

Holzner, Mario; Leitner, Sebastian

Research Report

Inequality in Croatia in Comparison

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Sebastian Leitner and Mario Holzner

Inequality in Croatia in Comparison

Sebastian Leitner and Mario Holzner are Research Economists at wiiw.

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*Sebastian Leitner and
Mario Holzner*

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in Comparison**

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Abstract

The paper analyses economic inequality in Croatia in comparison with other transition economies of Central, East and Southeast Europe. It comprises a literature review and a descriptive analysis as well as an econometric modelling exercise. The main findings are the following: Over the entire transition period, Croatia has had a rather low and remarkably stable level of income inequality. The decomposition analysis of the period 2000-2006 shows that, although the concentration of income from paid employment was rising, overall stability of income inequality was due to a reduction of the more unequally distributed income from self-employment as well as to improved targeting of public transfers in later years. By contrast, the redistributive effect of the system of public pensions is rather low and could be improved. The outcome of the econometric analysis suggests that Croatia should further aim for a high share of government expenditures and a low level of inflation, in order to achieve a reasonable redistribution of disposable income and a stable development of real income. At the same time Croatia should increase its share of exports of goods and services in GDP to raise employment in the more productive export industries. Efforts to further decrease the relatively high unemployment rate would yield positive distributional effects as well.

Keywords: *inequality, income distribution, transition economies, Croatia*

JEL classification: *D63, O15, P36*

Executive summary

The paper analyses economic inequality in Croatia in comparison with other transition economies of Central, East and Southeast Europe. It comprises a literature review and a descriptive analysis as well as an econometric modelling exercise.

- *A rise in inequality can be observed in all countries of Central, East and Southeast Europe during the transition period from 1989 onwards. However, the situation differs from country to country, depending on the institutional heritages as well as the transition policies chosen. In the CIS region as a whole, the strong rise in income inequality continued until 1996, leading to Gini coefficients¹ above 40. After 2000, when GDP growth revived, the situation of inequality somewhat improved. In the Southeast European countries and the Baltics, the increase in income dispersion was less spectacular. Nevertheless, in 2006 the Gini coefficient of income amounted to about 35 in both regions. The Central European region except for Poland experienced only a slight rise in measured inequality; their Gini coefficients, ranging between 24 in Slovenia and 27 in Hungary in 2006, are low even compared to Scandinavian countries.*
- *Contrary to many other Southeast European countries, Croatia had a rather low and remarkably stable level of income inequality over the whole transition period. The Gini coefficient remained at levels between 28 and 30, which is slightly higher than the level in the CEEC-5², but still below that in the EU-25 as well as below the overall transition countries average.*
- *This is quite surprising given the relatively strong initial output loss of about 40% in Croatia in the early 1990s. It was not until 2005 that the 1989 GDP level was reached again. Moreover, Croatia experienced a rather pronounced fall in employment rates; until the end of the 1990s the unemployment rate increased to 17%.*
- *The comparative analysis of transition countries shows that there is a negative correlation between Gini coefficients and the share of compensation of employees in GDP. Although in Croatia, as in many other transition countries, the share of self-employment rose to more than 20%, the structure of the functional income distribution remained rather stable, which is one explanation for the low income inequality in the country.*
- *In addition, the changing role of labour market institutions had an important impact on rising disparities in labour earnings in the process of transition. We find a strongly negative linear correlation between union density rates and inequality in the Central European countries and also between coverage rates of collective agreements and inequality. In Croatia, union density and the coverage rate of collective agreements*

¹ The Gini coefficient describes the dispersion of income inequality in a population and ranges from 0 to 100. A Gini coefficient of 0 would describe a perfectly egalitarian situation of income distribution, while a Gini coefficient of 100 leaves one person with all income. In practice, the Gini coefficient of income ranges between 25 (e.g. in the Scandinavian countries) and 60 (such as in Brazil).

² The CEEC-5 country group comprises the Czech Republic, Hungary, Poland, Slovenia and the Slovak Republic.

remained quite high as compared to other transition countries, at 40% and 60% respectively, and thus the rise in inequality of labour earnings could be curbed.

- *In general, fiscal policies play an important role in shaping the inequality of disposable incomes. While in many transition countries the distributional effect of the income tax system was reduced, in Croatia the redistributive impact fell only slightly. In addition, state expenditures are quite high. In 2005, public transfers accounted for 31% of total household income. This share is closer to that of Sweden (37%) than, for instance, to that of the Czech Republic (24%). Nevertheless, there are countervailing forces at work as well. The Croatian privatization process started in an environment of so-called crony capitalism. There is evidence that this process may have left the extreme tails of the income distribution further apart than in other comparable countries.*
- *However, decomposing income inequality from Croatian household budget surveys shows that, in the more prosperous years after the turn of the century (2001-2006), especially the central six deciles could increase their real disposable income. The top two deciles, and the bottom two deciles even more so, experienced lower rates of increase. In fact the available income of the first decile decreased slightly during the last years of the period under investigation. The decomposition analysis also shows that, although the concentration of income from paid employment was rising, overall stability of income inequality is due to a reduction of self-employment income. Also, the targeting of the system of public transfers has improved in recent years. By contrast, the redistributive effect of the system of public pensions is rather low, especially when compared to EU countries.*
- *In our econometric analysis we use a model identifying the determinants of inequality in transition countries. We find a positive correlation between liberalization in the public utilities sector, high shares of unemployment as well as employment, and high levels of real interest rates as well as inflation rates, on the one hand, with income inequality in transition, on the other. Conversely, price liberalization, trade and foreign exchange liberalization and a high share of exports of goods and services in GDP are negatively correlated with inequality. A negative correlation is also found for a high share of industrial employment in total employment, an increase of productivity in industry, a high share of general government expenditures and high rates of non-performing loans, respectively.*
- *Comparing the underlying Croatian data with the average of the transition economies and that of the five Central European countries yields the following results: Compared to the first group it becomes obvious that particularly in the field of public utilities liberalization 'overperformed', while its development in labour productivity in industry was below average. On the positive side, Croatia has an above-average degree of liberalization of trade and the foreign exchange system, a higher share of employment in industry, higher general government expenditures and a lower inflation rate. These*

are the reasons why Croatia has a lower level of inequality than the average transition country.

- *However, Croatia has a higher level of income inequality than the average Central European country. When comparing the underlying Croatian data with this group of countries, we observe that Croatia's performance is worse with respect to the export share and employment in industry, the unemployment rate as well as the real interest rate level. Only a higher productivity increase and a significantly lower level of inflation do stand out positively.*
- *Policy recommendations to stabilize or even lower income inequality in Croatia should focus on a high share of government expenditures and a low level of inflation. This should provide for a reasonable redistribution of disposable income and a stable development of real income. However, the targeting of public expenditures, in particular concerning pensions, could be improved. At the same time Croatia should increase its share of exports of goods and services in GDP in order to gain employment in the more productive export industries. Efforts to further decrease the high share of unemployment should have positive effects on income distribution in Croatia.*

Inequality in Croatia in comparison

1 Introduction

Looking at the literature on inequality with a focus on transition economics, Branko Milanovic's *Explaining the Increase in Inequality During Transition* (Milanovic, 1999) stands out among the main papers in this field. He concludes that the most important factors driving overall inequality upwards are to be found in the field of changing labour market outcomes. Other authors argue that pre-transition Gini coefficients are not correctly measured and do not properly consider inequality in a shortage economy. In any case, although severe changes in income and welfare distribution have occurred in the region, inequality in transition economies has apparently not increased as dramatically as predicted by some authors at the beginning of transition. Przeworski (1991), for example, expected a convergence of the transition economies to the extremely high level of inequality found in Latin America.

While a rise in inequality can be observed in the whole transition region (see Table 1 in the Annex), the situation differs from country to country, depending on the institutional heritage as well as the transition policies chosen. The Gini coefficients reported for the Central European countries except Poland have remained, although rising, in the rather low range of Sweden and Austria. However, the Baltic states, Bulgaria, Romania and Poland have reached the level of the United Kingdom, the latter being one of the Western European countries with the highest level of inequality. The Western Balkan countries (except Croatia) share a level of inequality comparable to that of Bulgaria and Romania, whereas Russia's as well as the CIS countries rising Gini coefficients indicate a fast growing asymmetry in the distribution of income and wealth during transition.

The paper is structured as follows. Chapter 2 provides a descriptive analysis of the main sources of the rise of inequality in transition and also looks at the specific case of Croatia. Chapter 3 describes in more detail the development of inequality in Croatia and the structural aspects thereof. In Chapter 4 we estimate an econometric model explaining inequality in transition countries using a general to specific approach and applying the results to the particular case of Croatia.

2 Inequality in transition and the case of Croatia

In this chapter we give an overview of the ongoing discussion on the development of income inequality in the transition countries and analyse the possible reasons for the observed increase in inequality. The analysis of the sources of inequality will furthermore

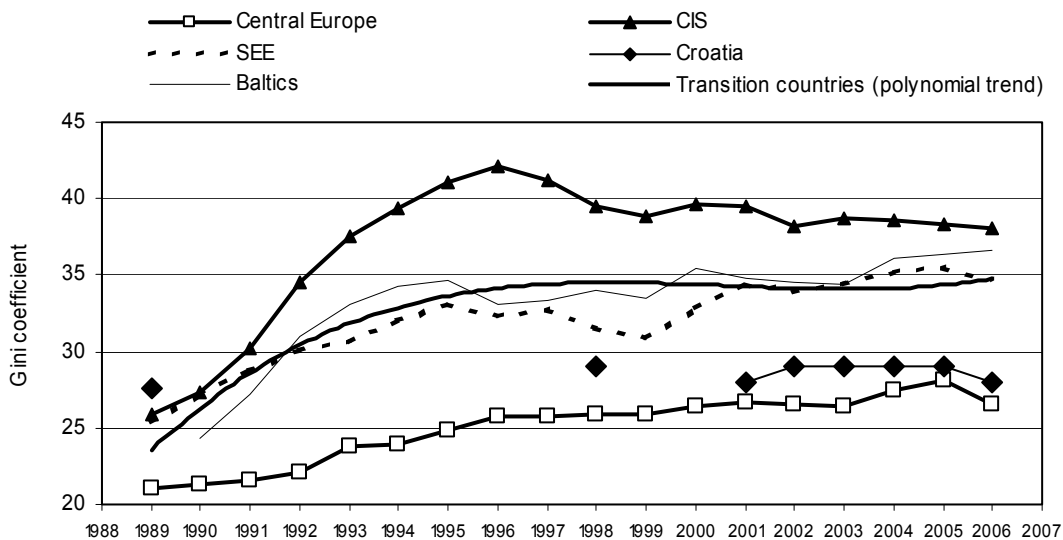
allow us to conceive why in some of the Central European countries, such as Croatia, the rise in the level of inequality has remained quite moderate. The chapter is based on previous work of Leitner and Holzner (2008).

2.1 Recent picture of income inequality in the region

Although a rise in inequality can be observed in all transition countries, the situation differs from country to country, depending on the institutional heritage as well as the transition policies chosen. Looking at the development of average inequality (indicated by the Gini coefficient) in the four main country groups of the former socialist region analysed here (Central Europe, Southeast Europe, Baltic states and CIS)³, we see that in all of those the liberalization of markets has led to a substantial rise in income dispersion (see Figure 1). The change was most dramatic in the CIS region, with Russia experiencing the strongest increase after the break-up of the Soviet Union.

Figure 1

Development of Inequality in Central Europe, Baltic States, SEE, Croatia and CIS, 1989-2006
unweighted averages of Gini coefficients (income based)



Note: *The Gini coefficient describes the dispersion of income inequality in a population ranging from 0 to 100. A Gini coefficient of 0 would describe a perfectly egalitarian situation of income distribution, while a Gini of 100 leaves one person with all income. In practice the Gini coefficient of income ranges between 20 (e.g. in the Scandinavian countries) and 60 (such as in Brasil).

Source: UNU-WIDER: World Inequality Database Version 2.0c, Central Bureau of Statistics - Croatia, Nestić 2005,

Table 1 (in the Annex) reveals the large divergence of inequality development across the transition countries. While Belarus and Ukraine showed no particular increase in inequality, the Caucasus region as well as Central Asian CIS countries experienced rising dispersion

³ The four country groups are defined in Table 1 in the Annex.

– although the picture is rather mixed. In the CIS region as a whole the strong rise in income inequality continued until 1996. The subsequent reduction up to 1999 was followed by a halt in the aftermath of the rouble crisis, but after 2000 when GDP growth revived the situation of inequality improved as well.

In the Central European region, the Czech and Slovak Republics and also Hungary experienced only a slight rise and Slovenia even a reduction in measured inequality, therefore their Gini coefficients are low even when compared to Scandinavian countries. By contrast, in Poland where high shares of self-employed still work to a large extent in the agricultural sector, a sharper rise of the Gini coefficients took place. An even faster increase in inequality was experienced by the Baltic States, which after gaining their national sovereignty adopted a quite liberal approach in restructuring their economy. Although the first jump in the Gini index in the first half of the 1990s was followed by a rather stable development, we see a gradual but continuous rise of inequality up to 2005. A similar development can be observed in the Southeast European countries, but here the average level of inequality is somewhat higher. In part this is due to the large agricultural sectors in Bulgaria and Romania as well as in Macedonia and Serbia. The only country in the region with a rather low and remarkably stable Gini coefficient is Croatia. As can be seen from Figure 1, at the end of the 1980s the level of inequality was slightly above the average of other transition countries, pointing to the fact that the economy was already more liberalized at that time. Although for the period between 1989 and 1998 no data are available on income inequality in Croatia, one may conclude from the rising inequality of earnings (i.e. wages and salaries only) during the first half of the 1990s (see Rutkowski, 1996) that also a rise of income inequality occurred in Croatia as in other transition countries. However, until 1998 a relapse of the Gini coefficient to a value of 29 took place. Thereafter only minor changes occurred, leaving Croatia with a level of income inequality only slightly above that of the Central European transition countries on average.

In the following we analyse the macroeconomic developments that influenced the inequality outcomes in the region. Furthermore we look at specific changes in the structure of labour markets. The overall inequality development of household incomes per capita, which is illustrated by the Gini indices presented above, is shaped by tax and transfer policies differing from country to country as well as by further structural policies discussed below.

2.2 The process of transition

Following the fall of the communist regimes in Central Europe in 1989 and the break-up of the Soviet Union in 1991, sooner or later a series of reforms were introduced in all countries of the region, with the aim to transform the economic systems from central planning to market economies. These reforms comprised the liberalization of internal

markets, external trade and financial markets, the retreat of state influence from the productive sphere via hardening the budget constraints of state-owned enterprises as well as their privatization.

Although the political and economic process of transition always comprised a bundle of different and sometimes conflicting policies varying from country to country, the problems to be coped with were quite similar. The way in which politicians, foreign advisers and analysts thought about the modes of transition policy to be optimally chosen diverged, in particular on the speed and depth of the reforms to be taken, at least in the period of early transition. The proponents of 'shock therapy' argued for fast liberalization and privatization relying on market forces to establish nominal stability, which should subsequently foster growth via private investment.

Those who advocated a gradualist approach pointed out that the adaptability of market agents (entrepreneurs as well as employees) is limited. The required conversion of institutional capacities from a communist to a market economy in order to guarantee sustainable growth would take time. Therefore a fast break-up of existing structures should be avoided since this would lead to a substantial loss of output, jobs and thus welfare in the short to medium run (Jeffries, 2002; Gabrisch und Hölscher, 2006). The *ex-post* analysis of more than a decade of transition shows that, apart from the speed chosen concerning the liberalization of prices, markets and property rights, the building-up of proper institutions establishing a market economy was of crucial importance particularly for the outcomes concerning income inequality.

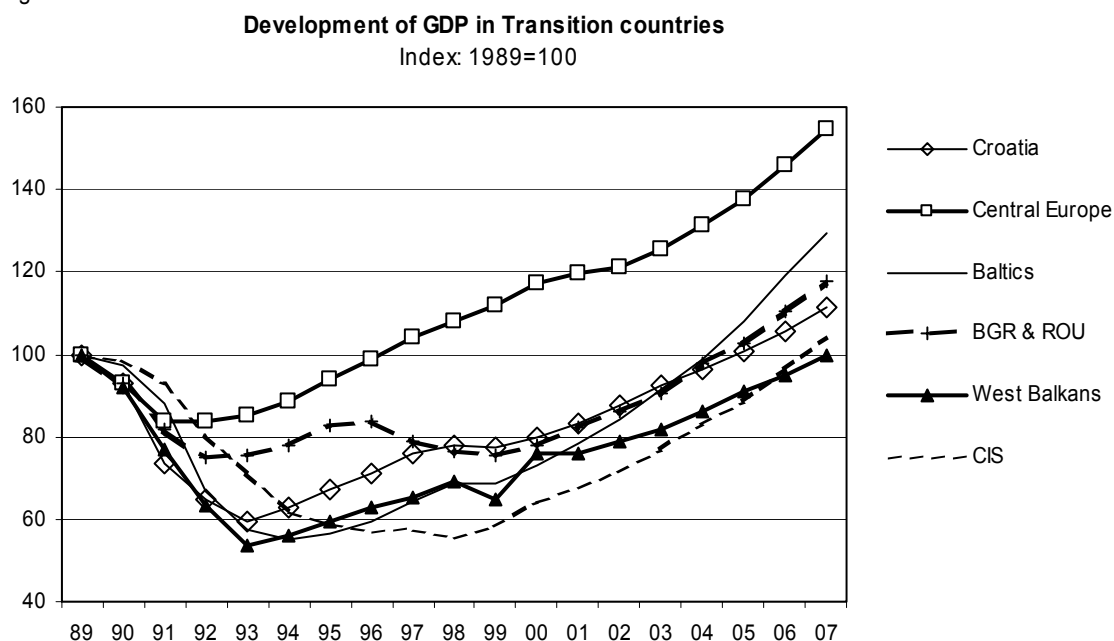
The starting conditions differed quite substantially for the individual transition economies, making comparisons difficult. However, it can be said that most of the transition economies neither followed a purely gradualist approach nor a purely 'shock therapy' approach, but rather a mixed one. This is also true for Croatia. Following Bičanić and Franičević (2003) it can be argued that Croatia's first transition phase, still as a part of the Yugoslav federation at the end of the 1980s, was more of a gradualist nature, while the second stage of transition after independence in 1991 was more of a Washington consensus type.

2.3 Loss in output

Regardless of the transition policies implemented, the liberalization of markets in all Central, East and Southeast European countries triggered a massive reallocation of resources, leading to a severe recession at least in the first half of the 1990s. However, the magnitude of output losses and the duration of GDP decline varied considerably. Looking at Figure 2, we can see that in Central European countries GDP growth recovered already between 1994 and 1995. This is with the exception of Poland, which experienced an upswing as early as 1992. For the Baltic states, being highly integrated in the production

system of the Soviet Union before 1991, the break-up of the USSR and the reorientation towards Northern and Western European markets led to a fall of GDP by almost 50%, although the recovery set in already in 1995/1996. In some of the CIS countries such as Russia, Ukraine and Moldova, the bottom of the output decline was not reached until the end of the 1990s, with output losses of 45% on average. In the region of Southeast Europe, Bulgaria as well as Romania experienced an early recovery, which was followed by a further period of recession between 1994 and 1998. The republics of the former Yugoslavia obviously suffered severely from the effects of the Balkan wars, either directly or indirectly via the break-up of trade and production linkages, and subsequently by (partly still existing) investment barriers. The initial output loss of nearly 45% in the Western Balkan region as a whole was followed by moderate growth performance, and the former level of GDP was not reached until 2007. In Croatia the development was slightly less severe. In the early 1990s the initial output loss was about 40% of the 1989 GDP. After a short period of upswing the 1998 banking crisis caused stagnation. After 2000 growth picked up again. The 1989 GDP level was only reached in 2005.

Figure 2



Source: EBRD database, wiiw calculations.

In most of the Central European countries, the pre-transition level of GDP was reached sooner, by the turn of the century. In the CIS, output still stagnated in the second half of the 1990s. From 2000 onwards a remarkable rebound of growth was recorded. After the effects of the Russian rouble crisis in 1998 had been overcome, and supported by the rise in fuel prices as well as those for e.g. metals, growth rates increased rapidly. However, so far only a few of the CIS countries have managed to reach the GDP levels of 1989.

Not very surprisingly, a strong correlation between output loss in the early stages of transition and the rise in inequality (measures as the change in the Gini coefficient) is found in the literature. Although some authors claim that rapid liberalization lowers the inequality outcome in transition, this is far from conclusive. Some countries such as the Baltic States transformed quite swiftly into liberal market economies accompanied by rapidly rising inequality. Belarus, on the other hand, is one of the countries in the region with the least will to transform and still experiences, like a few other CIS countries, relatively low levels of inequality (Grün and Klasen, 2001).

2.4 Reduction of employment and changing structures in the labour market

The transition crisis described above was accompanied by a massive reduction of employment and substantial underutilization of labour in general (see Table 2 in the Annex). As a consequence open unemployment, which had hardly existed in the socialist era, was rising, concurrently with the emergence of different types of informal economic activity. In particular in the CIS the sharp and persistent fall in enterprises' demand for labour forced workers to move into low-productivity jobs in the services sector or subsistence agriculture, since in many of those countries social protection is lacking and the status of unemployment is not an affordable option. Moreover, the prevalence of low-productivity jobs in non-restructured enterprises in CIS countries can be seen as a further type of underemployment.

In the whole post-communist transition region a reduction of formerly high employment rates took place (see Table 2 in the Annex) – more rapidly so in the Central European and particularly in the Southeast European countries, while in the CIS the prolonged process of enterprise restructuring resulted in a delayed fall of employment rates. In the whole region not only the demand for but also the supply of labour declined, e.g. by elderly persons taking advantage of early retirement schemes particularly in Central European countries. Also, with reduced job opportunities, the share of women – who had had high employment rates compared to Western Europe in socialist times – in the labour force shrank (World Bank, 2005a).

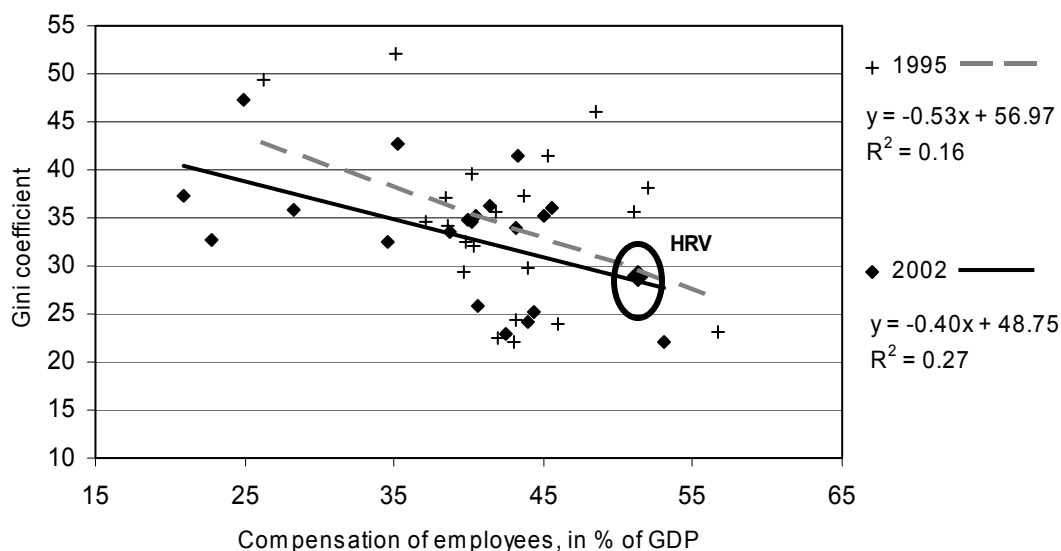
Although a rebound of growth took place in the Central European and the Baltic countries in the mid-1990s, this was not accompanied by a rise in employment for some time (see Table 2). Strong productivity growth led generally to further falling or stagnant employment rates until about 2005, with the exception of Hungary and Slovenia. In Russia, Ukraine and Belarus improvements from 2000 onwards are visible. Although also in low-income CIS countries improvements occurred, labour markets there still resemble in many respects those in low-income countries in other world regions with a dominant informal sector and widespread underemployment (World Bank, 2005a).

In the case of Croatia, employment fell by about 30% from 1990 to 2001. In the latter year the employment rate (employed to population in the age group 15-59) reached its all-time low at about 55% and the unemployment rate peaked at 17% (see Table 2 and Landesmann and Vidovic, 2006). In the following years the resurgence of economic growth allowed for a steady reduction of unemployment, which fell to below 10% of the labour force in 2007.

The fall of labour demand as well as the liberalization of labour market regulations were accompanied by the emergence of all kinds of less regulated forms of employment, be it in the form of temporary contracts, part-time work or self-employment in the sphere of the formal economy. The elimination of legal restrictions on private business activities and ownership gave rise to self-employment throughout the former socialist countries. The magnitude and reasons for that were very different, however. In the Central European countries except for Poland and in the Western Balkan countries it is mainly the emergence of small-scale entrepreneurial activities that led to a rise in the share of self-employment in 2006, by between 11% in Slovenia and 16% in the Czech Republic (a level comparable to that in Western European countries: 15%). In Poland and Romania the large share of small-scale farming resulted in above 20% shares of self-employment. In Croatia the share of self-employed in total employment rose to 21% in the year 2006. This is in line with the development in other Southeast European countries where the level of self-employment is on average higher than in the transition countries of Central Europe (Landesmann and Vidovic, 2006).

Figure 3

Correlation of functional distribution and inequality in transition countries
CE & Baltics, SEE and CIS



Sources: AMECO database, CIS STAT database, UNU-WIDER: World Inequality Database Version 2.0c .

Contrary to Central Europe, the severe recession in the CIS resulted in a much deeper collapse of jobs and wages in the formal sector, which forced employees to move into small-scale farming or petty trade. These activities were often performed in parallel with formal, low-paying or non-paying jobs. The latter was common in the CIS since in the course of delayed enterprise restructuring personnel was not laid off but instead just the payment of salaries suspended. A similar type of coping with enterprises' financial difficulties were wage arrears that concerned a large part of employees in the private but also in the public sector up to the turn of the century (World Bank, 2000a and 2005a).

From Figure 3 we can see that increases in inequality measures and differences in inequality levels between countries were shaped by the changing structure of the functional income distribution. The higher the share of wage earnings in the countries of the region, the lower the income dispersion in general. In addition, between 1995 and 2002 the correlation of the share of employees' compensation in GDP and the Gini indices became more pronounced. We may therefore conclude that one reason for the rather low level of income inequality in Croatia can be traced to the fact that the share of wages and salaries in GDP remained above average.

Irrespective of the extent of liberalization of labour market regulations, in most of the countries it was particularly low-skilled workers who were affected by firm closures or by labour force reductions in the course of enterprise restructuring. The chance to find a new job in the formal sector was fairly low. As a result many of those affected had to move into informal jobs, thereby reducing their wage costs by avoiding the tax wedge. In the Central European countries and the Baltics the informal sector is estimated to comprise between 15% and 35% of the work force, which is twice as much as in the economically advanced EU-15 region. Estimations for the Southeast European countries range between 25% and 35%, the figure for Croatia is 28%. Figures for the CIS countries, where 35-55% of the labour force are estimated to work in the informal sector, reflect that a large part of the population had to take recourse to subsistence agriculture to make a living (World Bank, 2005a).

2.5 Rising disparities in labour earnings and the role of labour market institutions

The situation of wage disparities was shaped by the enormous and still ongoing changes in the labour markets of the Eastern European countries, driven by transitional recessions and by significant sectoral and structural shifts in the period of recovery from the mid-1990s onwards. Along with the liberalization of labour market regulations, factors such as the educational attainment level, ethnicity or gender of the individual employees regained importance in shaping the emerging picture of wage distribution.

As a result, wage disparities rose above the average OECD level in most of the countries in the region. In the early phase of transition, the reported Gini coefficients for wages rose from 0.23 (in the late 1980s) to about 0.32 (in 1995) in Hungary, Poland, Slovenia and Bulgaria and from 0.25 to 0.50 in the countries of the Former Soviet Union (World Bank, 2000a). Also thereafter the disparities continued to rise. In 2002, in the Czech Republic and Slovenia, the ratio of wages of the 9th decile to the 1st decile was with 3.5 the same as that of the OECD average; the respective figures for Hungary and Poland are between 4 and 5. Bulgaria and Romania as well as Lithuania and Estonia range between 5 and 6 as do Ukraine and Belarus. Nearly all other CIS countries show much higher disparities with decile ratios between 7 and 14; Russia has a ratio of more than 10 (World Bank, 2005a).

Wage decompression has had the largest impact on the increase of total income inequality in Central, East and Southeast Europe, as has been underlined in the literature (Milanovic, 1999; Mitra and Yemtsov, 2006). Inequality not only rose between population groups reliant on their status in the labour market; independently of the speed of reforms, labour earnings disparities rose in all transition countries (World Bank, 2000a).

One of the most important factors driving the rise in wage inequalities in the Central European countries is to be found in the increase in wage premiums to education, particularly in the emerging private sector (World Bank, 2000a). As a result, returns to education nowadays tend to exceed those to be found in OECD countries, with the speed of reforms within countries positively influencing the existing premium differences (Fleisher et al., 2004; Tonin, 2006). Not only did the probability of getting unemployed rise dramatically for low-skilled workers, but also many of them left the labour force completely. Thus the activity rates of low-skilled fell considerably, especially when compared to the situation in the EU-15 (Landesmann and Vidovic, 2006). In addition, absolute income levels declined substantially, whereas highly educated employees often experienced real wage growth soon after the rebound of output growth. In the CIS where labour turnover in general and the growth of private sector employment was low, the rise in returns to education was more gradual and set in only later (World Bank, 2005a).

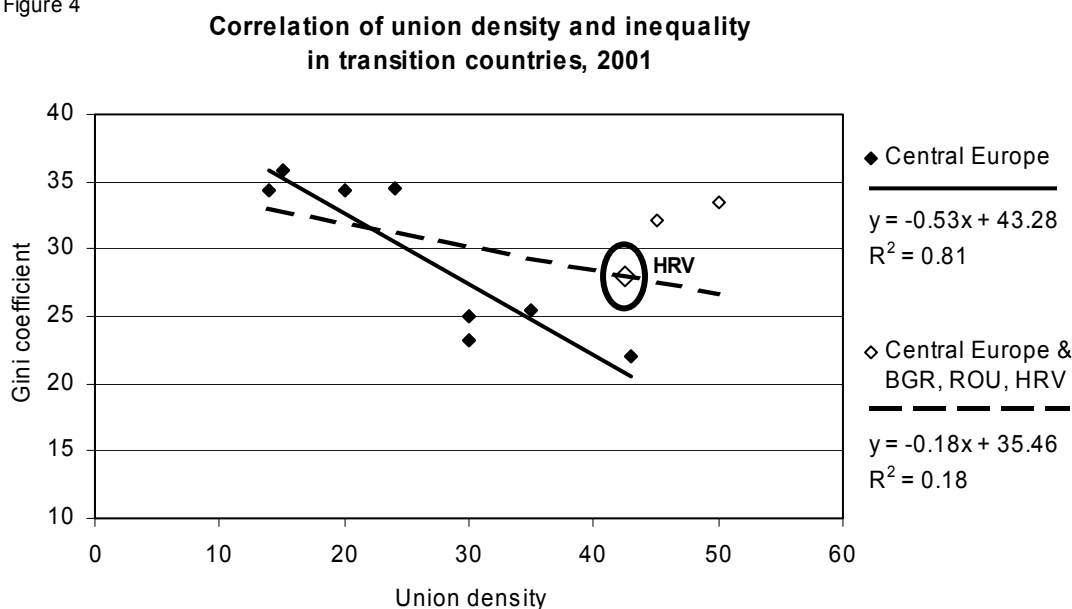
The institutional setting of wage bargaining changed dramatically in the countries of Central, East and Southeast Europe. In the socialist era, most workers in the region had been members of a union. In the transition period, union density and coverage rates of collective agreements declined substantially in most countries, although there are clear variations. In the CIS, official density rates are reported to have remained high, between 55% and 90% of the work force in the early 2000s – but these figures tend to be inflated (Crowley, 2005; World Bank, 2005a).

In the Central and Southeast European countries and in the Baltics, density rates as well as coverage rates, at 85% and 90% respectively in 1989, dropped to about 30% and 60%

on average. There are some outliers such as Lithuania, with a coverage rate of about 12%, and – on the other side of the spectrum – Slovenia, with more than 90%. In general the collective bargaining coverage in those Central and East European countries that are members of the EU is nowadays poor compared to Western Europe. Collective bargaining in the new member states is taking place mainly at the company level with only a minor role for industry or sector organizations. Extension mechanisms are reported to be weak, poorly enforced or non-existent (Lawrence and Ishikawa, 2005).

Since the impact of union activity as well as of collective agreements on inequality outcomes is not always clear, we look at that relationship as observed in the new EU member states as well as in Croatia, Bulgaria and Romania (see Figures 4 and 5); the coverage of additional Southeast European countries and the CIS was not possible due to lacking data availability.

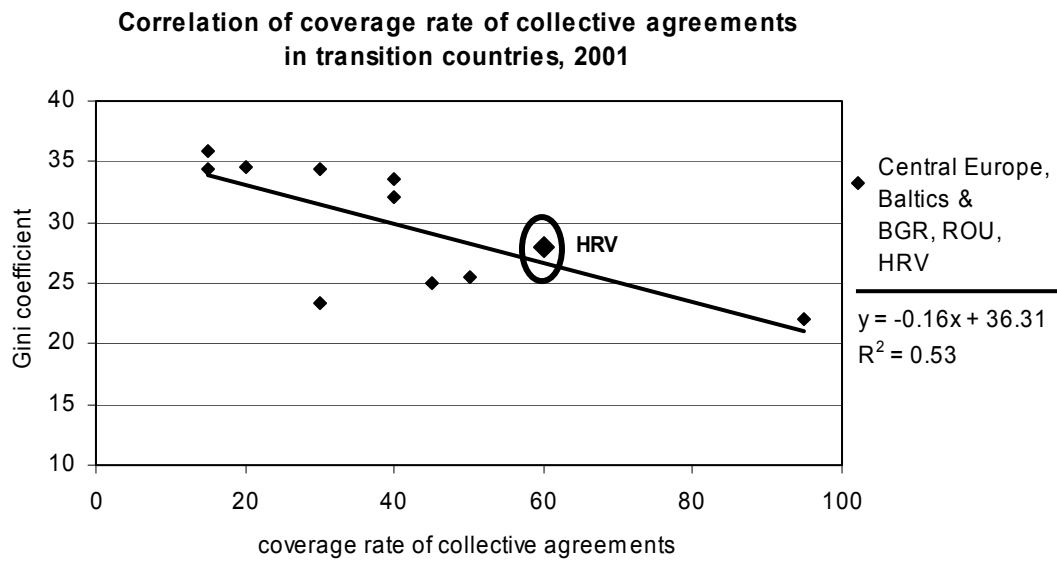
Figure 4



Sources: Schroeder (2004), UNU-WIDER: World Inequality Database Version 2.0c, w iiw calculations.

We find a strongly negative linear correlation between union density and inequality in the countries of the 2004 EU accession round, which is reduced when the sample is extended by Bulgaria, Romania and Croatia (see Figure 4). The correlation between coverage rates of collective agreements and inequality is as striking (see Figure 5). Although Slovenia is an outlier with an exceptionally high coverage rate, the removal of the country from the sample even aggravates the negative correlation and raises the fit of the regression line (R^2). With respect to Croatia, Figures 4 and 5 reveal that the high rates of coverage of collective agreements as well as union density are likely to be one important factor for the maintenance of a low level of inequality in the country.

Figure 5



Sources: Schroeder (2004), UNU-WIDER: World Inequality Database Version 2.0c, w iiv calculations.

2.6 Transfers and tax policy

Government taxes and transfers have considerably influenced the distribution of incomes in Central and East European countries throughout transition. In the Central European countries, social transfers have mitigated the rise in income inequality in general. Throughout the 1990s public social spending as a share of GDP remained relatively stable at levels comparable to Western European countries. At the end of the 1990s the ratio of public expenditure to GDP amounted to 13.5% for social protection, 5% for education and 5% for health (Klugman et al., 2002). In addition, better targeting of social transfers had a dampening effect on total inequality. For the early period of transition, Milanovic (1999) concludes that this was mostly due to the introduction of unemployment benefits, whereas in some countries the flattening of the pension schemes but also the possibility to leave the workforce via early retirement may have curbed the increase in inequality (World Bank, 2000a). Analysing data of the Luxembourg Income Study (LIS) database on Central European countries as well as Romania and Estonia, Cerami (2003a) states that poverty rates, measured as 60% of average income, would have doubled from about 15% to almost 30% on average in the absence of social transfers.

In the CIS the picture looks quite different. The fall in government revenues and the subsequent decline in expenditures to below 30% of GDP caused not only an absolute but also a relative reduction of social expenditure to GDP. At the end of the 1990s, in the CIS an average 7.5% of GDP was spent on social protection, about 4% on education and 3.5% on health, with much lower rates for most low-income CIS countries (Klugman et al., 2002). Thereafter, the impact of transfers to reduce increased income inequality in the post-Soviet

region was marginal; in some countries, particularly so in Russia, the rising concentration of pensions had even an aggravating effect on income dispersion (World Bank, 2000a). Cerami (2003b) reports that total social transfers reduced the inequality of incomes measured by the Gini index by only 14% in Russia in 2000.

When looking at the share of public transfers in total household income in 2005, it turns out that Croatia has a rather high share (31%), which is probably a major reason for the rather flat development of overall income inequality in this country. By comparison, countries such as the Czech Republic (24%), Estonia (21%), Slovakia (27%) and Slovenia (30%) had lower shares (see Tarki, 2008). Others, such as Hungary (35%) and Poland (36%), had higher shares of public transfers, more similar to traditional welfare states such as Sweden (37%).

Information on the influence of changing tax structures on income inequality is less easily available. At the beginning of the transition, the tax system in all Central and East European countries relied heavily on direct taxation, thus tax revenues declined along with the fall in output figures. A stabilization of revenues was obtained with the introduction of value added taxes throughout the region, which at the end of the 1990s made up a much larger share in total tax revenues of the Central European countries as compared to Western Europe (Leibrecht and Römisch, 2002). Although we know that indirect taxes have a regressive effect, this does not influence the dispersion of disposable income but only welfare levels. The effect of the value added tax on welfare differences among income groups, however, as far as we have seen, is not considered in the literature on income inequality.

As concerns direct taxation in the Central European countries and the Baltic countries as well as in Bulgaria, Romania and Croatia, there was a shift of the tax burden from enterprises towards individuals. Furthermore, many countries lowered the income tax rates of upper-income brackets, thereby reducing the redistributive effect of their tax systems. Estonia was the first country to introduce a flat income tax system, followed by Lithuania and Latvia, after 2000 also by Russia, Ukraine, the Slovak Republic, Georgia and Romania. Since the shift towards a flat tax system is most often combined with a broadening of the tax base and an increase in the basic allowance, it is not that clear in advance how it will change the post-tax distribution especially between low- and medium-income earners – but high-income earners are certainly better off. Also, the change in the distributional impact of the income tax can be of a small magnitude compared to that of an overall change in the revenue structure of the government (Keen et al., 2006). Considering the development of tax systems in Central and Eastern Europe in total, we may conclude that the redistributive effect has been reduced by the above-described modifications. This can also be seen when looking at the progression of the tax wedge in the Central European and Baltic countries. Social contributions and taxes resulted in a burden of

almost 40% for low-wage earners (50% of the average wage in manufacturing) in these countries; in the EU-15 the burden was 35% in 2003 and the distributional effect of total labour taxation substantially higher (World Bank, 2005b).

In Croatia the redistributive impact of the personal income tax has declined over the past decade. Urban (2006) compares the personal income tax system in 1997 with that in 2004. In 1997 there were two tax brackets, of 20% and 35% respectively. In 2004 this was doubled to four tax brackets, of 15%, 25%, 35% and 45% respectively. Although the new rate structure had some impact on the upper-income groups, in general the redistributive effect declined because of a lower average tax rate. Similarly to other countries, the largest share of progressivity can be attributed to allowances, while deductions have a negative contribution to progressivity. Moreover, Čok and Urban (2005) compared the redistributive difference of the Croatian and the Slovenian personal income tax systems. They found that in 2000, the Slovenian income tax reduced the pre-tax Gini coefficient by 11.4%. By contrast, the Croatian income tax system in 2001 reduced the pre-tax Gini coefficient by only 8.6%. This points to room for improvement of the Croatian personal income tax system.

2.7 Privatization and wealth inequality

The transition of the communist countries towards market economies implied a large-scale transfer of formerly publicly owned assets into private hands. The privatization of small-scale enterprises, which started first, was largely finished in the mid-1990s; in the second half of the decade it was generally medium- and large-scale enterprises that were privatized, coupled with the opening-up towards foreign direct investors.

Privatization was executed in different ways, ranging from voucher-based privatization to the sale of enterprises at market value to strategic (also foreign) investors. Voucher privatization was the primary method in the Czech Republic, Russia, Latvia, Lithuania and most of the low-income CIS countries and was to allow for a fast transfer of property rights and to guarantee a broadly based ownership of assets throughout the population, which was often achieved only at the beginning of transition. The sale to outsiders occurred predominantly in Hungary and Estonia, while in Poland, the Slovak Republic, Slovenia, Macedonia and Croatia as well as Ukraine and Uzbekistan the buyout to the management and employees was the primary method chosen (World Bank, 2000a).

In the literature no clear evidence has been found concerning possible correlations between the privatization methods chosen and the effects on inequality. What can be observed is a clear distinction between Central European and former Soviet Union countries. The former succeeded in building up quite well functioning institutions that shaped the interplay of market agents and did so in parallel with privatization. They ended

up with rather similar structures of ownership. In the latter countries the retreat of state influence led to a rapid consolidation of property rights with assets changing hands from workers to managers or outside owners after privatization. Furthermore, the so-called loans-for-shares programme in Russia transferred to banks the ownership of the mining sector below the market value. All in all this brought along a dramatic rise in wealth inequality, with the emergence of large business groups owned by a handful of entrepreneurs, known as oligarchs today (Guriev and Rachinsky, 2006).

In Croatia the privatization process started in an environment that may be called crony capitalism (see Bicanic and Franicevic, 2003). Nationalist plans to create a Croatian capitalist class led to the emergence of a group of so-called tycoons. This process is widely known as the so-called privatization robbery. In this sense the Croatian privatization process seems to be more similar to the privatization processes in the CIS and Balkan countries than in Central Europe. Although it is difficult to assess the outcome of the different privatization models on inequality, we make an attempt and present an ad-hoc indicator, looking at the ratio of the disposable income of the last decile to the disposable income of the first decile for a number of countries in the early 2000s, when the privatization process was largely completed. This should give us a rough picture of how much the economically most powerful part of society could profit from privatization. In the year 2001 we find some countries with relatively low values such as the Czech Republic (3.9), Slovenia (5.0) and Hungary (5.6). Interestingly, at that time a country like Serbia and Montenegro (6.2) reached a lower ratio than Croatia. This is probably due to the fact that Serbia and Montenegro were privatization latecomers. In Croatia, in 2001, the top decile earned 7.7 times more than the bottom decile. However, this is still lower than in some other transition countries such as Bulgaria (8.9) and Estonia (11.0).

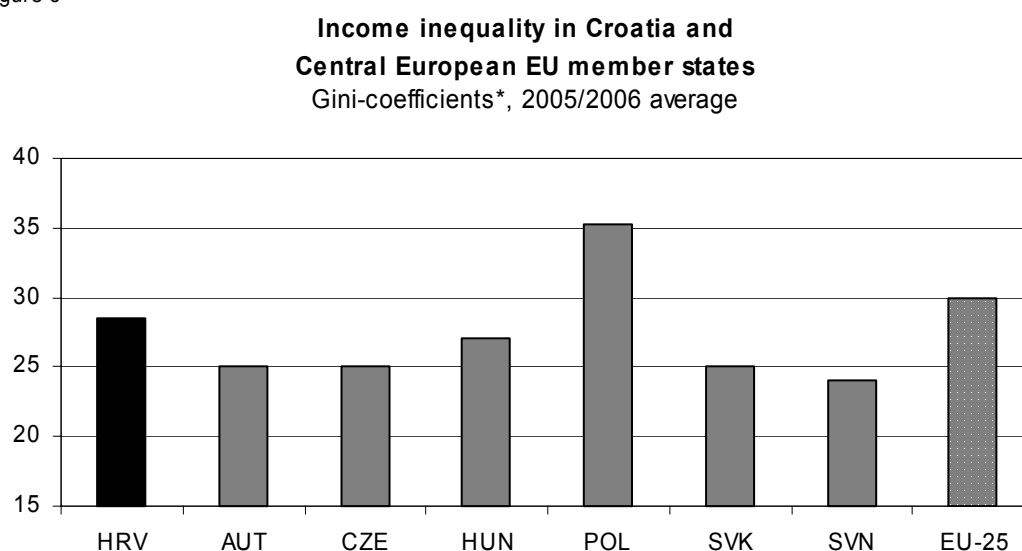
Apart from enterprises, housing and land changed into private hands as well in the course of transition. At the end of the 1990s the share of housing owned by private persons ranged from 60% in Russia to about 95% in Lithuania. The magnitude of private ownership in transition countries in general is much higher than in Western European countries. Most researchers argue that housing privatization appears to have had a progressive distributional impact even in CIS countries (World Bank, 2000a). Yemtsov (2007), however, points out that the redistributive effect of housing privatization has been overestimated in previous analyses. He argues that housing has been a common fringe benefit prior to transition, with those employees higher in the social hierarchy living in flats that realized higher market values after privatization, when real estate prices began to rise and differentiate. He concludes that the give-away of former state-owned real estate below market value entrenched or even aggravated the pre-transition divergence in housing wealth. Including imputed rents in the analysis would therefore worsen the picture of income inequality in the region.

However, we should point out that since no comprehensive data exist on household wealth holdings in general, it is not possible to assess in detail the magnitude of wealth inequalities resulting from the reallocation of property rights in the course of privatization as well as the resulting effects they had on income inequalities in the region.

3 Income inequality in Croatia

In this chapter we present the main features of income inequality in Croatia, based on a descriptive analysis and a decomposition analysis for the period 2001 to 2006. Research on income inequality in Croatia started only at the end of the 1990s. It was based on the 1998 Croatian Household Budget Survey providing reliable data for the first comprehensive studies on inequality and poverty published by the World Bank (World Bank, 2000a, 2000b, 2001). One of the very few analyses on pre-1998 developments of inequality in Croatia was performed by Nestić (2003). His results show that between 1983 and 1998 only a modest rise in income inequality measured by the Gini coefficient, from 27 to 29, can be observed in Croatia in the stage of early transition. Thereafter the development of inequality shows a remarkable stability, rising to only 30 in the years 2002/2003 and levelling off to 28.5 in the years 2005/2006 on average. A comparison with other countries reveals that the level of income inequality in Croatia is only slightly higher than in the neighbouring countries to the North, lower than the EU-25 average and well below the level of Poland (see Figure 6). In this context it has to be mentioned that in some countries such as in Croatia, the comparatively low levels of traditional inequality measures are typically correlated with much higher levels of perceived inequality. For more on this topic see Franičević (2004).

Figure 6



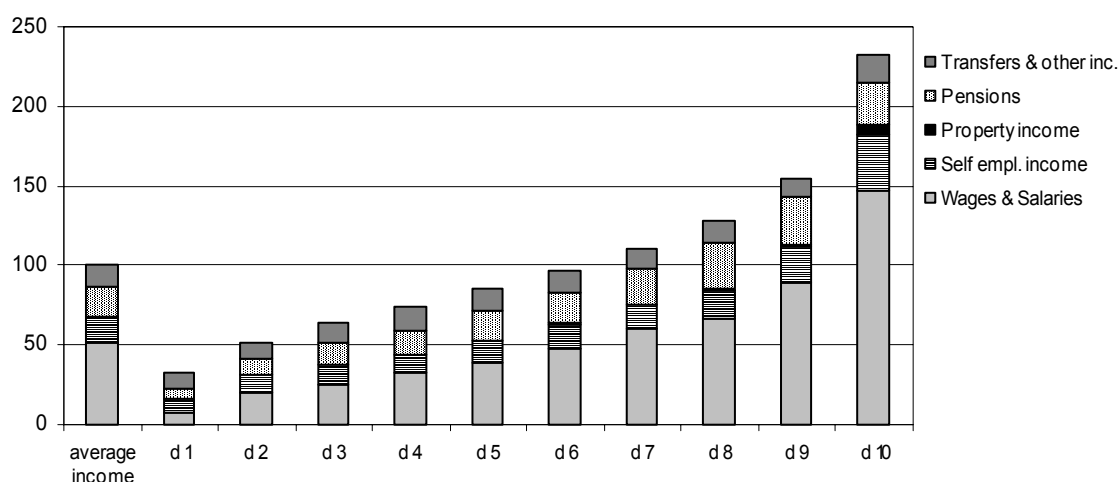
*Source: Eurostat, UNU WIDER.

3.1 Decomposition of income inequality in Croatia

A decomposition analysis of income inequality allows exploring the changes in and the structure of inequality in Croatia in detail. Changes in income inequality *per se* are driven by two main components: the change in the composition of total income and the change in the concentration of individual income sources. In the period 1988-1998 the rise in inequality is primarily due to the increase in the share of income from property and self-employment, while the more equally distributed wages and salaries slumped due to rising unemployment to only about 45% of total disposable income. The strong rise in pensions and other social transfers, accounting for almost 22% of total income in 1998, acted as a counterbalance in that phase. Moreover, a more equally distributed inflow of remittances curbed the rise in income dispersion (Nestić, 2002, 2003).

Figure 7.a

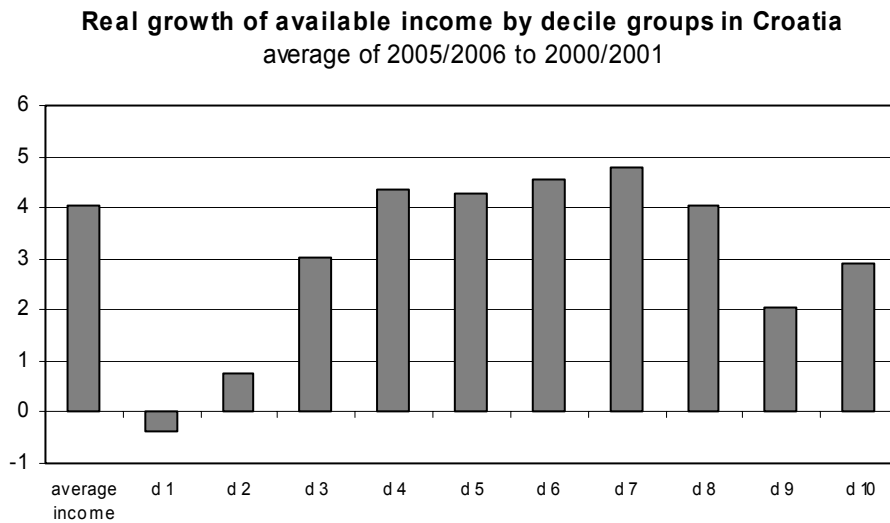
Ratio of incomes of decile groups to mean available income in Croatia
average of 2005/2006, differentiated by income components



Source: CBS-Croatia, w iiv calculations.

The development of the structure of available income per capita in the most recent years is presented in Figures 7.a to 8 and Table 3. Figure 7.a highlights the situation of relative incomes of the individual decile groups of the population. The group with the lowest earnings, for instance, receives an income of about 32% of the average available income per capita; the highest decile group earns about 2.3 times the average income in the country. In this context a peculiarity of the income definition of the Household Budget Survey (HBS) statistics should be mentioned. Incomes from the sale of property are not registered as available income in the HBS statistics from 2003 onwards. This category is exceptionally unequally distributed and an important source of revenue for the highest income groups only. If it were included in the calculation of available income, the income of the 10th decile would rise by about 10%, which would raise the Gini index of income per capita from 28 to about 30 in Croatia.

Figure 7.b



Source: CBS-Croatia, w iiv calculations.

Figure 7.b shows that the gains in available income in the period under observation were unevenly distributed among the decile groups of the population. The medium- and upper-income groups (3rd to 8th deciles) experienced a real growth of 3 to almost 5 percentage points, while the gains for the 9th and 10th decile groups were somewhat less pronounced. On the other hand, virtually no relative income gain could be achieved by the lowest two deciles, the first decile group even suffered a small decline of its real income. In conclusion, in the years 2000-2006, the medium- to upper-income groups benefited most from the favourable economic development in Croatia, which took place from 2000 onwards.

Figure 8



Source: CBS-Croatia, w iiv calculations.

Figure 8 presents the influence of public transfers on the welfare situation of households by decile group. One can see that the share of public pensions in the total available income does not show large variations (except for the 10th decile group, where it is only somewhat above 10%), which means that the pensions system is not designed to progressively reduce inequality in Croatia. In all of the EU-15 countries, state pensions have a much larger redistributive effect (see European Commission, 2006). By contrast, the share of other social transfers in per capita income depends on the income position of the recipient. Thus, overall public social expenditures do have a redistributive effect. Nevertheless, as shown by Figure 7.b above, for the lowest two deciles the impact of social transfers in the years 2000-2006 was too low to make up for losses in market incomes and to improve the welfare position of the low-income groups.

Table 3 presents the detailed results of the decomposition analysis by income components. In the period under observation, improvements on the labour market, in particular the fall in unemployment rates, subsequently resulted in stability of the share of income from paid employment, accounting for about 52% of total available income; this is a substantial rise compared to the 1990s when the share of wages and salaries was well below 50% (see Nestić, 2005).

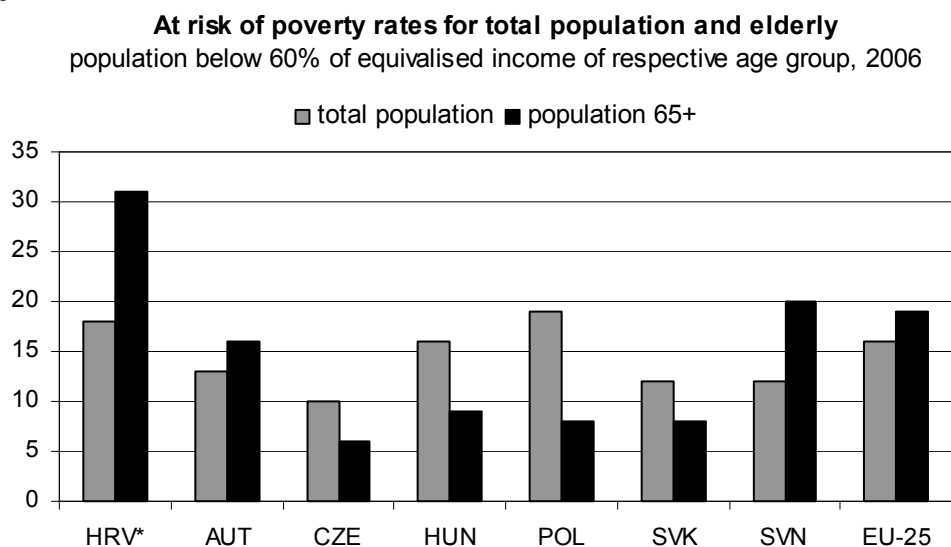
At the same time, however, the concentration of income from paid employment was rising, which means that the structure of wages and salaries became more unequal. One of the main reasons for the stability and even decline of general income inequality at the end of the period observed is the reduction of self-employment income as a share of total income and a less unequal distribution of this income component. The same effect derives from the development of permanent income from property (such as rents), which is by far most unequally distributed but declined in magnitude. In the years 2000-2006, public pensions remained quite stable as a share of total income in Croatia. However, the remarkable rise of the Gini coefficient of concentration of pensions points to the fact that increases in pensions seem to have been more favourable for higher-income recipients than for those at the bottom, the minimum pensioners. On the other hand, there appears to be an improvement in the targeting of the system of public transfers towards curbing inequality and poverty in general. The share of transfers and other sources of financing rose especially between 2000 and 2003; in addition, the coefficient of concentration of these sources of income fell considerably in the period under observation.

3.2 Regional aspects of inequality and old-age poverty risk

The analysis of inequality in Croatia demonstrates that the level of income dispersion is relatively low and stable, particularly when compared to other Southeast European countries. However, we should mention two important aspects of inequality that are sometimes neglected in the analysis of the overall situation. In several studies, the World

Bank but also other authors point out that, although overall inequality figures for Croatia are quite low, regional disparities turn out to be substantial (see e.g. World Bank, 2007). In particular, the regions of Central and Eastern Croatia and to a lesser extent the Adriatic South lag behind in respect of e.g. consumption levels and educational attainment levels. Furthermore, the levels of inequality within most counties in the first two regions exceed those for the rest of the country. Nestić and Vecchi (2006), investigating regional poverty in Croatia, find that regional disparities are persistent even after controlling for differences in education, labour market and other demographic factors. Looking into the structure of employment of the Central and Eastern Croatian regions, one can see not only a stronger significance of agricultural production (particularly in Eastern Croatia, which was also hit hard by damages during the war) but also a predominance of industrial sectors lagging behind in modernization and productivity development.

Figure 9



Note: *HRV: 2003. Source: EUROSTAT.

The second striking aspect is the situation of income dispersion in the group of people aged 65 years and above (see Figure 9). Although in Croatia public pension expenditures, at 11.5% of GDP (CBS-HR, 2007), are in line with the EU average (Eurostat, 2008), the risk of getting poor for old-aged people is much higher in Croatia than in Central European EU member countries and the EU-25 on average respectively. This seems to be the outcome of the failure of the Croatian pension system to redistribute income from the upper- to the lower-income groups as illustrated above in Figure 8. The fact that the at risk of poverty rate for the total population in Croatia is in line with that of Poland (having a much higher Gini coefficient for disposable income) yields a striking conclusion: While the welfare situation of medium-income earners is relatively good in Croatia, the relative position of the bottom income decile groups is less favourable when compared to other countries.

4 Econometric analysis

The following chapter is making use of an econometric model developed by Leitner and Holzner (2008). The model analyses the determinants of the level of income inequality in 18 transition economies over the period 1993 to 2003 in logs. By knowing which variables are positively correlated with inequality and which negatively, we can compare the actual raw data for Croatia with the averages of the whole sample and the CEE-5 countries' sub-sample respectively.

4.1 Determinants of inequality in transition

Leitner and Holzner (2008) have estimated several econometric models explaining the level of inequality in transition using various econometric techniques. Their preferred model is the following Generalized Least Squares (GLS) model. The authors started with as many variables as possible and applied a general to specific (GETS) approach. The dependent variable is the level of the Gini index of the respective country as provided by the WIDER 2.0b database. The sources of the explanatory variables are the EBRD, WDI (2007) and the TransMONEE 2007 database.

Table 4 (in the Annex) shows the results for the specification, where all the estimated coefficients are at least significant at the 10% significance level. In fact, out of the original set of 16 explanatory variables, ten remain significant at the 1% level and two at the 5% level. As expected, the infrastructure reform index proved to be positively correlated with the Gini coefficient: it is probably strongly related to labour shedding and a loss of egalitarian wage structures, as existed in former times in large public utility companies. Commercialization in the sensitive sectors of electricity, railways, roads, telecommunications, water and wastewater has led to an increase in inequality. Rather unexpectedly, we find the price liberalization indicator to be negatively correlated with inequality. This is probably related to the elimination of inefficient monopolies and a general opening of the transition economies to new business. It can be assumed that giving up price regulation has also reduced the possibilities for rent seeking of a few monopolists. Also – in contrast to what one might believe following the globalization critique – we find a negative coefficient of the trade and foreign exchange liberalization indicator. Thus it seems that globalization has left the average transition country with less inequality. This is most probably due to the relatively more labour-intensive structure of the transition economies' industry as compared to its western trading partners. Thus the opening of the markets led to more job creation.

Likewise, the coefficient of the share of exports of goods and services in GDP is negatively correlated with the Gini coefficient. Export-based growth seems to be a strong job creator. This could also be a proxy for small countries, which might tend to be more egalitarian for a

number of reasons. Employment in industry is negatively correlated with the Gini index. Our interpretation is that all three sub-sectors of the overall industry sector, namely: mining and quarrying, manufacturing, and electricity, gas and water supply, display a high level of trade union density and might thereby contribute to more equity. From the plain data we can observe that those countries that were able to preserve a large industry share in their economy during the transition, such as Slovenia, the Czech and the Slovak Republics, tend to have relatively low and stable levels of economic inequality. This is probably because also the wage structure within industry was preserved or at least changed only slowly. The coefficient of the change in productivity in the industry variable has a negative sign as well. This seems to suggest that workers in industry can profit from the improved economic development in the transition countries via wage increases. Another variable that behaved as expected is the unemployment rate. It stands for an increase in inequality. However, contrary to what might be expected, we find the employment rate to be positively correlated with inequality too. This may be explained by the fact that especially some of the rather unequal former Soviet Union countries did not provide a decent level of social benefits (e.g. unemployment benefits and early retirement pensions) for those persons of working age who fell victim to the tremendous labour shake-out at the beginning of transition. These have to accept any type of work to survive (including subsistence farming), which explains the high employment rates in some of those countries.

General government expenditures behaved as expected. They had a dampening effect on inequality in transition. High real interest rates were found to go together with high inequality. Low real interest rates are likely to favour non-financial investment thereby creating new job opportunities, while high real interest rates increase the incomes of capital owners. The coefficient of the inflation rate variable turns out to be positive. This might be explained by the fact that persons with high income have more bargaining power and possibilities to adapt to an increasing price level. On the other hand, low-income earners see the purchasing power of their wage bills and pensions dwindling. Finally, the share of non-performing loans in total loans is also a crisis indicator, representing those years in the second half of the 1990s when several transition economies passed through a banking crisis. It appears that the respective coefficient is negatively correlated with the Gini index. This supports our assumption that the financial crisis of the late 1990s hurt rather the rich capital owners.

4.2 Determinants of inequality in Croatia in comparison

In the following we compare the underlying determinant variables' data of Croatia with the data of two peer groups (the average transition economy and the CEE-5 sub-sample). Table 5 (in the Annex) shows in the first column again the coefficients of the preferred econometric specification. It is interesting to note that the introduction of a Croatia dummy variable hardly changes these results. Moreover, the dummy variable itself remains

insignificant. Thus, Croatian inequality is being explained by the chosen variables as well as the average transition country's.

In this respect it is worth looking at the main differences in the values of the raw data of the explanatory variables. In columns two and three the averages for the full transition countries' sample and for Croatia over the period 2002-2005 are shown. The next two columns present the absolute and the relative difference between the full sample average and Croatia. Finally, the last column presents the most recent data for Croatia for the year 2007 only. The main results of this comparison are the following.

Croatia has a level of inequality, as measured by the Gini coefficient, which is about 9% lower than in the average transition country – the major reasons for this being an above-average share of general government expenditures in GDP, and a low level of inflation, which are important factors in reducing inequality in transition. Over the whole transition period Croatia preserved a high level of general government expenditures while most of the other transition countries substantially reduced their spending. By the end of the 1990s and early 2000s, the level of Croatian government expenditures was even above 50% of GDP. Only in the most recent years have these expenditures dropped below 50%. With regard to inflation, Croatia experienced extreme inflation rates in the early 1990s. However, after the consolidation in the mid-1990s, Croatia's inflation rate remained one of the lowest throughout the region.

Also the trade and foreign exchange system is more liberalized and the level of employment in industry is higher as compared to the average transition economy. Both deviations have a positive impact on equality. Croatia started to liberalize foreign trade rather early and is now among the most open countries in transition. Compared to the average transition country Croatia's employment in industry share is high, however this share is stagnating for years on a level below 30%.

Furthermore, there is room for additional improvement. The positive change of productivity in industry should be higher. More industrial dynamism gives also more room for wage increases. Over the last years the change in productivity in Croatia was quite volatile but never negative. Only in the most recent year this is the case for the first time since 1993. Moreover, the public utility infrastructure reform was pushed more strongly as compared to the average transition country. Croatia introduced first reforms a bit earlier than others but has still not fully liberalized. Here, Croatia should try to keep employment in the electric power, railways, roads, telecommunications, water and wastewater sectors stable. Further privatizations should be made more carefully and only where necessary. Especially grid-bound infrastructure, i.e. natural monopolies, should be kept in state ownership for a number of reasons.

In most of the fields, where Croatia was an outlier in the period 2002-2005, more recent 2007 data show a change for the worse (i.e. increasing inequality, indicated by the downward pointing arrow). Improvement is to be found in those indicators where Croatia was more of a mainstream country, such as a strong reduction in unemployment. This is also one of the reasons, why more recently, the Croatian Gini coefficient slightly decreased to a value of 28.

When comparing Croatian data with data from the five Central and East European new EU member states the situation is somewhat different (see Table 6 in the Annex). Here Croatia exhibits an 11% higher Gini coefficient than the peer group. Even more it becomes evident, that the export sector is too small and unemployment too high. Especially, it appears that the employment level in industry is too small. Interestingly enough, in the early 1990s Croatia had a higher share of exports in goods and services in GDP than most of the Central and East European countries. This share dropped from above 50% to levels below 40% by the end of the 1990s. Since the beginning of the 2000s the export share is increasing again but only slightly. Too, Croatia experienced double digit unemployment rates until most recently when unemployment dropped to below 10%.

Also, compared to the CEE-5, the higher real interest rate in Croatia may have had a negative impact on the inequality level. Since the early 2000s, when most of the CEE-5's real interest rates dropped to levels of 5% and below, Croatia's real interest level remained above the others' between 6% and 8%. A reduction of the country's risk premium, e.g. by joining the EU, could improve the Croatian investment climate and in turn create, for instance, jobs in the industry sector, thereby reducing unemployment and inequality.

Finally, there are also a few factors where Croatia should keep its comparative advantage with regard to the CEE-5. Over the period 2002-2005, the productivity dynamics in industry was higher and the inflation rate was lower. However, in 2007 both indicators deteriorated. Nevertheless, a few others improved, such as the share of exports of goods and services in GDP, the unemployment rate and the real interest rate. These improvements are, among other things, responsible for the slight amelioration of the Gini coefficient more recently.

The following policy proposals can be extracted from the above analysis. Croatia should try to preserve its comparative advantage of a high share of government expenditures and a low level of inflation. Both are important elements to keep income inequality low. On its weak side, Croatia should make additional efforts, especially when it comes to its low share of exports of goods and services in GDP and the high share of unemployment. On the latter two Croatia's performance has been improving, on the former two it has worsened most recently.

5 Conclusions and policy recommendations

Over the entire transition period, Croatia had a rather low and remarkably stable level of income inequality. The Gini coefficient remained at levels between 28 and 30. This is slightly higher than the level in Slovenia, Hungary, the Czech Republic and Slovakia but still below that of the EU-25 as well as the overall transition countries average. This development in Croatia is somewhat surprising given the relatively strong initial output loss of about 40% in the early 1990s. It was not until 2005 that the 1989 GDP level was reached again. However, the share of the state is quite high in Croatia. This is probably a major reason for the rather stable development of income inequality in the country. In 2005, public transfers accounted for 31% of total household income. This share is closer to that of Sweden (37%) than, for instance, to that of the Czech Republic (24%). Nevertheless, there are countervailing forces at work as well. The Croatian privatization process started in an environment of so-called crony capitalism. This process may have left the extreme tails of the income distribution further apart than in other comparable countries.

However, decomposing income inequality from Croatian household budget surveys shows that, in the more prosperous years since the turn of the century, especially the central six deciles could increase their real disposable income. The top two deciles, and even more so the bottom two deciles, experienced lower rates of increase. In fact the available income of the first decile decreased slightly during the last years under investigation. The decomposition analysis also shows that, although the concentration of income from paid employment rose, the overall stability of income inequality is due to a reduction of self-employment income. Also, the targeting of the system of public transfers has improved in recent years. By contrast, the redistributive effect of the system of public pensions is rather low, especially when compared to EU countries.

In our econometric analysis we used a model identifying the determinants of inequality in transition countries. We find liberalization in the public utilities sector, high shares of unemployment and employment, and high levels of real interest rates as well as of inflation rates to be positively correlated with income inequality in transition. On the other hand, price liberalization, trade and foreign exchange liberalization and a high share of exports of goods and services in GDP are negatively correlated with inequality. This is also true for a high share of industrial employment in total employment, an increase of productivity in industry, a high share of general government expenditures and high rates of non-performing loans, respectively.

We then compared the underlying Croatian data with the average of the transition economies and that of the five Central European countries. Compared to the first group it becomes obvious that especially in the field of public utilities liberalization Croatia 'overperformed', while its development in labour productivity in industry was below

average. On the positive side, Croatia shows an above-average degree of liberalization of its trade and foreign exchange system, a higher share of employment in industry, higher general government expenditures and a lower inflation rate. These are the reasons why Croatia has a lower level of inequality than the average transition country. Still, Croatia has a higher level of income inequality than the average Central European country. When comparing the underlying Croatian data with this group of countries, we find the following: Croatia's performance is worse with respect to the export share and employment in industry, the unemployment rate as well as the real interest rate level. Only a higher productivity increase and a significantly lower level of inflation do stand out positively.

Policy recommendations to stabilize or even lower income inequality in Croatia should focus on a high share of government expenditures and a low level of inflation. This should provide for a reasonable redistribution of disposable income and a stable development of real income. The targeting of public expenditures, particularly concerning pensions, could be improved. At the same time Croatia should increase its share of exports of goods and services in GDP in order to gain employment in the more productive export industries. Efforts to further decrease the high share of unemployment should have positive effects on income distribution in Croatia.

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Annex of Tables

Table 1

Income inequality in transition countries

Gini indices (income based)

	1990	2005/2006
Czech Republic	19.7	25.0
Hungary	20.3	27.1
Poland	26.8	35.3
Slovak Republic	18.0	25.1
Slovenia	26.5	24.1
Central Europe	22.3	27.3
Estonia	24.0	35.6
Latvia	24.0	38.5
Lithuania	24.8	35.5
Baltic states	24.3	36.5
Bulgaria	23.7	32.4
Romania	22.7	36.3
Albania	.	31.1 ¹⁾
Bosnia and Herzegovina	32.9	35.8 ¹⁾
Croatia	27.6	28.5
Macedonia	34.9	39.3
Montenegro	.	.
Serbia	31.7	39.1 ²⁾
SEE	29.2	34.6
Armenia	26.9	41.7
Azerbaijan	34.5	37.3 ³⁾
Belarus	23.3	25.9
Georgia	29.1	46.6
Kazakhstan	29.7	32.2 ⁴⁾
Kyrgyz Republic	30.8	39.5
Moldova	26.7	40.8
Russia	25.9	40.0
Tajikistan	33.4	33.6 ¹⁾
Turkmenistan	30.8	.
Ukraine	24.0	31.7
Uzbekistan	31.5	39.7
CIS	28.6	37.2
Austria	22.7	25.5
Sweden	23.0	23.0
UK	33.5	33.0

Notes: 1) 2004, consumption based due to lack of data. - 2) estimate. - 3) 2001. - 4) 2003, consumption based. - 5) 1999.

Source: UNU-WIDER: World Inequality Database Version 2.0c, Nestić 2005.

Table 2

Labour markets in Central, East and Southeast Europe in transition

	Employment rates (LFS - population aged 15-59)			Unemployment rates (LFS concept)		
	1989	lowest level in transition	2006	1996	2000	2006
Czech Republic	86.9	70.4	72.2	3.9	8.8	7.1
Hungary	83.0	56.5	61.7	9.9	6.4	7.5
Poland	74.7	54.8	58.7	11.5	16.0	12.2
Slovakia	79.6	59.8	63.4	11.3	18.8	13.3
Slovenia	74.5	62.6	74.1	7.3	7.2	5.9
Central Europe⁷⁾	78.3		62.1			
Estonia	87.9	68.7	76.0	9.9	13.6	5.9
Latvia	85.0 ¹⁾	64.1	74.6	20.7	14.4	6.8
Lithuania	83.9	63.5	69.7	16.4	16.4	5.6
Baltics⁷⁾	85.1		72.5			
Bulgaria	81.5	54.7	63.8	14.1	16.9	8.9
Romania	77.4	65.0	66.1	6.7	7.1	7.3
Albania	75.0	47.4	47.4	12.4	16.8	7.5 ⁴⁾
Bosnia and Herzegovina	.	.	44.0 ²⁾	.	16.1 ⁵⁾	23.8 ²⁾
Croatia	.	54.6	58.7	10.0	17.0	10.5
Macedonia	.	39.9	42.8	31.9	32.2	36.0
Montenegro	.	.	45.3	.	.	29.6
Serbia	.	57.0	57.0	.	12.1	20.9
Western Balkan⁷⁾			51.7			
Belarus	84.2	67.0	67.6	4.0	2.1	1.2 ⁴⁾
Moldova	81.0	51.3	51.3		8.5	7.4
Russia	83.6	63.0	70.9	9.7	10.6	7.2
Ukraine	83.2	65.3	68.1	7.6	11.7	6.8
Armenia	76.1	50.8	50.8	9.3	11.7	7.5 ⁴⁾
Azerbaijan	68.8	68.8	69.8	.	12.8 ⁵⁾	.
Georgia	82.0	57.4	61.9	.	10.3	13.6
European CIS⁷⁾	82.9		69.3			
Kazakhstan	82.6	67.1	73.3 ²⁾	.	10.4 ⁵⁾	7.8
Kyrgyzstan	74.3	60.9	64.9	.	13.9 ⁶⁾	8.3
Tajikistan	72.5	52.1	52.7	.	9.3 ⁶⁾	7.4 ²⁾
Turkmenistan	77.9	72.0	67.1	.	7.7 ⁵⁾	.
Uzbekistan	72.0	63.7	63.7	0.3	0.4	0.2 ⁴⁾
Asian CIS⁷⁾	76.5		65.3			

Notes: 1) 1990. - 2) 2004. - 3) 2005. - 4) registered unemployment rate - national methodology. - 5) 2001. - 6) 1999. - 7) weighted averages.

Sources: TransMONEE database 2008, wiw database.

Table 3

Decomposition of inequality of available income in Croatia, 2000-2006

	2000	2001	2002	2003*	2004	2005	2006
Composition of available income (in % of total available income)							
Income from paid employment	52.3	48.4	51.5	51.7	53.0	51.5	52.3
Income from self-employment	18.0	18.6	18.5	17.0	16.8	16.4	15.3
Property income (w.o. property sales)	1.3	1.5	1.1	0.3	0.4	1.1	0.9
Pensions	18.6	22.6	19.6	18.0	17.0	17.7	19.3
Transfers and other sources of financing	9.7	8.9	9.3	13.0	12.7	13.3	12.2
<i>Total available income</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>
Gini coefficient of concentration of incomes by type							
Income from paid employment	0.36	0.36	0.37	0.37	0.40	0.39	0.37
Income from self-employment	0.31	0.24	0.28	0.24	0.23	0.22	0.23
Property income (w.o. property sales)	0.53	0.59	0.55	0.82	0.71	0.71	0.50
Pensions	0.11	0.17	0.21	0.23	0.22	0.23	0.24
Transfers and other sources of financing	0.19	0.26	0.19	0.13	0.13	0.12	0.07
<i>Total available income</i>	<i>0.29</i>	<i>0.29</i>	<i>0.31</i>	<i>0.30</i>	<i>0.30</i>	<i>0.30</i>	<i>0.28</i>
Contribution on income types to total income inequality (in % of Gini of total disposable income)							
Income from paid employment	64.7	60.3	62.0	65.2	68.9	66.6	67.3
Income from self-employment	19.3	15.5	17.0	13.9	12.5	12.1	12.1
Property income (w.o. property sales)	2.3	2.9	2.0	1.3	1.1	2.6	1.5
Pensions	7.3	13.4	13.2	14.1	12.0	13.4	16.3
Transfers and other sources of financing	6.3	7.9	5.8	5.5	5.4	5.3	2.9
<i>Total available income</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

Notes:

The decomposition analysis is based on decile data provided by the CBS, not HBS-microdata.

Therefore slight differences exist between the calculated Gini indices and those published by the CBS Croatia for total available income.

* The methodology of the Croatian Household budget survey was changed from 2003 onwards. In particular incomes from the sale of property are omitted from that time on in the category Transfers and other sources of financing. We adjusted the categories of available income for the break in the time series by deleting incomes from property sales also for the years 2000-2002.

Source: Central Bureau of Statistics - Croatia, wiiw calculations.

Table 4

GLS panel estimator of inequality

Independent variables	Coefficients	Standard errors	z-statistics	P-values
Price liberalization	-0.244	0.102	-2.400	0.016
Infrastructure reform	0.094	0.038	2.510	0.012
Trade and foreign exchange system	-0.230	0.085	-2.720	0.007
Exports of goods and services	-0.138	0.038	-3.620	0.000
Employment in industry	-0.179	0.040	-4.440	0.000
Change of productivity in industry	-0.220	0.058	-3.770	0.000
Unemployment	0.080	0.024	3.370	0.001
Employment	0.203	0.078	2.600	0.009
General government expenditures	-0.156	0.050	-3.150	0.002
Real interest rate	0.155	0.053	2.910	0.004
Inflation	0.152	0.040	3.740	0.000
Non-performing loans	-0.034	0.010	-3.310	0.001
Constant	4.380	0.714	6.130	0.000
Pseudo-R ²	0.613			
Number of observations	122			
Number countries	18			
Average observation per country	6.778			

Specification: Heteroskedasticity and panel-specific AR(1) autocorrelation assumed

Table 5

Results of GLS panel estimation of inequality and data description I

Comparison to the Full Sample Average for the period 2002-2005

	Coefficient estimate	Sample average	Croatia 2002-2005	Absolute difference	Difference in %	Croatia 2007
Gini		31.9	29.0	-2.9	-9.2	28.0 * ↗
Price liberalization	-0.24	4.0	4.0	0.0	-0.2	4.0
Infrastructure reform	0.09	2.4	2.9	0.5	23.1	3.0 ↘
Trade and foreign exchange system	-0.23	3.8	4.3	0.5	14.3	4.3 →
Exports of goods and services	-0.14	48.8	47.1	-1.7	-3.5	49.0
Employment in industry	-0.18	25.9	29.6	3.7	14.1	29.3 * ↘
Change of productivity in industry	-0.22	7.4	6.3	-1.0	-14.1	-1.0 * ↘
Unemployment	0.08	12.8	13.7	0.9	7.0	10.0
Employment	0.20	62.7	56.3	-6.4	-10.2	58.9 *
General government expenditures	-0.16	35.4	50.1	14.6	41.3	47.7 * ↘
Real interest rate	0.16	7.6	7.5	-0.1	-1.1	5.7
Inflation	0.15	6.9	2.7	-4.2	-60.3	2.9 ↘
Non-performing loans	-0.03	8.7	9.1	0.4	4.8	5.9 *

Note: * 2006. Arrows looking upward are indicating a development that is equality improving and vice versa.

Sources: Leitner and Holzner (2008), EBRD, WDI, UNICEF-TransMONEE, DZS, Eurostat, HNB, wiiw.

Table 6

Results of GLS panel estimation of inequality and data description II

Comparison to the CEE-5 Subsample Average for the period 2002-2005

	Coefficient estimate	Sample average	Croatia 2002-2005	Absolute difference	Difference in %	Croatia 2007
Gini		26.1	29.0	2.9	11.0	28.0 * ↗
Price liberalization	-0.24	4.3	4.0	-0.3	-6.2	4.0
Infrastructure reform	0.09	3.2	2.9	-0.3	-9.8	3.0
Trade and foreign exchange system	-0.23	4.3	4.3	0.0	0.0	4.3
Exports of goods and services	-0.14	59.8	47.1	-12.8	-21.3	49.0 ↗
Employment in industry	-0.18	35.6	29.6	-6.0	-16.9	29.3 * ↘
Change of productivity in industry	-0.22	4.7	6.3	1.6	33.6	-1.0 * ↘
Unemployment	0.08	11.4	13.7	2.4	20.7	10.0 ↗
Employment	0.20	63.9	56.3	-7.7	-12.0	58.9 *
General government expenditures	-0.16	45.0	50.1	5.0	11.1	47.7 *
Real interest rate	0.16	5.2	7.5	2.3	44.0	5.7 ↗
Inflation	0.15	4.5	2.7	-1.7	-38.8	2.9 ↘
Non-performing loans	-0.03	9.2	9.1	-0.1	-1.4	5.9 *

Note: * 2006. Arrows looking upward are indicating a development that is equality improving and vice versa.

Sources: Leitner and Holzner (2008), EBRD, WDI, UNICEF-TransMONEE, DZS, Eurostat, HNB, wiiw.

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