**	**17,345**	**25,967**	**47,789**
7	Employer's SSC (EUR)	2,067	1,720	3,440	5,160	8,600	17,200
8	Employer's ETR (7/1) (%)	17.2	17.2	17.2	17.2	17.2	17.2
9	**Labour costs (1+7) (EUR)**	**14,086**	**11,720**	**23,440**	**35,160**	**58,600**	**117,200**
10	Overall taxes (2+3+7) (EUR)	5,714	4,594	10,914	17,815	32,633	69,411
11	Overall ETR (10/1) (%)	47.5	45.9	54.6	59.4	65.3	69.4
12	**Tax wedge (10/9) (%)**	**40.6**	**39.2**	**46.6**	**50.7**	**55.7**	**59.2**
13	Net wage/gross wage (6/1) (%)	69.7	71.3	62.6	57.8	51.9	47.8
14	Net wage/labour costs (6/9) (%)	59.4	60.8	53.4	49.3	44.3	40.8

[1] Wage level 1 is the average gross wage for 2010.
[2] PIT includes the crisis tax and sub-central PIT at the rate which is used in the capital (Zagreb).
Employee's ETR – Employee's effective tax rate.
Employer's ETR – Employer's effective tax rate.
Overall ETR – Overall effective tax rate.

Source: Cipek and Šnajder (2010); Tomić and Grdović Gnip (2011); IBFD (2010); Turković Jarža (2010); DZS (2012); own calculations.

An additional characteristic of Croatia is the relatively high employee's taxes (employee's SSC and PIT) compared to the employer's taxes (employer's SSC). At the 6th wage level, the employer's taxes thus represent one third of employee's taxes. Overall, Croatia reveals a relatively high taxation of employees (especially at high wage levels), a relatively low taxation of employers and a high overall tax wedge, which is generally only exceeded by the tax wedge in Hungary.

4 COMPARISON OF TAXATION AMONG THE COUNTRIES

In the subsequent comparison, the PIT for Croatia includes the crisis tax. For Austria and Hungary, payroll tax and other employer's contributions are included among the employer's SSC. The results from tables 3 to 7 are summarised in table 8 and figure 1.

TABLE 8

Structure of the tax wedge at different levels of gross wages

	Wage level[1]	Annual gross wage	PIT[2]	Employee's SSC	Employee's taxes	Employer's SSC[3]	Tax wedge
		EUR	Share of labour costs (%)				
		1	2	3	4 (2+3)	5	6 (4+5)
Austria	1	39,828	10.5	13.8	24.3	23.5	47.8
Italy		27,827	15.4	7.2	22.6	24.3	46.9
Hungary		8,876	11.0	13.2	24.2	22.2	46.4
Slovenia		16,551	9.5	19.0	28.5	13.9	42.4
Croatia		12,019	8.8	17.1	25.9	14.7	40.6
Hungary	2	10,000	11.7	13.2	24.9	22.2	47.1
Croatia			7.5	17.1	24.6	14.7	39.3
Slovenia			2.3	19.0	21.3	13.9	35.2
Italy			3.7	7.2	10.9	24.3	35.2
Austria			0.0	11.6	11.6	23.5	35.1
Hungary	3	20,000	21.0	13.2	34.2	22.2	56.4
Croatia			14.8	17.1	31.9	14.7	46.6
Italy			12.9	7.2	20.1	24.3	44.4
Slovenia			10.9	19.0	29.9	13.9	43.8
Austria			1.9	13.9	15.8	23.5	39.3
Hungary	4	30,000	24.6	12.5	37.1	22.2	59.3
Croatia			18.9	17.1	36.0	14.7	50.7
Slovenia			15.4	19.0	34.4	13.9	48.3
Italy			15.9	7.2	23.1	24.3	47.4
Austria			7.6	13.9	21.5	23.5	45.0
Hungary	5	50,000	27.4	9.8	37.2	22.2	59.4
Croatia			24.0	17.1	41.1	14.7	55.8
Slovenia			20.3	19.0	39.3	13.9	53.2
Austria			13.0	13.8	26.8	23.3	50.1
Italy			17.2	7.9	25.1	24.3	49.4
Hungary	6	100,000	29.5	7.8	37.3	22.2	59.5
Croatia			31.5	13.0	44.5	14.7	59.2
Slovenia			23.9	19.0	42.9	13.9	56.8
Italy			26.2	7.1	33.3	22.8	56.1
Austria			23.4	7.5	30.9	16.5	47.4

[1] Wage level 1 is the average gross wage for 2010.
[2] PIT includes the crisis tax (Croatia); according to the OECD methodology the PIT in Croatia and Italy include sub-central PIT at the rates used in the capitals (i.e. Zagreb and Rome).
[3] Employer's SSC includes other employer's contributions (Austria) and payroll tax (Austria and Hungary).
Countries are ranked by descending level of the tax wedge at each wage level.

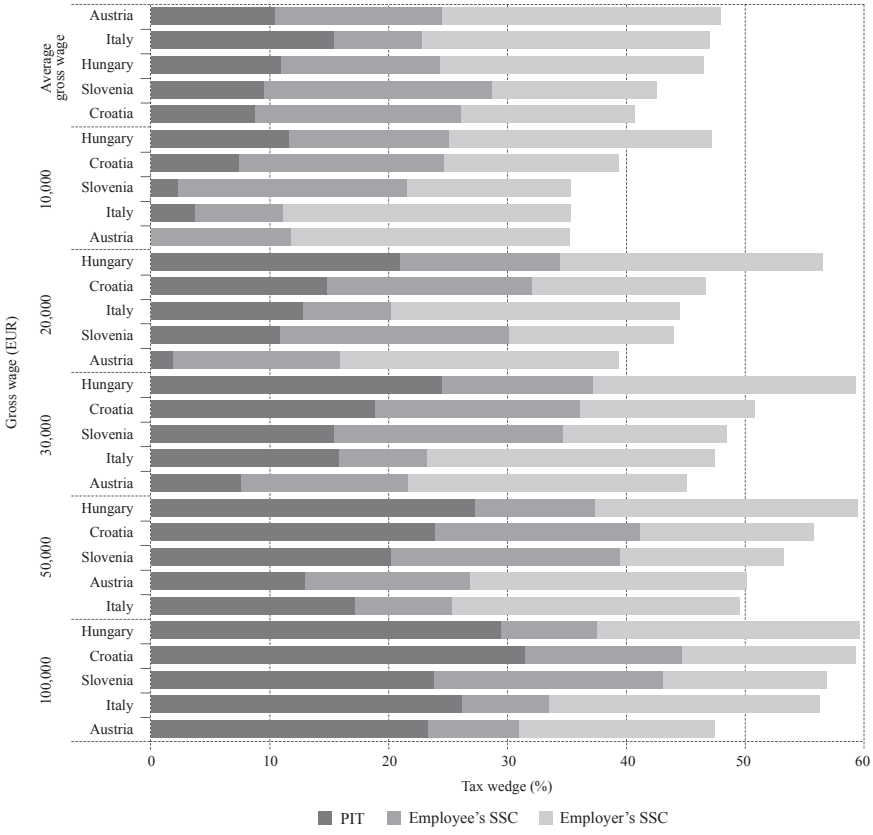
Source: Cipek and Šnajder (2010); Tomić and Grdović Gnip (2011); IBFD (2010); OECD (2011); Turković Jarža (2010); DZS (2012); own calculations.

As table 8 and figure 1 reveal, the average gross wage in 2010 is the most heavily taxed in Austria, where the overall tax wedge represents 47.8% of labour costs and the least in Croatia, where the tax wedge is 40.6% of labour costs. The structure of the tax wedge reveals the relative importance of particular taxes. Employer's

SSC represent the biggest share of labour costs in Italy (24.3%), but only 13.9% in Slovenia. Employee's SSC are 19.0% of labour costs and thus the highest is Slovenia while on the other hand they represent just 7.2% of labour costs in Italy. At 15.4%, the PIT is the highest in Italy and the lowest in Croatia, where it represents 8.8% of labour costs.

Figure 1

Structure of the tax wedge at different levels of gross wages



Average gross wage is for 2010.
PIT includes the crisis tax (Croatia); according to the OECD methodology the PIT in Croatia and Italy include sub-central PIT at the rates used in the capitals (i.e. Zagreb and Rome).
Employer's SSC includes other employer's contributions (Austria) and payroll tax (Austria and Hungary).
Countries are ranked by descending level of the tax wedge at each wage level.

Source: Cipek and Šnajder (2010); Tomić and Grdović Gnip (2011); IBFD (2010); OECD (2011); Turković Jarža (2010); DSZ (2012); own calculations.

The comparison of equal (in absolute terms) gross wages (wage levels 2–6) reveals that the highest tax wedge at all levels is in Hungary, generally followed by

Croatia, Slovenia, Italy and Austria. In all the countries, the size of the tax wedge increases with the wage level. The only exception is Austria, where the size of the tax wedge for the last wage level drops by 2.7 percentage points compared to the previous wage level, due to the regressive effect of the SSC ceiling. Overall, the lowest tax wedge is found in Austria (with the exception of wage level 5, where the lowest tax wedge is seen in Italy). The tax wedge in Croatia is lower than the tax wedge in Hungary, while it is higher than in Slovenia. Slovenia is thus ranked in the middle of countries under consideration. In table 9 and figure 2, we further present labour costs and net wages at different levels of gross wages.

Table 9

Labour costs and net wages at different levels of gross wages

	Wage level[1]	Annual gross wage	Labour cost	Net wage	Net wage/ gross wage	Net wage/ labour cost
		EUR			%	
		1	2	3	4 (3/1)	5 (3/2)
Austria	1	39,828	52,067	27,143	68.2	52.1
Italy		27,827	36,754	19,534	70.2	53.1
Slovenia		16,551	19,216	11,077	66.9	57.6
Croatia		12,019	14,086	8,372	69.7	59.4
Hungary		8,876	11,406	6,111	68.8	53.6
Italy	2	10,000	13,208	8,562	85.6	64.8
Austria			13,073	8,490	84.9	64.9
Hungary			12,850	6,801	68.0	52.9
Croatia			11,720	7,126	71.3	60.8
Slovenia			11,610	7,523	75.2	64.8
Italy	3	20,000	26,416	14,705	73.5	55.7
Austria			26,146	15,886	79.4	60.8
Hungary			25,700	11,195	56.0	43.6
Croatia			23,440	12,526	62.6	53.4
Slovenia			23,220	13,039	65.2	56.2
Italy	4	30,000	39,624	20,865	69.6	52.7
Austria			39,219	21,595	72.0	55.1
Hungary			38,550	15,711	52.4	40.8
Croatia			35,160	17,345	57.8	49.3
Slovenia			34,830	17,996	60.0	51.7
Italy	5	50,000	66,040	33,394	66.8	50.6
Austria			65,217	32,573	65.2	49.9
Hungary			64,250	26,083	52.2	40.6
Croatia			58,600	25,967	51.9	44.3
Slovenia			58,050	27,188	54.4	46.8
Italy	6	100,000	129,561	56,837	56.8	43.9
Hungary			128,500	52,013	52.0	40.5
Austria			119,732	63,066	63.1	52.7
Croatia			117,200	47,789	47.8	40.8
Slovenia			116,100	50,168	50.2	43.2

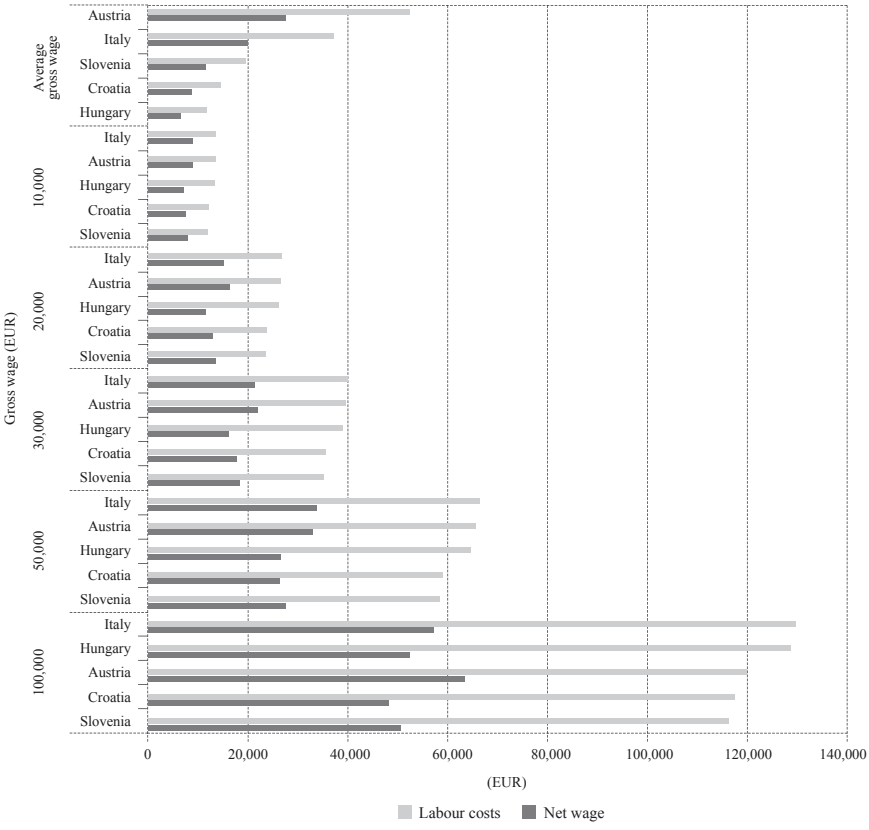
[1] *Wage level 1 is the average gross wage for 2010.*
Countries are ranked by descending level of labour costs at each wage level.

Source: Cipek and Šnajder (2010); Tomić and Grdović Gnip (2011); IBFD (2010); OECD (2011); Turković Jarža (2010); DZS (2012); own calculations.

Table 9 and figure 2 reveal that the relative amounts of labour costs and net wages follow the relative sizes of gross wages. The initial differences in the absolute size of average gross wages among the countries outweigh any re-ranking that might have been caused by differences in the tax systems. Regarding labour costs based on the average gross wage, it is no surprise that they are the highest in Austria, followed by Italy, Slovenia, Croatia and Hungary.

Figure 2

Labour costs and net wage at different levels of gross wages



Average gross wage is for 2010.
Countries are ranked by descending level of labour costs at each wage level.

Source: Cipek and Šnajder (2010); Tomić and Grdović Gnip (2011); IBFD (2010); OECD (2011); Turković Jarža (2010); DSZ (2012); own calculations.

The comparison of absolute levels of labour costs based on equal (in absolute terms) gross wages (wage levels 2–6) reveals that the highest level of labour costs is in Italy, followed by Austria, Hungary, Croatia and Slovenia. The only exception is the sixth wage level, where labour costs in Hungary exceed those in

Austria. The high labour costs in Italy are a consequence of high employee taxation and a high threshold for the SSC ceiling. In spite of having the highest labour costs, Italy reveals the highest net wage only in the second and fifth wage levels leaving the "leadership" in the remaining three to Austria. In general the taxation of employees is the most favourable in Austria, as reflected in the highest shares of net wage in gross wage at most wage levels – especially in the highest. Slovenian employers face the lowest labour costs at all wage levels, whereas Slovenian net wages are ranked in the middle of the distribution for almost all wage levels. Hungary is characterised by relatively high employee taxation which results in relatively low net wages.

5 CONCLUSION

In this paper, a comparison of the taxation of gross wages for Austria, Croatia, Hungary, Italy and Slovenia based on OECD methodology is presented. Results are given for the average gross wage as well as for a set of equal (in absolute terms) gross wages ranging between EUR 10,000 and EUR 100,000. Taxes taken into account include the central (national) PIT and the PIT levied by sub-central levels of government, employer's and employee's SSC and other compulsory contributions and taxes levied on gross wages. Based on the country-specific tax systems from 2010, labour costs are defined as the costs for the employer added to the gross wage of an employee. The tax wedge is defined as the difference between the labour costs of the employer and the corresponding net take-home pay of the employee. It is calculated by expressing overall taxes as a percentage of labour costs.

Since these five countries differ substantially in their GDP per capita, it is no surprise that the average gross wage levels also differ in a ratio of 1:4.5, being the highest in Austria and the lowest in Hungary, with the ranking of net wages following that of gross wages.

The average gross wage in 2010 is the most heavily taxed in Austria, where the overall tax wedge represents 47.8% of labour costs and the least in Croatia with a tax wedge of 40.6%, while annual labour costs based on the average gross wage are the highest in Austria and the lowest in Hungary.

The comparison of equal (in absolute terms) gross wages (gross wages ranging between EUR 10,000 and EUR 100,000) reveal that the highest tax wedge for all levels is in Hungary, generally followed by Croatia, Slovenia, Italy and Austria. In all the countries, the size of the tax wedge increases in general with the wage level. The lowest tax wedge is generally revealed in Austria, which shows the lowest taxation of employees with PIT and a relatively low taxation via the employee's SSC. The tax wedge in Croatia is lower than the tax wedge in Hungary, while it is higher than in Slovenia. Slovenia is thus ranked in the middle of the countries under consideration.

Overall, the results show that Croatia, Hungary and Slovenia have lower taxation of their average gross wages compared to Austria and Italy and in addition their average gross wages are also considerably lower in absolute terms than in Italy and Austria. From this point of view, these three countries are attractive by virtue of their average gross wages being substantially below the average gross wages in Austria and Italy. On the other hand, when we compare the taxation of gross wages, which in absolute terms are close to or above the average gross wages of Italy and Austria, the order is reversed – they are taxed considerably higher in Croatia, Hungary and Slovenia, implying that these three countries are unattractive for highly paid employees from the point of view of taxation. In this respect, Croatia, Hungary and Slovenia cannot compete with Austria and Italy.

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