Wage and Income Inequality in Slovenia, 1993-2002[1]

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Abstract

This paper analyses the dynamics of wage and income inequality in Slovenia from 1993 to 2002, using two different data sources. The first is obtained by extracting relevant information on wage earners from the personal income tax (PIT) database and the second is obtained using published data on wages and the wage distribution. Analyses of both datasets clearly show a large increase in wage inequality in the period 1993-1995. However, even after 1995 wage inequality has been creeping up. To a large degree, we ascribe the major increase in wage inequality to the rapid development of a full-fledged market economy and also to the changing PIT legislation. A growing individualization of wage contracts doubtlessly also contributed to increased inequality. In addition, our analysis touches upon the effects of the tax system and shows that the tax system significantly moderated the large increases in income inequality.

JEL classification: D33, H24, P20.
Keywords: Income Distributions, Income Inequality, Slovenia, Transition, Wages, Wage Contracts.

1. Introduction

Central and Eastern European countries have undergone profound political, economic and social transformations during the 1990s. One of the consequences of such societal transformations was a large increase in income inequality. This is quite understandable; in the socialist and communist regimes wages were mostly set administratively, so that wage dispersion was compressed. With the dismantling of the old regime, market forces became a more decisive factor in wage setting and this invariably resulted in an increase in wage inequality. Clearly, an analysis of the inequality of market incomes does not provide 'the whole picture', as this increase in inequality was – to a certain extent – moderated by the tax system and system of social transfers. Thus, income inequality can be analyzed on two different levels: the level of market ('factor') incomes and the level of disposable income, i.e. income after the redistributive effects of the tax and transfer system. Obviously, the analysis of the inequality of disposable income provides a better indication of the changes in the welfare levels. Here, households are taken as the unit of analysis, and current monetary disposable income as the relevant income measure.

[1] The authors are deeply indebted to Tatjana Novak and Andrej Haramina from the Statistical office of the Republic of Slovenia for providing data from the PIT database. We are also grateful to Saša Kovačič and Brane Mišič for valuable advice. Needless to say, the authors are solely responsible for any remaining errors or misinterpretations.

Our analysis will focus mainly on the first level, i.e. the analysis of market incomes. Before proceeding to this, Section 2 will provide a brief and selective overview of international research on income inequality, whereas Section 3 will offer some of the main findings of the dynamics in inequality of current disposable household monetary income in Slovenia. Section 4 is devoted to our main topic – analysis of wage and income inequality in Slovenia. This analysis will be performed using two different datasets. The first is obtained by extracting relevant data on wage earners from the personal income tax (PIT) dataset. The extraction and grouping of data was performed by the Statistical Office of the Republic of Slovenia (SORS). The second source is data on wages, published by the SORS for the months March and September; these data are collected from the employers. The two different data sources are used in the analysis in order to give greater weight to our conclusions.

2. A Selective Overview of Comparative Studies on Income Inequality

Studies on income inequality are multiplying at a fast rate, doubtlessly caused by the large research interest in the phenomenon of globalization and its effects on income inequality within a country. Here, research deals not only with the analysis of market incomes, but also with the effects of the tax/transfer system on income inequality.

For example, Caminada and Goudswaard (2001) studied the effects of social policy on income inequality in OECD countries. They regressed the Gini coefficient, using as explanatory variables – in turn – social expenditures and the replacement rate, i.e. the ratio between the average old-age pension and average wage. The latter regression gave a better fit, and the value of the estimated parameter was negative, meaning that countries with greater inequality also had a lower replacement rate. They analysed the dynamics of income inequality in the Netherlands in particular detail and showed that the large increase in income inequality during the 1980s and 1990s could be traced to the reform of the social protection system, caused by the deteriorating economic conditions of the 1980s.

Milanović (1999a), using the Luxembourg Income Survey (LIS) database and selecting OECD countries, showed that countries with larger inequalities in factor ('market') incomes also experienced larger income redistribution. In another study, Milanović (1994) uses as a starting point the well known Kuznets' curve, i.e. the inverted U-shaped curve, which depicts the changing income inequality during the phases of economic development; initially low, then increasing and finally decreasing in the highly developed stage. Milanović explores whether differences in income inequality between countries can be explained not only by the 'stages' of economic development, but also by certain country-specific characteristics. He regressed the Gini coefficient on several variables that captured these country-specific characteristics: (1) the income heterogeneity of a country, i.e. the income differences between regions; (2) the share of employees in the public sector (as percentage of all employees) and (3) the share of social transfers in GDP. According to expectations, the variable capturing income heterogeneity ought to be positively correlated, whereas the second and third variable ought to be negatively correlated with income inequality. In actual fact, all the estimated coefficients were of the expected sign. Milanović (1999b) also explores the causes for the increase in income inequality in six Central and Eastern European countries during the period 1987-1995 and shows that the most important explanatory

factor for this large increase was the increase in wage inequality, with the development of the private sector also contributing to overall income inequality.

Gustafsson and Johansson (1997) studied several groups of factors, which could plausibly explain the differences in income inequality between countries. Based on a simple regression equation estimated on a time series of several countries, they find that the size of the public sector and the structure of the labour force, i.e. the share of women in the labour force, are negatively correlated with income inequality. On the other hand, countries with higher foreign trade, measured as percentage of GDP, also have higher income inequality.

Atkinson, in his more recent work (Atkinson, 2002), studied nine developed OECD countries and shows that their income inequality paths (based on disposable monetary household income) differ widely. In the long period since the 1960s, Atkinson describes the income inequality trajectory with the letter 'U'. In the USA and Great Britain this trajectory resembles a 'U' with a serif, meaning a decrease in the 1960s and 1970s, increase in the 1980s and very little change in the 1990s. In Finland the income inequality trajectory resembles a 'U', with a large increase in the 1990s, whereas in the Netherlands it is more like a 'U' with a serif, due to a levelling-off of inequality during the 1990s. A modest increase in the 1990s, without any clear pattern, is characteristic for the dynamics of income inequality in Germany, whereas Italy experienced large falls and rises in income inequality, so that the trajectory could best be described by the letter 'W'. Somewhat in accordance with Atkinson's findings, O'Rourke (2002, p. 60) also shows that the experience of particular countries are quite diverse, and that the relationship between globalization and inequality is not clear-cut.

Of particular interest is Atkinsons' analysis of the upper end of the income distribution, showing that the share of income accruing to the top one per cent of the population in USA, Great Britain and Canada increased considerably. Atkinson explains these increases with '[…] the forces of globalization and technology [which have] raised the rents of those with the very highest abilities' (Atkinson, 2002, p.28). However, it must be stressed that this phenomenon is not as pronounced in other countries included in the analysis.

3. A Brief Overview of Studies on Income Inequality in Slovenia

There are a number of studies on income inequality in Slovenia, mostly based on two different data sources. The first is the Household Expenditure Survey (HES), where the income data refer to net income, i.e. household current disposable monetary income. These surveys do not contain data on gross income. The other data source is the PIT file. This file contains data on income, subject to tax, for all taxable persons, i.e. persons obliged to file the PIT form.

Neither data source is 'ideal'. The HES is somewhat problematic because of underreporting; related to this is the fact that data on income are not collected through administrative sources. As for the PIT file, it obviously does not include persons who are not liable for PIT, nor does it include income, which is not subject to tax (most pensions and other social transfers). Also, the PIT legislation changed in 1993, reducing the number of taxable persons significantly. Thus, the comparisons of data from PIT file for the pre-1993 and post-1993 period is meaningful only by extracting – and analysing separately – those types of taxable persons (wage-earners, self-employed), whose

inclusion was not affected by changes in legislation. We shall now turn to a brief description of studies based on the HES and PIT files.

3.1. Analyses of Income Inequality Based on Household Budget Surveys

Stropnik and Stanovnik (2002) studied the impact of social transfers on income inequality and poverty during the 1990s in Slovenia. The analysis was based on the 1993 HES and the merged annual HES for 1997, 1998 and 1999; current household disposable monetary income was used as the income measure[2]. The analysis showed that – quite according to expectations – social transfers decrease the risk-of-poverty and also result in lower income inequality. The Gini coefficient of income inequality, based on the 1993 HES was 0.267, whereas the computed Gini coefficient base on the merged 1997-1999 HES was 0.236. It seems that some 'credit' for such a large drop can be ascribed to the lower willingness of respondents to report their income, with underreporting being more concentrated among the self-employed.

Čok (2003), using the 1983, 1993 and 1997-1998 HES decomposed income inequality by income sources as well as according to various subgroups, defined with regard to: (1) the socioeconomic status of the head of household; (2) age of the head of household and (3) attained educational level of the head of household.

3.2. Analyses Based on PIT Data

Stanovnik (1999), using large simple random samples from the PIT database for the years 1991 and 1996, concludes that income inequality has increased in this period. As there were significant changes in the PIT legislation (in 1993) – these mostly concerned the taxation of pensions – persons receiving pensions were eliminated from the sample. This enabled a satisfactory comparability of the two datasets. The analysis of wage inequality has shown that a particularly large increase in wages occurred in the highest – tenth decile. Studies have also shown that, in the first years of transition, large increase in the returns to education occurred, particularly university education (Oražem and Vodopivec, 1995; Stanovnik, 1997). This provides at least one explanation for the increase in wage dispersion in the beginning of the transition process.

Kump (2002) analysed the PIT data for the years 1991 in 2000. Similarly to the study by Stanovnik (1999), her analysis is also based on large simple random samples[3] and she also eliminated pensioners from the sample. However, her analysis represents a significant improvement on previous research, due to the fact that data on social contributions and PIT paid were also available. Her analysis has shown that income inequality (of gross incomes), measured by the Gini coefficient was much larger in 2000 than in 1991, but the Gini coefficient for net income (i.e. gross income net of social contributions and paid PIT) remained virtually unchanged. Clearly, the explanation lies in the increased progressivity of the PIT, resulting from the new 1993 PIT legislation[4].

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[2] This includes labour income, capital income, income from self-employment, pensions, other social transfers, intrafamily monetary gifts and transfers. The normal OECD equivalence scale was used.

[3] We note that the tax authorities do not permit the use of the complete dataset.

[4] The PIT act, passed toward the end of 1993 (Official Gazette of the Republic of Slovenia, 71/93), was in force starting from 1994, meaning that incomes in 1994 were already being taxed with the 'new' PIT.

Whereas the analyses by Stanovnik and Kump were based on samples from the PIT database, the analysis by Borak and Pfajfar (2002) was based on grouped data, obtained from the whole PIT database. Their analysis includes the whole period 1991-2000, so that it is possible to trace inequality measures year-by-year[5]. However, a serious weakness, which they did not address, is comparability between the pre-1993 and post-1993 datasets, caused by the 1993 PIT legislation and subsequent large reduction in the number of taxable persons[6]. In fairness, the authors were fully conscience of this difficulty, and briefly commented: 'This change [of the tax legislation] will disturb the comparability of the parameters calculated throughout the analysis' (Borak and Pfajfar, 2002, p. 456). Their analysis shows that larger changes in income inequality were confined to the initial years of transition, i.e. the period 1991-1993. One must single out the year 1993, when the Gini coefficient sharply increased (from 0.3327 to 0.3595), and 1994, in which the Gini coefficient significantly decreased (from 0.3595 to 0.3449). In our view, this 'roller-coaster' ride was mostly due to changes in the population of taxable persons; these changes took effect already in 1993 and were completed in 1994. After 1994 the inequality changes were quite modest. Overall, in spite of the large increase in the Gini coefficient for gross income, from 0,325 in 1991 to 0,353 in 2000, the increase in the Gini coefficient for net income was moderate; from 0,305 in 1991 to 0,317 in 2000[7].

4. Analysis of Income Inequality of Wage Earners and Analysis of Inequality of Wages, 1993-2002

Having briefly reviewed research on income inequality, based on the PIT data, we note that this research still leaves 'much to be desired', as it did not resolve problems of the PIT database in a completely satisfactory manner. This means that problems with data comparability were either not dealt with (as in Borak and Pfajfar, 2002) or resolved in an *ad hoc* manner (Stanovnik, 1999, and Kump, 2002). Furthermore, only the analysis by Borak and Pfajfar (2002) analyzes year-by-year developments, whereas the other two studies (Stanovnik, 1999, and Kump, 2002) deal with two cross-sections. The purpose of our analysis is to overcome these shortcomings and provide correct comparisons of income inequality on a year-by-year basis. The analysis will focus on income inequality of market incomes – more precisely, we will deal only with the most important market income – wages. However, we will also endeavour to shed some more light on understanding of the dynamics of inequality of after-tax income in Slovenia.

For this purpose, we will use the PIT database, but extract from this base the most numerous and most important group of taxable persons – wage earners. Apart from this database, we will also use data on the distribution of wages, which is being published biannually (in March and September) by the SORS. Both data sources contain data on gross wages, whereas the first data source also contains data on other income sources of wage-earners, as well as data on employee social contributions and withheld PIT.

[5] We note that such an approach, i.e. analyses based on annual data, is preferable to analyses based on two cross-sections only. Atkinson expressed '[…] serious doubts about the practice adopted recently by the OECD of taking observations for 'mid-1970s', 'mid-1980s' and 'mid-1990s'. Such a procedure can misrepresent the dynamic pattern. A single year can be highly misleading' (Atkinson, 2003, p. 7).

[6] The reduction in the number of taxable persons actually occurred already in 1993; the decrease was from 1,203 thousand in 1992 to 1,058 thousand in 1993.

[7] One must mention that Borak and Pfajfar (2002) use gross income net of PIT as their measure of net income; social contributions are not subtracted, so their 'net income' includes social contributions.

Unfortunately, data on final PIT obligation were not available; it is worth noting, however, that for high-income taxable persons the final PIT obligation is mostly higher than the sum of monthly withheld PIT, while for low-income taxable persons the PIT obligation is usually less that the sum of monthly withheld PIT[8].

4.1. The Data Sources

Our target group consists of wage-earners. This group was determined through the registry of the labour active population, for which the SORS assumes responsibility. Only persons fulfilling the following criteria were considered: (1) employed full time (meaning that information in the registry stated that persons worked at least 36 hours per week) and (2) employed with the same employer throughout the year. These persons were, using a common identifier, linked with the relevant data from the PIT database. The SORS provided grouped data with 15 groups being formed. Unfortunately, these groups were formed according to wage and not total income of the employee, which would have been preferable. In our view, this minor inconsistency can not alter our main findings. Data for each income group contain the number of taxable persons and the sum of income by income sources. There were several tables containing these data, as taxable persons were also distinguished according to gender and sector of employment (private, public). Unfortunately, due to a programming error, the income source 'wage compensation disbursed by institutions other than the employer or the Institute for Pension and Disability Insurance' was not included among income sources of wage-earners. This includes compensations disbursed by the Institute for Heath Insurance (long-term sickness leave allowance), National Employment Service (unemployment allowance) and some other income sources of marginal importance to wage-earners.

The other statistical source contains data on the wage distribution of employees; these data are published by the SORS for the months March and September; we use the September data. Data are grouped into 20 income groups. These wage data refer to employees who worked full-time in September, meaning from 139 to 200 hours; employees in small firms (with one or two employees) and employees working for self-employed persons are not included[9].

4.2. Analysis and Results

As mentioned in the previous section, we will analyze two sets of data: data from the PIT database and data on the distribution of wages, as published by the SORS. The structure of income (for wage-earners) obtained from the PIT database is shown in Table 1.

<TABLE 1>

As seen from Table 1, wages (including wage compensations paid by employer, and cost reimbursements) account for more than 90 per cent of the gross income of wage-earners. The allowance for vacation accounts for some 5 per cent, income from capital

[8] This can be observed in Table A1 of the Appendix.

[9] More detailed methodological explanations are provided in the relevant statistical publication, *Rapid Reports*, published by the SORS.

and property accounts for one per cent, whereas income from royalties and property rights also accounts for some one per cent of gross income. Income from contractual work accounts for somewhat less than one per cent.

Apart from the structure of income, it would also be important to ascertain the distribution of total income and income sources. We will use the Gini coefficient for measuring income inequality and the Rao (1969) decomposition for measuring the contribution of income sources to overall income inequality. This decomposition is given by the following expression:

$$G = \sum s_k C_k$$

where G is the Gini coefficient, s_k share of income source k in total income, and C_k the coefficient of concentration of income source k. The results of the Rao decomposition are shown in Table 2, which presents concentration coefficients for income sources; the relevant income shares are given in Table 1.

<TABLE 2>

Overall, the results are not surprising. Income inequality among wage-earners increased in the period 1993-2002. From Table 2 we observe that several income sources are highly concentrated among the high-income earners. These income sources are fringe benefits, severance pay for retirement, awards and solidarity payments, and other wage-related disbursements. Also to be noted are the high concentration coefficients for income from contractual work, capital gains, income from capital and property, royalties and income from property rights. The very low (but positive) value of the allowance for annual vacation accords well with our expectations; this simply means that wage-earners receive almost the same amount of this allowance[10]. The very 'egalitarian' distribution of this allowance is due to government regulation, which introduced strong disincentives for allowances greater than the 'recommended' values. The vacation allowance was subject to PIT since 1991; however, from 1994 onward amounts greater than those prescribed by government decree could not be deducted as expenses (for corporation income tax). Since 1998 these greater amounts were also subject to payment of social contributions. Obviously, these disincentives did not completely deter all employers from offering higher vacation allowances to their employees.

What can be said about the effects of the tax system on income inequality? As we have already mentioned, data are available not only for gross income and income sources, but also on amounts of employee social contributions paid and withheld PIT; unfortunately, data on final PIT paid are not available in this dataset. Using the Rao decomposition, we can decompose inequality of gross income on its 'constituent' parts, i.e. on employee social contributions, withheld PIT and 'net' income. Here, 'net' income is defined as gross income net of employee social contributions and withheld PIT. The values of the Gini coefficient and the concentration coefficients are presented in Table 3 and Figure 1.

[10] If all wage-earners received the same amount of this allowance, the value of the concentration coefficient would be zero.

<TABLE 3>

Table 3 shows that the concentration coefficients for 'net' income are much lower than the corresponding Gini coefficients. Doubtlessly, the concentration coefficients for the 'real' net income, i.e. gross income net of employee social contributions and paid PIT, would be even lower. This assertion is based on the analysis of the difference between the withheld PIT and final PIT obligation (see Table A1 in the Appendix). Thus, as seen from Table A1, taxable persons in the lowest income tax bracket received large net paybacks, varying from 23 per cent (in 1994) to 42 per cent (in 2000) of the total collected PIT for this income group. However, for taxable persons in the highest income tax bracket, net additional payments amounted to some 10 to 13 per cent of total collected PIT for this group. In other words, the progressivity of PIT is higher if computed using the final PIT liability instead of a proxy – the withheld PIT.

<FIGURE 1>

From Table 3 one observes the large increase in the progressivity, caused by the new PIT legislation, introduced in late 1993 and being applied from 1994. The coefficient of concentration for withheld PIT was 0.3835 in 1993 and 0.4595 in 1994. This shock even resulted in a decrease in the concentration coefficient for 'net' income in 1994 (and, quite possibly, also for actual net income). The decrease in 'net' income quickly came to an end in 1995, and the inequality in gross income (wages) increasing in order to 'neutralize' the effects of the new PIT legislation[11]. After the tumultuous period 1991-1995, the increase in gross income of wage-earners was modest.

The increase in income inequality among wage-earners can be further elucidated through the analysis of quintile and decile income shares. Table 4 shows the income shares accruing to the lowest 20 per cent of wage earners, and to the highest 20 per cent, 10 per cent and 5 per cent of wage-earners. Data in column A refer to the PIT database (and thus to gross income of wage-earners), whereas data in column B refer to data on wages, published by the SORS. The values of these indicators of income inequality – and even more the direction of change – are quite congruent between the two datasets. Both show that the share of gross income (column A) and share of wages (column B) accruing to the lowest 20 per cent of wage-earners was lower in 2002 than in 1993. Also, the share of income accruing to the top 20 per cent has been steadily increasing up to 1999 and has since then levelled-off at a value of some 40 per cent. This trend is also depicted in Figure 2.

<TABLE 4>

<FIGURE 2>

Figure 3 shows the share of gross income/wages accruing to the top 10 per cent in the total gross income/total wages of the top 20 per cent of wage-earners. Again, one

[11] In late May 1995 the National Assembly of the Republic of Slovenia (Državni zbor) passed a law with a long-winded title 'On Enforcing the Agreement on Wage Policy and Other Payments to Employees and the Social Agreement for 1995, and the Minimum and Maximum Wage' (Official Gazette of the Republic of Slovenia, 29/95). This law endeavoured to stem the tide of increasing wage dispersion by setting a higher value for minimum wage.

observes a steady increase up to 1999, followed by a steady decrease. As seen from Figure 3, the curve depicting the share of gross income of the top 10 per cent wage-earners (in the gross income of top 20 per cent of wage-earners) lies strictly above the curve depicting the share of gross wages of the top 10 per cent of wage-earners (in gross wages of the top 20 per cent of wage-earners). The explanation is straightforward; some sources of none-wage income (income from contractual work, income from property and capital, income from property rights) are more highly concentrated in the uppermost tail of the income distribution.

<FIGURE 3>

Figure 4 shows the share of gross income/wages of the top 5 per cent of wage earners (in gross income/wages of the top 10 per cent of wage-earners). Yet again, the curve for gross income is strictly above the curve for gross wages. Also, the curve depicting the share of gross income (curve A), based on the PIT data source, is smoother than the curve depicting the share of gross wages (curve B). This is quite according to expectations, as the share of gross income (curve A) is computed using annual data, whereas the share of gross wages (curve B) is computed using monthly (September) data; as a general rule, the variability of monthly data is greater than the variability of annual data. While the curve for gross income has shown very little change since 1996, the curve for gross wages shows a rise in the period 1996-1999, with a subsequent decrease.

<FIGURE 4>

What caused the significant increase in the share of gross income/wages accruing to the high income group (be it top 20, 10 or 5 per cent), during the first years of transition? An explanation for the increasing share of income accruing to the top wage-earners was offered by Atkinson (1998), who cited greater individualization of labour contracts as a major cause. This process of individualization of labour contracts gained considerable momentum in the early years of transition in Slovenia. The SORS, starting in 1993, publishes data on the number of individual labour contracts; these have increased from 10,885 in March 1993 to 14,104 in September 1994. However, these data are not quite reliable, as there is considerable discrepancy between those published by the SORS and the data provided by the government Agency for Public Documentation and Services (AJPES)[12]. The more comprehensive AJPES data unfortunately do not cover the most interesting period, i.e. the early 1990s, and are being provided only since 1998. The average wage under an individual contract represented some 2.8 times the average wage of wage-earners under collective wage contracts, placing most persons on individual labour contracts in the top 5 per cent of wage-earners. The total amount of wages disbursed according to individual contracts represented some 10.6 per cent of all wages in December 1998. The data from Table 5 clearly imply that since 1998, there has been very little change in the number of individual contracts and in the ratio between the average wage under an individual contract and the average wage under a collective contract. This ‘non-trend’ in the

[12] For example, the number of individual labour contracts in September 1998 was, according to the SORS 15,594, whereas the corresponding figure provided by AJPES (for December 1998) was 24,085.

dynamics of individual contracts had a noticeable impact on the levelling-off (and even decrease) of the share of income accruing to the top income earners.

<TABLE 5>

One must also note that individual labour contracts are concentrated in the private sector, as seen from Table 6, where these persons represent some 4.9 per cent of all employees in the private sector, with the corresponding share in the public sector being only 1.6 per cent. Bearing in mind also the fact that more than 5 per cent of employees in the private sector receive minimum wage (see Table 6), it is not surprising that income inequality among wage-earners in the private sector is much larger than in the public sector, as seen from Table 7.

<TABLE 6>

<TABLE 7>

Fairly similar trends in income inequality in the private and public sector can be observed from Table 7. In particular, the large increase in the Gini coefficient in the period 1993-1995 occurred in both the public and private sector. In view of the fact that the number of persons employed in the public sector and having an individual labour contract is rather low, the similarity between these two developments points to other possible causes for the large increase in inequality during the 1993-1995 period. In particular, the PIT legislation ought to be singled out. This legislation was first introduced in 1991, with a new (second) law superseding the first already in 1993. It appears that strong pressures for 'neutralizing' the effects of tax progressivity (which the second law even enhanced) could not be resisted, and wage dispersion increased. Policy-makers reacted to this increase in 1995, by passing a law 'On Enforcing the Agreement on Wage Policy and Other Payments to Employees and the Social Agreement for 1995, and the Maximum and Minimum Wage'. Whether this law actually served to stem the tide of increasing wage dispersion, or whether the law came into force 'after the storm', i.e. when the 'adaptation' to the new PIT has already been achieved, is a moot question.

Since 2001, the dynamics of income inequality in the private and public sector were out of synch. In that year, the Gini coefficient for income inequality in the public sector decreased, with a further large decrease in 2002. There has been no comparable change in the private sector.

5. Concluding Remarks

Our analysis was focused on exploring income inequality among wage-earners. Such an analysis does not give the whole 'picture', as it is confined to the analysis of market incomes of wage-earners. It does not deal with market incomes of other labour active groups (such as self-employed). Also missing from the broader 'picture' is the analysis of incomes after taxes and social transfers – and such an analysis of income inequality, using current disposable monetary income, is based on the household as the unit of analysis, and not on the individual. In spite of these limitations, several conclusions clearly emerge. Income inequality sharply increased in the early years of transition, up

to the mid-1990s. However, after 1995 the increases were modest, and a decrease being recorded in 2002. Though the large increase in the number of individual labour contracts most likely had a certain impact on increasing wage dispersion, the personal income tax legislation quite possibly triggered the large increases in wage inequality. The distribution of income after PIT withholding tax (for wage-earners) shows smaller increases in income inequality than the distribution of gross income, and the registered increase in income inequality would certainly be even smaller for 'true' after-tax income.

What will be the course of income inequality in the future? External and internal factors will influence the dynamics of income inequality, as globalization and internationalization of production will bear strong competitive pressure on a large part of the Slovenian economy. The extent of these pressures can best be illustrated by the plight of the textile industry in Slovenia. The number of persons employed in this industry nearly halved – from 40,663 in 1993 to only 21,662 in 2003. The average wage in the textile industry represented some 70 per cent of the national average wage in 1993 and only 61 per cent in 2003. While legislation and collective wage agreements can (and do) influence the distribution of gross wages, they can do little to prevent the effects of globalization on a small and open economy. This means that labour intensive manufacturing sectors will face continuing competitive pressure and consequently downward pressure on wages, whereas sectors shielded from international competition will continue to exert upward pressure on wages.

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7. Appendix

<TABLE A1>

Table 1: The structure of gross income of wage-earners, taxable persons for PIT, 1993-2002

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Wages, wage compensations and cost reimbursements	0.9181	0.9029	0.9005	0.8938	0.8938	0.8998	0.9026	0.9071	0.9089	0.9093
Fringe benefits	0.0023	0.0039	0.0041	0.0047	0.0059	0.0044	0.0044	0.0041	0.0035	0.0033
Allowance for annual vacation	0.0559	0.0501	0.0540	0.0565	0.0546	0.0493	0.0475	0.0453	0.0449	0.0458
Severance pay for retirement, awards, solidarity payments and other wage-related payments[1]	–	0.0019	0.0013	0.0020	0.0021	0.0032	0.0033	0.0037	0.0034	0.0036
Pensions and compensations paid by the IPDI	0.0046	0.0041	0.0058	0.0063	0.0054	0.0054	0.0056	0.0058	0.0061	0.0059
Wages from abroad	0.0000	0.0043	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pensions from abroad	0.0000	0.0043	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Income from contractual work[2]	–	0.0073	0.0075	0.0078	0.0076	0.0074	0.0073	0.0074	0.0074	0.0072
Income of students, received through student organisations[3]	–	0.0001	0.0002	0.0002	0.0006	0.0003	0.0003	0.0003	0.0002	0.0002
Cadastral income less relevant tax relief and tax exemptions	0.0024	0.0034	0.0030	0.0027	0.0024	0.0021	0.0022	0.0014	0.0013	0.0017
Self-employment income	0.0009	0.0012	0.0016	0.0016	0.0017	0.0016	0.0017	0.0019	0.0020	0.0021
Capital gains	0.0017	0.0003	0.0002	0.0003	0.0003	0.0003	0.0005	0.0004	0.0006	0.0015
Income from capital and property	0.0037	0.0036	0.0081	0.0102	0.0126	0.0121	0.0111	0.0102	0.0102	0.0097
Royalties and income from property rights	0.0103	0.0125	0.0136	0.0138	0.0130	0.0141	0.0135	0.0124	0.0115	0.0097

Notes:

[1] The category did not exist in 1993, whereas in 1994 it was labelled 'other wage-related income'.

[2] The category was not included in computation for 1993.

[3] The category did not exist in 1993.

Table 2: The Gini coefficient and concentration coefficients for income sources, wage-earners, 1993-2002

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Gini coefficient										
Total	0.2718	0.2794	0.2950	0.2988	0.3024	0.3053	0.3119	0.3109	0.3131	0.3083
Concentration coefficients										
Wages, wage compensation and cost reimbursements	0.2814	0.2873	0.3058	0.3092	0.3112	0.3113	0.3177	0.3181	0.3208	0.3160
Fringe benefits	0.5353	0.4349	0.4393	0.4257	0.4929	0.6180	0.6224	0.6577	0.6355	0.6620
Allowance for annual vacation	0.1074	0.0863	0.0528	0.0605	0.0678	0.0623	0.0788	0.0519	0.0492	0.0639
Severance pay for retirement, awards, solidarity payments and other wage-related payments	–	0.4313	0.5217	0.5315	0.4932	0.6002	0.6208	0.6544	0.7270	0.7288
Pensions and compensations paid by IPDI	–0.4381	–0.3906	–0.2721	–0.2765	–0.4031	–0.4069	–0.4546	–0.4317	–0.4331	–0.4530
Wages from abroad	0.2573	0.2579	0.5171	–0.1783	–0.1325	–0.8076	0.5113	–0.1517	0.6488	0.1817
Pensions from abroad	0.0901	0.2583	0.3275	0.0707	–0.3696	–0.1145	–0.1250	–0.2615	0.1307	–0.1547
Income from contractual work	–	0.3878	0.4442	0.4753	0.5210	0.5335	0.5725	0.5725	0.5959	0.5956
Income of students, received through student organisations	–	–0.1333	–0.3089	–0.2300	–0.7304	–0.4352	–0.2428	–0.2431	–0.3771	–0.4218
Cadastral income less relevant tax relief and tax exemptions	0.0023	0.0033	0.0269	0.0334	0.0303	0.0296	0.0286	0.0388	0.0225	0.0153
Self-employment income	0.2191	0.1519	0.1518	0.1818	0.2025	0.1712	0.1175	0.1731	0.1408	0.1176
Capital gains	0.1190	0.3414	0.1953	0.1218	0.3921	0.4019	0.3142	0.4422	0.6299	0.5892
Income from capital and property	0.4870	0.4974	0.5212	0.5326	0.5204	0.5292	0.5340	0.4962	0.4905	0.4984
Royalties and income from property rights	0.5859	0.5891	0.6007	0.5959	0.6126	0.6352	0.6349	0.6209	0.6297	0.5955

Table 3: The Gini coefficients for gross income and concentration coefficients for social contributions, withheld PIT and 'net' income, wage-earners, 1993-2002

Year	Gini coefficient for gross income	Concentration coefficient for withheld PIT	Concentration coefficient for social contributions	Concentration coefficient for 'net' income
1993	0.2718	0.3835	0.2784	0.2452
1994	0.2794	0.4595	0.2848	0.2386
1995	0.2950	0.4720	0.3031	0.2546
1996	0.2988	0.4751	0.3055	0.2575
1997	0.3024	0.4793	0.3074	0.2616
1998	0.3053	0.4840	0.3102	0.2634
1999	0.3119	0.4911	0.3164	0.2693
2000	0.3109	0.4885	0.3169	0.2678
2001	0.3131	0.4906	0.3188	0.2697
2002	0.3083	0.4844	0.3149	0.2652

Note: Computed on the basis of the PIT database.

Table 4: The distribution of gross income (of wage-earners) and wages, Slovenia, 1993-2002

	Bottom 20 per cent		Top 20 per cent		Top 10 per cent		Top 5 per cent		The Gini Coefficient	
	A	B	A	B	A	B	A	B	A	B
1993	0.0990	0.0992	0.3724	0.3677	0.2325	0.2263	0.1461	0.1374	0.2718	0.2638
1994	0.0980	0.0961	0.3776	0.3854	0.2424	0.2418	0.1577	0.1496	0.2794	0.2823
1995	0.0916	0.0973	0.3859	0.3905	0.2492	0.2491	0.1610	0.1556	0.2950	0.2859
1996	0.0921	0.0969	0.3896	0.3888	0.2538	0.2475	0.1653	0.1515	0.2988	0.2831
1997	0.0906	0.0940	0.3922	0.3943	0.2550	0.2524	0.1666	0.1577	0.3024	0.2946
1998	0.0909	0.0956	0.3954	0.3915	0.2581	0.2511	0.1686	0.1576	0.3053	0.2913
1999	0.0902	0.0923	0.4014	0.3985	0.2633	0.2568	0.1724	0.1631	0.3119	0.3009
2000	0.0911	0.0903	0.4003	0.3994	0.2606	0.2551	0.1708	0.1603	0.3109	0.3038
2001	0.0907	0.0900	0.4032	0.4009	0.2617	0.2562	0.1711	0.1613	0.3131	0.3073
2002	0.0927	0.0899	0.4006	0.3983	0.2581	0.2526	0.1681	0.1570	0.3083	0.3045

Source: A – Statistical Office of the Republic of Slovenia, data from the PIT database.
B – Statistical Office of the Republic of Slovenia, Rapid Reports (The distribution of wages of employees in firms and other organisations, in September).

Table 5: The number of wage-earners, the amount of disbursed wages and the average wage – collective and individual labour contracts, December 1998 and December 2003

Category	December 1998	December 2003
Collective contracts		
Number of wage-earners	577,470	581,550
Amount of disbursed wages (in billion SIT)	85.9	142.1
Average wage (in thousand SIT)	148.7	244.3
Individual contracts		
Number of wage-earners	24,085	23,245
Amount of disbursed wages (in billion SIT)	10.2	16.1
Average wage (in thousand SIT)	423.4	691.7

Source: Internal documentation of AJPES.

Table 6: Number of employees, number of employees receiving minimum wage and average wage according to sector (public, private), December 2003

Category	Public sector	Private sector
Collective contracts		
Number of employees	145,483	436,067
Number of employees receiving minimum wage	–	22,899
Average wage (in thousand SIT)	317.7	219.9
Individual contracts		
Number of employees	2,287	20,258
Average wage (in thousand SIT)	700.6	690.3

Source: Internal documentation of AJPES.

Table 7: The Gini coefficient of income inequality, private and public sector, 1993-2002

Year	All	Private sector	Public sector
1993	0.2718	0.2689	0.2345
1994	0.2794	0.2778	0.2594
1995	0.2950	0.2941	0.2712
1996	0.2988	0.2959	0.2719
1997	0.3024	0.2971	0.2771
1998	0.3053	0.3015	0.2827
1999	0.3119	0.3061	0.2909
2000	0.3109	0.3052	0.2895
2001	0.3131	0.3064	0.2848
2002	0.3083	0.3043	0.2699

Note: Computed on the basis of the PIT database.

Table A1: The structure of taxable persons, income, paid PIT and net repayments of PIT by income tax brackets, 1993-2001

	1993	1994	1995	1996	1997	1998	1999	2000	2001
Structure of taxable persons, by income tax brackets									
I.	55.0	59.17	59.62	61.14	61.70	62.97	62.82	63.33	63.78
II.	35.9	31.22	30.84	29.57	28.90	27.59	27.90	27.50	26.89
III.	7.8	5.95	5.83	5.58	5.63	5.43	5.51	5.49	5.61
IV.	1.2	1.79	1.80	1.77	1.79	1.75	1.78	1.75	1.76
V.	0.2	1.23	1.25	1.26	1.23	1.19	1.24	1.20	1.24
VI.	–	0.64	0.66	0.68	0.74	0.71	0.76	0.73	0.72
All	100.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Structure of gross income, by income tax brackets									
I.	29.53	35.38	35.67	36.76	37.06	38.35	38.08	38.52	38.66
II.	45.53	38.57	38.06	36.86	36.05	35.22	34.85	34.73	34.09
III.	18.20	11.85	11.70	11.39	11.47	11.21	11.28	11.33	11.62
IV.	5.32	5.07	5.16	5.13	5.20	5.13	5.17	5.12	5.18
V.	1.43	4.81	4.94	5.06	4.95	4.88	5.00	4.91	5.05
VI.	–	4.33	4.47	4.80	5.27	5.20	5.60	5.40	5.40
All	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

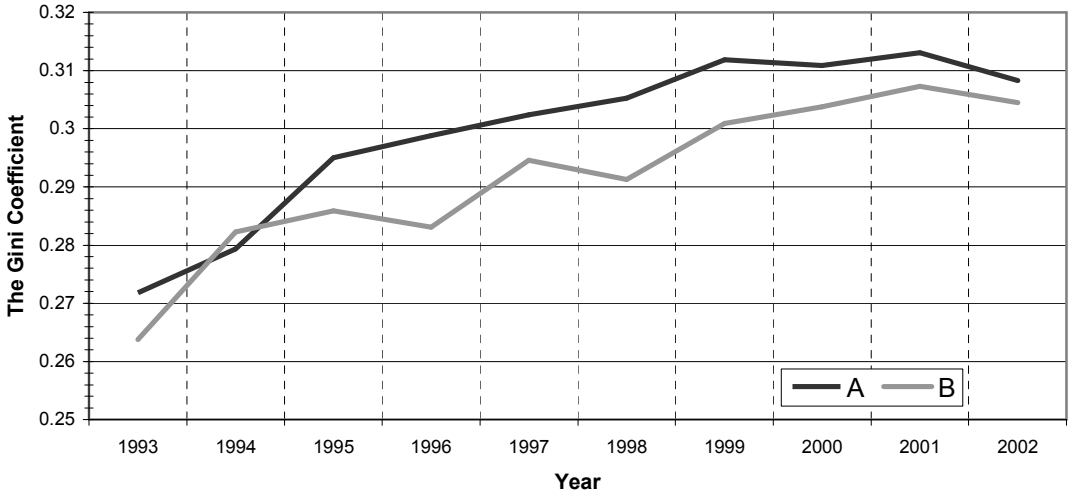
Table A1: The structure of taxable persons, income, paid PIT and net repayments of PIT by income tax brackets, 1993-2001 (continued)

	1993	1994	1995	1996	1997	1998	1999	2000	2001
Paid PIT as percentage of gross income, by income tax brackets									
I.	9.11	6.00	5.81	4.40	5.67	5.62	5.23	5.19	5.55
II.	11.73	11.11	10.97	9.46	10.68	10.49	10.37	10.42	10.54
III.	16.11	16.14	16.22	14.16	16.22	16.10	16.09	16.17	16.34
IV.	21.92	20.01	20.02	17.29	20.08	19.78	19.80	19.78	20.13
V.	27.74	23.58	23.62	19.84	23.66	23.34	23.52	23.52	23.58
VI.	–	29.72	29.76	24.83	29.93	29.62	30.07	29.85	30.12
All	12.52	11.76	11.67	9.80	11.61	11.35	11.31	11.23	11.50
Net repayment (final PIT obligation less withheld PIT), as percentage of gross income, by income tax brackets									
I.	0.37	–1.41	–1.42	–1.63	–1.68	–1.76	–2.13	–2.20	–1.91
II.	0.74	–0.27	–0.12	–0.38	–0.39	–0.55	–0.59	–0.73	–0.78
III.	0.92	0.38	0.40	0.20	0.19	–0.03	0.02	–0.17	–0.26
IV.	1.72	0.95	0.82	0.69	0.55	0.24	0.46	0.17	0.16
V.	6.50	1.67	1.42	1.20	1.17	0.84	1.08	0.86	0.65
VI.	–	3.89	4.23	4.40	3.88	3.26	4.05	3.37	3.16
All	0.80	–0.26	–0.20	–0.41	–0.45	–0.65	–0.71	–0.89	–0.83

Note: In 1993 there were five income tax brackets and since 1994 there were six income tax brackets. In 1993, the width of income tax brackets was as follows: first two brackets – approximately 50% of average gross wage, third and fourth bracket – approximately 100% of average gross wage, while the fifth was open. Since 1994, the width of the first four tax brackets was approximately 50% of average gross wage, the fifth was some 100% of average wage, whereas the sixth was open.

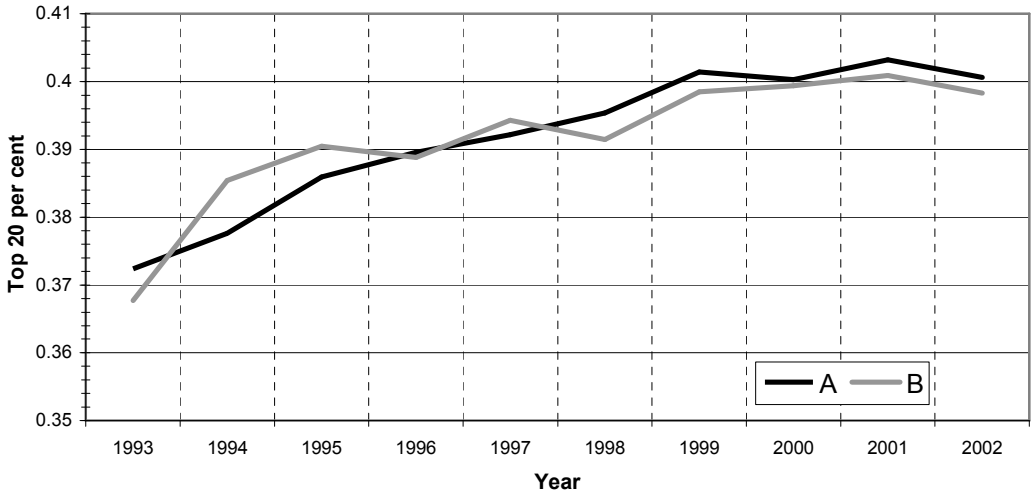
Source: For 1993: Analiza podatkov o odmeri dohodnine za leto 1993 in primerjava z leti 1992 in 1991, RUJP. For other years: Dohodnina 2001, DURS.

Figure 1: The Gini coefficient for gross income/wages, 1993-2002



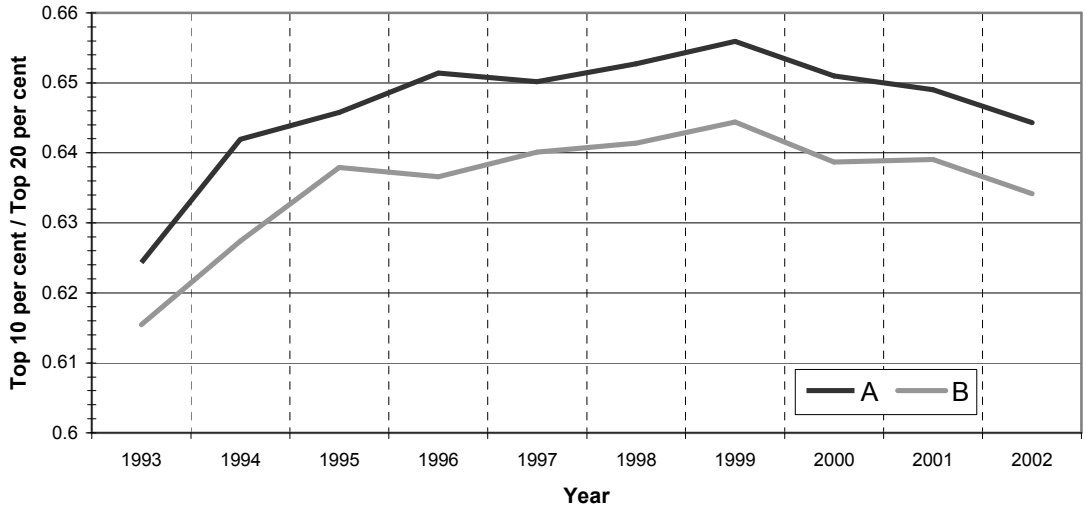
Source: A – Statistical Office of the Republic of Slovenia, data from the PIT database.
B – Statistical Office of the Republic of Slovenia, Rapid Reports (The distribution of wages of employees in firms and other organisations, in September).

Figure 2: Share of gross income/wages accruing to the top 20 per cent of wage earners, 1993-2002



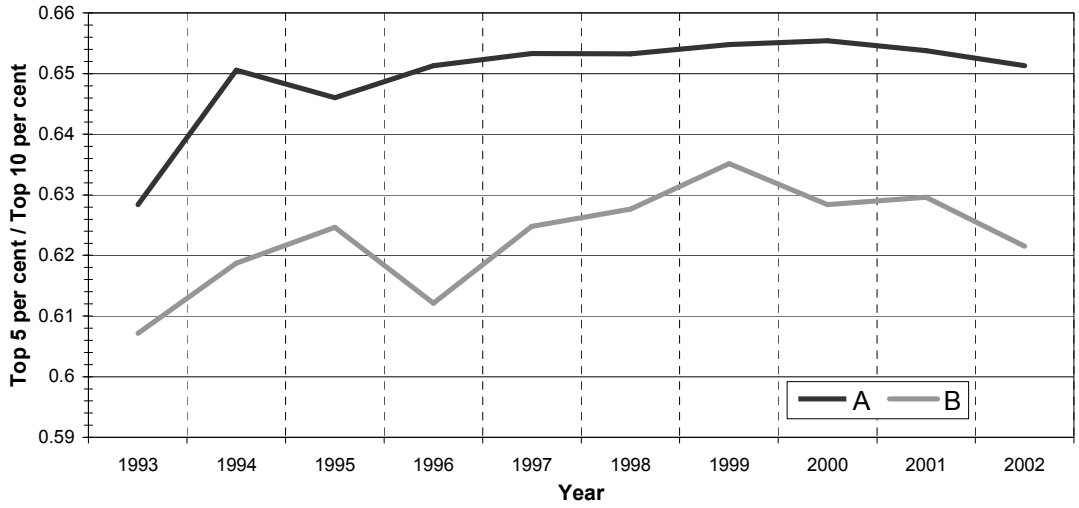
Source: A – Statistical Office of the Republic of Slovenia, data from the PIT database.
B – Statistical Office of the Republic of Slovenia, Rapid Reports (The distribution of wages of employees in firms and other organisations, in September).

Figure 3: The share of gross income/wages of the top 10 per cent of wage-earners in gross income/wages of top 20 per cent of wage earners, Slovenia, 1993-2002



Source: A – Statistical Office of the Republic of Slovenia, data from the PIT database.
B – Statistical Office of the Republic of Slovenia, Rapid Reports (The distribution of wages of employees in firms and other organisations, in September).

Figure 4: The share of gross income/wages of the top 5 per cent of wage-earners in gross income/wages of the top 10 per cent of wage-earners, Slovenia, 1993-2002



Source: A – Statistical Office of the Republic of Slovenia, data from the PIT database.
B – Statistical Office of the Republic of Slovenia, Rapid Reports (The distribution of wages of employees in firms and other organisations, in September).