Transition and Income Distribution, Determinants of Income Inequality: 1990-2009 Panel Data Study

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ABSTRACT

The last decade of twentieth century has had a major importance for Eastern European and Central Asia countries. They embarked on transition process, transformation from central planned economy to free market economy. Although these countries differ due to their country characteristics and transition process, they all have common past: planned economy and performed the same transformation process.

The transition process was realized in different dimensions: socio-political and economic dimensions. The process considered the transformation from single-party political system to pluralist democracy. Economic transformation considered liberalization measures, such as liberalization of prices and trade, privatization, building of competitive environment and development of entrepreneurship. The transition period was significant with major macroeconomic and structural changes which has also affected the income inequality in these countries.

This study aims to identify the determinants of income inequality and assess the impact of liberalization measures on income distribution in transition countries for selected time period. The estimations exhibited that, price liberalization and small-scale privatization indices had significant effect on income inequality measures as Gini coefficient. While price liberalization affected income inequality positively, impact of small-scale privatization on income inequality was negative, e.g. this index has improved income distribution.

Moreover, it is shown that, macroeconomic variables such as inflation rate and unemployment rate had positive and highly significant effect on income inequality. Effect of GDP per capita growth rate on income inequality was found to be insignificant as a result of this study. The natural resources rents as a share of GDP is revealed to have a positive effect on income distribution.

Key words: transition period, income inequality, price liberalization, privatization.

ÖZ

Yirminci yüzyılın son on yılı Doğu Avrupa ve Orta Asya ülkeleri için büyük önem taşımaktadır. Bu zaman dilimi bu ülkeler için merkezi planlamaya dayalı sosyalist sistemden serbest piyasaya dayalı kapitalist sisteme geçiş sürecidir. Geçiş süreci her şeyden önce son derece büyük ve bir o kadar da karmaşık kurumsal bir dönüşümü ifade etmektedir. Bu düzen değişikliğine maruz kalan tüm ülkeler için "Geçiş Ekonomisi" (Transition Economies) tanımlaması kullanılmaktadır. Her ne kadar bu gruba dahil ülkelerin özellikleri ve yaşadıkları süreçler birbirinden çok farklı da olsa, ortak noktaları merkezi planlamadan serbest piyasa ekonomisine geçmek olduğundan tamamı "geçiş ekonomisi" kavramı içine dahil edilmişlerdir. Geçiş süreci siyasi alanda otoriter sistemden demokratik politik sisteme, ekonomik alanda ise kontrollü sistemden uzaklaşıp özel mülkiyete dayalı serbest piyasa ekonomisine doğru geçişi anlatmaktadır.

Ekonomik alandaki geçiş süreci fiyatların ve ticaretin liberalleşmesi, kamu mülkiyetinin özelleştirmelerle ortadan kaldırılması gibi önemli değişimlere ve reformlara şahitlik etmiştir. Ayrıca bu dönüşümün yarattığı ekonomik yapıdaki değişime ve gelir dağılımındaki değişimlere de şahitlik yapmış ve yapmaktadır.

Bu çalışma geçiş ekonomilerinde, seçilmiş dönem için, gelir dağılımında yaşanan değişimi ve bu değişimi belirleyen faktörleri araştırmaktadır. Çalışmada geçiş ülkelerinde gelir dağılımı literatüründe ön plana çıkan belirleyenler ve liberalleşme tedbirlerinin gelir dağılımı üzerindeki etkisi değerlendirilmiştir. Bulgular fiyat liberizasyonunun gelir dağılımını bozduğu, küçük ölçekli özelleştirme uygulamalarının ise gelir dağılımını iyileştirici bir etki yaptığını göstermektedir.

Diğer liberalizasyon tedbirlerinin gelir dağılımı üzerinde herhangi bir etkisi olmadığı tespit edilmiştir.

Kontrol değişkenlerinden enflasyon ve işsizliğin gelir dağılımını bozduğu, doğal kaynak rantlarının ise gelir dağılımını iyileştirici bir etki yaptığı görülmüştür. Kişi başına GSYİH artışının gelir dağılımı üzerinde etsiki olmadığı sonucuna ulaşılmıştır.

Anahtar kelimeler: geçiş ülkeleri, gelir dağılımı, gelir adaletsizliği, liberalleşme, geçiş süreci, özelleştirme.

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LIST OF SYMBOLS/ABBREVIATIONS

CEE – Central-Eastern Europe

CIS – Commonwealth of Independent States

EBRD – European Bank of Reconstruction and Development

FSU – Former Soviet Union

IMF – International Monetary Fund

SE – standard errors

SEE – Southern-European countries

WB – World Bank

Chapter 1

INTRODUCTION

1.1 Rationale of the Study

After the fall of Soviet Union and socialist bloc, the planned economy was replaced and all Soviet Union and socialist bloc countries emerged to free market economy. Individual economic initiatives and private property were stimulated by new economic policies. The implication of free market principles has lead to mass privatization of government corporations, such as production and service spheres and to establishment of institution which was greatly beneficial for global economic system and created the basis for future economic development. The eradication of trade and economic barriers and liberalization of prices and trade were also the measures to be taken during this period. This adaptation period to the new economic system was named as transition period, which considers the process as a change from central planning to free market economy (Kaldaru, 2001).

Individual entrepreneurship initiatives and privatization measures would create an atmosphere for competitive and free economic activity and contribute to economic growth and prosperity. The neo-classical theory suggests that, private ownership and free market economy contributes not only to economic efficiency and thus, higher economic growth, but also to the increase of overall welfare and living conditions in the long-run.

The time period and methods of implementation of transition measures differed among the countries, but the goal of the process was same: to liberalize the economy and establish free and competitive market environment. The speed of economic and political process challenged local reformers and also foreign economists and specialists, who did not expect such a turnover of this transition process. Some post-socialist countries chose so-called "shock therapy", which suggested rapid privatization, liberalization measures such as release of price and currency controls implemented in short period of time. Other countries advocated for "gradualist" transition, which considered slow and small-scale privatization, temporary control on prices and currency, protectionist approach to trade.

First years of transition was accompanied with deep economic recession and collapse of economic relations and infrastructure inherited from former system, also with currency crisis in Russia in 1997, which affected all transition countries. This transition period was associated with negative effects. The large scale privatization has led to wealth concentration in hands of few people, especially in former Soviet countries. Shutdown of many corporations and abandoned spheres of economic activity created an army of jobless and homeless people. Also, the countries were suffering from large foreign debts and trade deficits, which were undesired heritage of former system (Holscher, 2009). High unemployment and inflation, deterioration of public utilities such as free higher education, healthcare and social guarantees affected negatively the welfare and living standards of citizens in these countries. More than half of population was living under the poverty line in the middle 90's (Bezemer, 2006). Also the fact of corruption and lack of sophisticated legal system inhibited the effective construction of market reforms. These factors affected negatively the distribution of income; the income gap between rich and poor became

striking, which also has increased the indicators of not only absolute, also relative poverty. Although following years exhibited economic stabilization and high economic growth, the trade relations with other countries stimulated the economies and consumer markets and some of the countries succeeded to decrease the income inequality, the level of income inequality remained high in many of them and can even be compared with Latin-American countries, which were traditionally considered as countries with more uneven income distribution (Cornia, 2011).

Income inequality is one of the most important issues, which was investigated throughout the last decades by economists of development. Many researches were conducted to determine the effect of income distribution on economic performance of countries and especially on social life of people.

Changes in income inequality during transition process and relationship between economic growth and income inequality was also investigated and analyzed by several economists. But no consensus was obtained regarding the impact of transition process on income inequality. Overall, the effect was considered as negative and anti-poor. But poor efforts were made to determine the salient factor in changes of income distribution. Only few studies (Milanovic, 2008) were made to reveal the relationship between the individual transition indicators and income distribution.

1.2 Aim of the Study

The aim of study is to assess the impact of transition process and transition measures on income distribution in these post-socialist countries and to determine which of the liberalization measures contributed mostly to changes in income inequality in transition region.

This is the main contribution of this study, while separate impact of price liberalization, trade liberalization and privatization measures on income inequality were not assessed so far or conducted researches had several drawbacks due to econometric modeling.

1.3 Data and Methodology

The statistical data regarding the Gini index as a measure of income inequality was taken from World Bank *AllGinis* data set, which is prepared by leading economists and other variables such as EBRD index of small and large scale privatization, price liberalization and trade liberalization and forex indices are taken from the European Bank of Reconstruction and Development Database. Control variables GDP per capita growth, natural resources rents as a percentage of GDP data is taken from World Bank data, unemployment and inflation data were taken from IMF Statistical Yearbook archive. The dataset is unbalanced panel data due to missing observations.

The assessment will be conducted by using fixed effects model, which is panel data analysis method. This model allows estimating the relationships between dependant and independent variables by allowing the correlation between error term and explanatory variables. Moreover, this model captures the events or factors that affected income distribution in selected countries during the chosen period by including year dummy variables alongside with explanatory variables.

1.4 The Structure of the Study

The study is structured as follows: In Chapter 1, rationale and aim of the study, data and methodology and structure of study is expressed. The following chapter, Chapter 2 covers the macroeconomic background and changes in income distribution of transition countries after fall of socialist bloc. The next chapter, Chapter 3 includes

the income inequality definitions and current trends in world income inequality, review of main determinants of income inequality in general literature and in literature regarding transition countries. Chapter 4 describes the model to be estimated, data and methodology. Chapter 5 shows estimation results obtained and discussions of results. The last chapter, Chapter 6 presents conclusions and policy recommendations.

Chapter 2

MACROECONOMIC BACKGROUND

2.1 Definition and Indicators of Transition Economies

2.1.1 Meaning of Transition

Over the twenty years ago, Central and Eastern European, and former Soviet Union Countries have begun a major economic and political transformation accompanied by significant economic and structural reforms. This period was called a transition period and these countries later were considered as transition economies.

Transition economies are the economies which have transformed from central-planned economy to market oriented economy and the process of transition required substantial economic and structural reforms in countries' economies. These reforms were conceptualized and prepared not only by experts of transforming countries, but also by international organizations, such as International Monetary Fund, European Bank of Reconstruction and Development and World Bank, also by different financial organizations of developed countries. For example, European Bank of Reconstruction and Development were established in April 1991 to meet the challenges of transition period, prepare recommendations and assess the performance of countries (EBRD, 1994).

Implication of transition measures were mainly considered in two methods. First of them, shock-therapy method implied the rapid liberalization and privatization,

political and economic deregulation, establishment of private property and decreasing the impact of state on economic and social sectors. This method was sound with so-called Washington Consensus stabilization concept, which implied the fiscal discipline, reordering public expenditure priorities (switching expenditures from non-merit utilities such as free education and healthcare to strongly targeted pro-poor directions) and liberalization measures (Williamson, 2004). Price stabilization and government expenditures cuts, which are suggested to mitigate fiscal deficits, were priority issues. Several countries preferred this method and embarked on transition process with rapid transformations.

On the other hand, other method introduces evolutionary-institutional approach that linked liberalization process and monetary adjustments with real output, employment and income distribution problem. This concept advocated for gradual market reforms and protection of heritage from former system. Output stabilization and reduction of unemployment considered as important dimensions of macroeconomic policy. Gradualist reforms were also preferred by transition countries and taken as a basis for market reforms (Holscher, 2009).

Regardless of method, the aim of the chosen transformation methods was elimination of remnants of former system.

2.1.2 Drives of Transition Period

Former economic system, e.g. planned economy was criticized by many western and local dissident economists, politicians and public figures due to both political reasons such as violations of human rights and thought, and economic reasons. So, the fall of the Iron Curtain, especially Union of Soviet Socialistic Republics (USSR) was caused by both political and economic reasons. Main features of former system were

public (in practice, state) ownership on means of production and absence of private property. Wages were the main source of income, while non-wage private incomes were not encouraged.

The achievements of socialist model was considerable, while it managed to achieve the high industrial and social development in the countries where the October Revolution[1] took place and which have had semi-capitalist economic systems with elements of feudalism. Among the achievements of Soviet Union and socialist bloc countries were high rates of economic growth and attainment of industrialization, provision of free education, basic healthcare and housing, full employment. These countries succeeded to avoid several economic crises and achieved low rates of income inequality, developed social welfare system which allowed the access to basic goods and services for lower social stratums.

Alongside with above mentioned achievements, system was subject to several drawbacks. Although, high economic growth was achieved in these countries in 1950's and 1960's within the planned economy, by the end of 1980's economic stagnation was quite apparent and continuous. The production of consumer goods were inefficient and of relatively low quality (especially, clothing and leather sector). The excess demand problem as a result of supply shortage was solved partially by artificially controlling for prices. So the energy, housing, public transport were relatively cheap, while consumer goods were expensive. The labour force and raw materials were used in excess instead of efficient use of inputs due to a little

[1] October Revolution, also known as Great October Socialist Revolution was an overthrow of Russian Provisional Government and gave power to the local soviets dominated by Bolsheviks. It was held on 25th of October in Petrograd (now known as Saint Petersburg) and leaded by Bolshevik fraction of Russian Communist Party.

incentive of firms and the will to achieve the plan at any expense. The presence of corruption in later years and massive bureaucratic apparatus has led to serious sectoral distortions. The preference was given to heavy and military industry neglecting the service sector which was severely repressed (Harvie, 1998).

These drawbacks also hindered implication of transition measures. In order to be able to implement transition measures economies in transition necessitated the radical economic and political transformation.

2.1.3 Political and Social Transition

Political and social changes were begun with abolishment of single-party system and refusal from communist ideology. All countries have accepted democracy as a principle of state rule, which implied freedom of speech and thought, elimination of obstacles for creating different non-government organizations and societies which comply with democratic ideas and do not restrict the freedom of any social and ethnic groups. After fall of Soviet Union the countries started to build-up democratic pluralist political system and citizens obtained more liberties.

As a result of the fall of socialist bloc, several new countries emerged in the place of old countries. Some of them have not experienced independency for a last two centuries (For example: Macedonia, Moldova and Slovenia), another ones have been independent for short period, 1 or 2 years, between the fall of Russian Empire and establishment of socialist rule in these countries (Azerbaijan, Armenia, Georgia). Other countries, such as Russia, have been independent for most of their existence and with the fall of the Iron Curtain, have lost some part of their lands. Overall, 25 new countries emerged in world political arena and number of countries in the world

has increased about 15% (Milanovic, 1998). Below is the list of newly emerged countries. Figure 1 illustrates the geographical location of those countries:

- Central-eastern Europe (CEE): Poland, Czech Republic, Slovak Republic, Slovenia, Hungary and Croatia;
- Former Soviet Republics (FSU) which included:
  - Baltic States: Latvia, Lithuania, Estonia;
  - Slavic Republics: Russia, Ukraine, Moldova, Belarus,
  - Caucasus and Middle Asia: Azerbaijan, Georgia, Armenia, Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan and Tajikistan.
- Southern-eastern Europe (SEE): Albania, Bosnia and Herzegovina, Bulgaria, Romania, Serbia and Montenegro (separated from Serbia with referendum held in May 21st, 2006), and Slovenia (EBRD, 2011).

2.1.4 Economic Transition

Economic dimension of transition included following ingredients:

- *Liberalization*: eradication of price control that allows the prices to be determined in the free markets. It is also included the liberalization of trade and lifting the barriers that hinder the connections with world markets and synchronization with world prices.
- *Macroeconomic stabilization*: primarily, requiring transformation of policies and implementation of reforms for budget discipline, stricter monetary and fiscal policies, and progress towards sustainable balance of payments. For transition economies, this also meant the process through which the inflation was kept under control and minimized over time.

- *Restructuring and privatization* defined as building up a viable financial sector and reforming (privatizing) public enterprises, to enable them to produce competitive products and services.
- *Legal and institutional reforms*: this ingredient defines the role and liabilities of government during the transition period, e.g. to create a sustainable environment for entrepreneurship and fair competition through legislation (IMF, 1999).

With the beginning of transition process, the countries started to apply the main principles of free market economy such as free entrepreneurship, private ownership and fair competition, and trade and price liberalization. The application of these principles would lead to a more efficient allocation of resources and achieve higher economic development and prosperity.

The economic transition process is considered to be over for ten Eastern European countries (Czech Republic, Poland, Hungary, Slovakia, Slovenia, Estonia, Latvia, Lithuania, Romania and Bulgaria), according to United Nations classification (UN, 2012). Czech Republic was the fastest transforming country, which completed its transition in 2004 (EBRD, 2006). At the same year it was accepted to the European Union alongside with other 7 Eastern European countries other than Romania and Bulgaria. These two countries were also accepted to European Union later, in 2007.

Nowadays, all countries have fully integrated to world economic system and participate in economic and financial decision-making through a membership in several international organizations: International Monetary Fund, World Trade Organization, etc. Also, indicators of their macroeconomic and transition performance are reported in World Bank and European Bank of Reconstruction and

Development, which annually prepares “Transition Reports”, an analysis and digest of annual performance of transition countries.

On the other side, this process of political and social transformation was notable with ethnic conflicts. The Nagorno-Karabakh conflict between Azerbaijan and Armenia, the civil war in Chechnya and Russia, an ethnic conflict in former Yugoslavia, the genocide of Bosnian people in Serbia, and Northern Ossetia and Abkhazia conflict in Georgia were the most tragic ones of such conflicts. With no doubt, these events affected the economic performance and political relations of these countries, destroyed the lives of thousands of people and led to the displacement of another ten thousands of people.

Figure 1. Transition Countries (Newly Emerged Countries)

2.2 Process of Economic Transition. Macroeconomic Changes

2.2.1 Changes in Economic Growth Performance

The transition had an impact on economic growth and GDP of these countries in greater sense. First years of transition were associated with abrupt decrease in output level of all countries. While the GDP growth rates were 1.9% and 2.4% in Eastern Europe and former USSR respectively in 1987, these numbers converged to negative digits of -8.2% and -2.4% respectively in 1990 and -14.7% and -6.5% in 1991. In the following years (1994-1996), the Eastern Europe countries were able to achieve positive growth rate, but the drop of output in former USSR has continued and became even greater negative numbers (Table 1).

Milanovic (1998) compares the economic recession in the beginning of transition period with the economic conditions during the Great Depression which the most developed countries of the world experienced during 1929-1933 years. He found out that the recession in former planned economy countries was deeper and long-lasting than the Great Depression. This also had a significant effect on population living standards and economic performance of these countries.

During the Great Depression the countries that were affected by Depression more, USA and Germany managed to achieve positive growth and recovery after 4-5 years of the beginning of recession. However, Russia and some other countries (Belarus, Kazakhstan, Kyrgyz Republic, Tajikistan and Ukraine) continued to exhibit negative growth even in 1995, after 6 years of the beginning of implementation of liberalization measures (Table 1).

It is argued that, this major decline in output can be caused by the fact that many factories and even economic sectors were liquidated or stopped its activity, due its ineffective production and mitigation of trade barriers (Ivaschenko, 2003; Yudaeva, 2002). For example, the factories in heavy industry and machinery manufacturing were almost abandoned in most of the countries (Caucasus and Middle Asia countries). While the process of production of the industrial product was not the result of a sector in one country, but the collective work of several countries, the liquidation and selling of a factory in certain countries would lead to the elimination of that production sector also in other countries. The reason was that they could not obtain the spare parts for completion of a production. So, large volume of deindustrialization has led to rapid decline in growth rates in both Eastern Europe, and former Soviet Union countries.

Though depression has lasted for a quite long time, the countries were managed to recover from it and exhibit sustainable economic growth. Many transition countries achieved the output level of pre-transition years soon or later. Czech Republic, Poland, Slovak Republic, Slovenia and Hungary and Albania in SEE were the countries which recovered relatively fast and achieved the 1989 GDP level in the beginning of 2000's. Now, their output is slightly above of the EU average.

Other CEE countries such as Romania and Bulgaria, Baltic States (Latvia, Lithuania and Estonia) and some SEE countries (Croatia and FYR Macedonia), also Russia and Belarus could recover the 1989 output level only in the middle of 2000's, but their output level is below the EU average.

In Caucasus and Middle East, Azerbaijan, Turkmenistan and Uzbekistan's GDP performance is striking and they were able to achieve significantly higher GDP level

than EU average, probably due to large amounts of oil and gas export, whereas GDP level of Armenia and Kazakhstan is almost similar to EU average.

Ukraine, Moldova, Bosnia and Herzegovina and Serbia, Georgia and Tajikistan could not achieve the pre-transition level so far and their output levels are well below the EU average.

The Economic Crisis affected negatively the economic growth in transition countries in 2009. Almost all countries in Central Eastern Europe have exhibited negative growth in GDP per capita with highest values in Estonia (-14,27%), Latvia (-7.55%), Lithuania (-14,17%), Slovenia (8,84%) and Ukraine (14,42%). Poland was not affected by financial crisis and continued to perform high levels of growth in GDP per capita in 2009-2010 years. To 2011, all countries could achieve positive economic growth per capita (Table 1).

Table 1. GDP Growth Rates for Selected Transition Countries

Country Name	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Central-Eastern Europe																	
Croatia	n.a.	n.a.	n.a.	6.5	-1.0	3.8	3.7	4.9	5.4	4.1	4.3	4.9	5.1	2.1	-6.9	-1.4	0.0
Czech Republic	-11.6	0.1	6.2	-0.9	1.7	4.2	3.1	2.1	3.8	4.7	6.8	7.0	5.7	3.1	-4.5	2.5	1.9
Hungary	-11.9	-0.6	1.5	3.1	3.2	4.2	3.7	4.5	3.9	4.8	4.0	3.9	0.1	0.9	-6.8	1.3	1.6
Poland	-7.0	3.7	7.0	7.1	4.5	4.3	1.2	1.4	3.9	5.3	3.6	6.2	6.8	5.1	1.6	4.1	4.5
Slovak Republic	-14.6	-3.7	5.8	4.4	0.0	1.4	3.5	4.6	4.8	5.1	6.7	8.3	10.5	5.8	-4.9	4.4	3.2
Slovenia	-8.9	2.8	3.6	5.0	5.3	4.3	2.9	3.8	2.9	4.4	4.0	5.8	6.9	3.6	-8.0	1.3	0.7
Former Soviet Union																	
Armenia	-11.7	-8.8	6.9	3.3	3.3	5.9	9.6	13.2	14.0	10.5	13.9	13.2	13.7	6.9	-14.1	2.1	4.7
Belarus	-1.2	-7.6	-10.4	11.4	3.4	5.8	4.7	5.0	7.0	11.4	9.4	10.0	8.6	10.2	0.2	7.7	5.5
Estonia	n.a.	n.a.	n.a.	11.7	-0.3	9.7	6.3	6.6	7.8	6.3	8.9	10.1	7.5	-4.2	-14.1	3.3	8.3
Georgia	-21.1	-29.3	2.6	10.5	2.9	1.8	4.8	5.5	11.1	5.9	9.6	9.4	12.3	2.3	-3.8	6.3	7.0
Kazakhstan	-11.0	-9.2	-8.2	1.7	2.7	9.8	13.5	9.8	9.3	9.6	9.7	10.7	8.9	3.3	1.2	7.4	7.5
Kyrgyz Republic	-7.9	-15.5	-5.4	9.9	3.7	5.4	5.3	0.0	7.0	7.0	-0.2	3.1	8.5	8.4	2.9	-0.5	6.0
Latvia	-12.6	-5.0	-0.9	8.3	4.7	6.9	8.0	6.5	7.2	8.7	10.6	12.2	10.0	-4.2	-18.0	-1.6	5.4
Lithuania	-5.7	-16.2	3.3	7.5	-1.1	3.3	6.7	6.9	10.2	7.4	7.8	7.8	9.8	2.9	-14.7	1.5	6.0
Moldova	-16.0	-1.2	-1.4	1.6	-3.4	2.1	6.1	7.8	6.6	7.4	7.5	4.8	3.1	7.8	-6.0	9.4	18.6
Russian Federation	-5	-8.7	-4.1	1.4	6.4	10	5.1	4.7	7.3	7.2	6.4	8.2	8.5	5.2	-7.8	4.5	4.3
Ukraine	-8.4	-14.2	-12.2	-3.0	-0.2	5.9	9.2	5.2	9.4	12.1	2.7	7.3	7.9	2.3	-14.8	4.2	5.1
Uzbekistan	-0.5	-2.3	-0.9	5.2	4.3	3.8	4.2	4	4.2	7.7	7	7.3	9.5	9	8.1	8.5	8.3

Table 1. GDP Growth Rates for Selected Transition Countries *Continued*

Country Name	1991	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Southern-Eastern Europe																	
Albania	-29.6	9.6	13.3	-10.2	10.1	7.3	7	2.9	5.7	5.9	5.5	5	5.9	7.7	3.3	3.5	3
Bulgaria	-8.4	-1.5	2.9	-1.6	2	5.7	4.2	4.7	5.5	6.7	6.4	6.5	6.4	6.2	-5.5	0.4	1.8
FYR Macedonia	-6.2	-7.5	-1.1	1.4	4.3	4.5	-4.5	0.9	2.8	4.6	4.4	5	6.1	5	-0.9	2.9	2.8
Romania	-12.9	1.5	7.2	-6.1	-1.2	2.1	5.7	5.1	5.2	8.4	4.2	7.9	6	7.9	-6.6	-0.9	2.3
Serbia	-9.8	-30.5	6.1	10.1	-11.2	5.3	5.3	4.1	2.7	9.3	5.4	3.6	5.4	3.8	-3.5	1	1.6

Source: World Development Indicators, World bank

2.2.2 Changes in Income Levels

Income levels in transition economies compared to developed and emerging countries was much lower in the first years of transition period (Kaldaru, 2001). Table 2 reveals the income per capita levels and its convergence of selected transition countries during transition period.

According to Table 2, it is clear that; general tendency shows the continuing increase in income level during this period. Exceptions are countries such as Russia, Ukraine, Kazakhstan, Kyrgyz Republic and Bulgaria, which experienced decline in GNI per capita income between 1995-1997 years. It can be assumed that this decline was a result of Russian crisis which affected these countries in the end of 1995 years and was at peak level in 1997. Crisis in Russia affected not only the Federation itself, but also the countries which were closely connected with Russia.

As it is described in table, Eastern European countries such as Estonia, Poland, Hungary, Estonia, Slovak Republic and Slovenia have exhibited high levels of per capita income in comparison with other countries and were included to high-income country groups by World Bank (WB) and United Nations (UN). From the beginning of 2000's, which can be considered as the middle of transition period, to 2011 year, these countries have converged from upper-middle per capita income to high per capita income countries. The lowest performers are Kyrgyz Republic and Uzbekistan which constitutes only 20-25% of Slovenia's per capita income, the country with highest per capita income.

Table 2. GNI per capita (2005 US $) for Selected Transition countries

Country Name	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Central-Eastern Europe																
Croatia	n.a.	6526	7546	7471	7992	8264	8685	8995	9525	9823	10285	10859	10985	10164	10078	10402
Czech Republic	8682	9412	9686	9773	10186	10421	10572	10993	11351	12170	12869	13238	13890	12907	13084	13485
Hungary	7098	7285	7389	7952	8377	8696	9094	9528	9945	10347	10774	10622	10806	10297	10411	10469
Poland	4448	5122	5861	6441	6765	6892	6988	7218	7471	7784	8224	8695	9279	9280	9623	9928
Slovak Republic	6764	7650	8484	8775	8907	9285	9676	9668	10253	11063	11948	13187	13445	12903	13386	14426
Slovenia	11076	12257	13290	14508	15043	15484	15933	16353	16996	17703	18616	19594	20128	18486	18751	18864
Former Soviet Union																
Armenia	511	664	793	865	920	1016	1163	1327	1465	1669	1910	2175	2357	1986	2067	2199
Belarus	1913	1514	1743	1974	2094	2209	2341	2532	2840	3127	3447	3737	4111	4084	4414	4604
Estonia	n.a.	4958	5877	6440	6970	7375	7881	8424	9018	9937	10788	11417	11154	9786	9863	10739
Georgia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1484	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Kazakhstan	2342	1929	2020	2054	2176	2519	2799	3020	3248	3417	3630	3867	3774	3975	4092	4159
Kyrgyz Republic	452	333	375	378	392	417	415	441	460	459	477	514	542	548	525	542
Latvia	3178	3321	3829	4195	4550	4978	5340	5721	6136	6885	7638	8412	8284	7434	6986	7886
Lithuania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	7524	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Moldova	943	637	643	580	591	660	714	804	871	931	979	991	1072	968	1090	1289
Russian Federation	4169	3511	3411	3403	3782	4037	4227	4505	4892	5204	4824	6148	6486	5934	6164	6381
Ukraine	1818	1256	1120	1099	1172	1312	1398	1547	1746	1808	1943	2110	2185	1846	1944	2030
Uzbekistan	n.a.	398	407	431	439	451	464	480	515	546	575	623	668	704	752	793

Table 2. GNI per capita (2005 US $) for Selected Transition countries *Continued*

Country Name	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Southern-Eastern Europe																
Albania	1165	1492	1481	1838	2002	2171	2235	2384	2530	2672	2847	3038	3224	3244	3361	3471
Bulgaria	2423	2516	2274	2513	2639	2878	3132	3308	3533	3747	3891	3934	4328	4175	4232	4341
FYR Macedonia	2436	2410	2430	2552	2645	2539	2539	2602	2732	2812	2989	3028	3297	3274	3351	3431
Romania	3134	3499	3430	3229	3314	3555	3780	3980	4286	4530	4824	5244	5704	5333	5281	5406
Serbia	n.a.	n.a.	n.a.	2449	2586	2705	2829	2903	3177	3348	3477	3653	3782	3702	3733	3786

Source: World Development Indicators, World Bank.

Table 3 represents the country classification of transition economies, which is prepared by author according to UN classification.

Table 3. Country Classification According to per capita Income Groups

Low income	Lower middle income	Upper-middle income	High income
Kyrgyz Republic Uzbekistan	Albania Armenia Georgia Moldova Ukraine Uzbekistan	Azerbaijan Belarus Bosnia and Herzegovina Kazakhstan Latvia Lithuania Romania Russian Federation Serbia Turkmenistan FYR Macedonia	Croatia Czech Republic Estonia Hungary Poland Slovak Republic Slovenia

Source: United Nations, World Economic Situation and Prospect, 2012. Statistical Annex.

2.2.3 Changes in Economic Structure

Economic structure of countries has also changed during transition period. The striking changes were the apparent deindustrialization of countries (Ivaschenko, 2002). According to World Bank data on selected countries, industry value added as a percentage of GDP has been declining during this period (Table 4). Planned economy countries had quite developed industrial sector which has formed a substantial part of GDP. While this sector have contributed to 35-60% of GDP in 1990 in most of the countries, in 2010 industry value added have constituted only 21-33% of GDP for Central Eastern Europe and Baltic countries and these figures were even lower for some Southern-Eastern Europe and Former Soviet Union countries: 13-27%. Exceptions exist in all country groups, such that, Armenia, Belarus, Kazakhstan, Romania and Russia still have a prominent industrial sector and greatly contribute to GDP; around 39-44%.

Another striking tendency is the declining GDP share of agriculture value added and increasing share of services value added in GDP. Share of agriculture value added was around 5-35% with lowest share in Slovenia (5,6%) and highest share of Albania (35,9%) in 1990. In 2010, agriculture value added has constituted only 3-19% of GDP with highest value again in Albania.

On the other hand, service sector share have increased in all countries, reaching 40-75% of GDP. Especially Central European countries, such as Croatia, Czech Republic, Hungary, and Poland have continued on the existing tendency and increased their service sector share, whereas Albania, Latvia, Lithuania, Moldova, Russia and Ukraine have radically changed their composition of GDP and services share of this countries have increased from 22-35% to 53-75% on average.

These changes were conditioned by several structural transformations in these countries. Firstly, deterioration of industrial infrastructure and equipment and lack of further upgrade incentives have shrunk the industry sector and caused a substantial decrease in industrial output. Also, import of industrial products from developed countries with highly-efficient industry sector has decreased the demand for local production. Local producers were uncompetitive due to old production facilities and technology and remained out of market (Yudaeva, 2002).

Liquidation of kolkhoz system, which implied the collective ownership and cultivation of land have affected agriculture sector. The lands were mostly privatized in both large shares and with small shares by country men who used to work on these lands, but first type had overwhelming effect. Still, old equipment and cultivation

technologies did not allow to increase the productivity and several agricultural products are now imported from European Union countries and developing countries.

Distribution of employment between sectors also exhibits the existing tendencies in these sectors (Table 5). While employment share of agriculture and industry decreases, number of people employed in services sector have increased during the transition period and continues to be so.

Table 4. GDP Composition of Selected Transition Countries

Country	Year	Agriculture, value added (% of GDP)	Industry, value added (% of GDP)	Services, value added (% of GDP)	Total natural resources rents (% of GDP)
Central-Eastern Europe					
Croatia	1990	10.9	35.8	53.8	1.8
	2010	5	26.8	68.2	1.2
Czech Republic	1990	8.1	40.2	51.6	0.4
	2010	2.3	38.3	61.4	0.9
Hungary	1990	14.5	39.1	40.7	2.1
	2010	3.5	33	46.4	0.7
Poland	1990	8.2	50.1	41.6	3.3
	2010	3.5	31.6	64.8	2.3
Slovak Republic	1990	7.4	59.1	33.5	0.3
	2010	3.9	34.9	61.2	0.4
Slovenia	1990	5.6	42.3	51.9	0.1
	2010	2.5	31.6	65.9	0.3
Former Soviet Union					
Armenia	1990	17.4	51.9	30.7	0.00
	2010	19.6	35.9	44.5	2.9
Belarus	1990	23.5	47.1	29.4	1.7
	2010	9.1	42.9	47.9	1.9
Estonia	1995	5.8	32.9	61.3	3.2
	2010	3.5	28.9	67.6	3.5
Georgia	1990	31.5	33.5	35	0.6
	2010	8.4	24.3	69.4	0.8
Kazakhstan	1989	26.7	44.6	28.7	24.1
	2010	4.8	42.4	52.8	37.3
Kyrgyz Republic	1990	33.5	35	31.4	2.4
	2010	19.4	29.1	51.3	11.9
Latvia	1990	21.9	46.2	31.9	0.00
	2010	4.3	28.2	74.1	1.44
Lithuania	1990	27.1	30.9	42.1	0.01
	2010	3.5	28.2	68.3	1.8
Moldova	1990	36.1	36.7	27.2	0.00
	2010	14.4	13.2	72.3	0.2
Russian Federation	1990	16.6	48.4	35	19.3
	2010	4	35.4	60.6	21.3
Ukraine	1990	25.6	44.6	29.8	5.6
	2010	8.3	31.2	60.4	5.8
Uzbekistan	1990	32.8	33	34.3	18.4
	2010	19.3	32.8	48	27.9

Table 4. GDP composition of selected transition countries *Continued*

Country	Year	Agriculture, value added (% of GDP)	Industry, value added (% of GDP)	Services, value added (% of GDP)	Total natural resources rents (% of GDP)
Southern-Eastern Europe					
Albania	1990	35.9	48.2	15.9	10.6
	2010	19.1	16.06	64.8	3.3
Bulgaria	1990	17	49.2	33.8	1.1
	2010	4.9	29.5	65.6	3.1
FYR Macedonia	1990	8.5	44.5	47	0.8
	2010	11.5	28	60.5	5.4
Romania	1990	23.7	50	26.3	7.6
	2010	6.7	39.6	53.7	2.4
Serbia	1989	19.9	30.5	49.6	5.2
	2010	9	26.6	64.3	3.5

Source: World Development Indicators, World Bank

Table 5. Employment Composition in Selected Transition Countries

Country	Year	Agriculture, (% of employed)	Industry, (% employed)	Services, (% employed)
Central Eastern Europe				
Croatia	1996	19.9	29.1	50.9
	2010	14.9	27.3	57.6
Czech Republic	1993	7.7	42.9	49.3
	2010	3.0	38.4	58.6
Hungary	1990	18.2	36.8	45
	2010	4.5	30.7	64.9
Poland	1990	25.2	37	35.8
	2010	13.3	31.1	55.6
Slovak Republic	1994	10.2	39.7	50.1
	2010	3.2	37.1	29.6
Slovenia	1993	10.7	44.1	42.1
	2010	8.8	32.5	38.3
Former Soviet Union				
Armenia	1990	n.a.	n.a.	n.a.
	2008	44.2	16.8	39
Belarus	1990	21.6	38.5	36.1
	2010	n.a.	n.a.	n.a.
Estonia	1995	21	36.8	41.8
	2010	4.2	30.1	65.1
Georgia	1990	n.a.	n.a.	n.a.
	2010	n.a.	n.a.	n.a.
Kazakhstan	1989	n.a.	n.a.	n.a.
	2010	28.3	18.7	51.7
Kyrgyz Republic	1990	32.7	27.9	39.4
	2008	34	20.6	45.3
Latvia	1996	17.3	27.2	55.4
	2010	8.8	24	66.9
Lithuania	1997	24.7	28.5	50.8
	2010	9	24.4	66.2
Moldova	1990	33.8	29	33.9
	2010	27.5	18.7	53.8
Russian Federation	1990	13.9	40.2	45.6
	2009	9.7	27.9	62.3
Ukraine	1990	19.8	9.5	15.4
	2008	15.8	24.4	60.7
Uzbekistan	1995	41.2	19.1	34.9
	2010	n.a.	n.a.	n.a.

Table 5. Employment composition in selected transition countries, in % *Continued*

Country	Year	Agriculture, (% of employed)	Industry, (% employed)	Services, (% employed)
Southern-Eastern Europe				
Albania	1994	67.2	11	21.8
	2009	44.1	19.9	36
Bulgaria	1990	18.5	41.2	37.9
	2010	6.8	33.3	59.9
FYR Macedonia	1990	n.a.	n.a.	n.a.
	2008	19.7	31.3	49.1
Romania	1990	29.1	43.5	27.4
	2010	30.1	28.7	41.2
Serbia	1989	n.a.	n.a.	n.a.
	2010	24	25.1	50.9

Source: World Development indicators, World Bank

2.2.4 Price Liberalization and Inflation

Price deregulation was one of the main ingredients of transition process. In former socialist economy, several factories were subsidized by government and the prices were artificially kept low for several goods, including public transport and utilities, for that all working population could have access to this good in order to satisfy the basic needs (Flemming and Micklewright, 1999). With the beginning of liberalization measures, the price liberalization procedure started to be implemented in the first years of transition and led to high levels of inflation. These years were accompanied with hyperinflation. Belarus, Armenia, Kazakshtan and Ukraine were suffering from four-digit inflation rates (Table 6). Consequent years can be characterized with relevantly lower inflation rates. Starting from 2000's, price changes were stabilized and exhibited 8-14% levels, except Belarus, Romania, Serbia, Ukraine and Uzbekistan. These countries experienced high levels of inflation ranging between 28% (Uzbekistan) to 168% (Belarus) (Appendix A). In the following years, the countries succeeded to bring down inflation rates and price changes were stabilized.

One of the causes for observed hyperinflation in the first years of transition was the hidden excess demand as result of supply shortage that was heritage of the former system. The shortage of several consumer goods in command economy has led to accumulation of financial assets of citizens, who could spend it only for few goods. As the countries became independent, this monetary overhang[2] has led to abrupt increase in prices for many goods which were artificially kept in low levels by government. Also, big current account deficits of these countries encouraged them to

[2] Monetary overhang is defined as excess money supply over demand at "current price level and world market interest rates (Hofmann and Koop, 1990).

Table 6. Inflation Rates for Selected Transition Countries

Country	1991-1995	1996-2000	2000-2005	2006-2010
Central-Eastern Europe				
Croatia	538.9	4.5	2.5	3.1
Czech Republic	n.a.	6.8	2.3	2.8
Hungary	25.4	15.1	5.9	5.8
Poland	41.7	12.8	2.8	2.8
Slovak Republic	11.7	8.2	5.9	2.3
Slovenia	13.3	8.2	5.5	2.9
Former Soviet Union				
Armenia	3060.7	8.2	3.3	5.5
Belarus	1373.5	130.4	32.1	10.2
Estonia	n.a.	10.0	3.6	4.8
Georgia	n.a.	14.6	5.8	4.8
Kazakhstan	1080.2	17.1	7.0	10.3
Kyrgyz Republic	436.8	24.1	4.1	9.2
Latvia	56.7	6.9	4.1	7.3
Lithuania	n.a.	n.a.	0.9	5.3
Moldova	382.8	22.7	10.2	9.0
Russia	275.9	39.3	14.9	10.3
Ukraine	2000.9	31.5	8.1	14.5
Uzbekistan	481.4	41.6	16.6	12.5
Southern-Eastern Europe				
Albania	75.4	13.4	3.2	2.9
Bulgaria	129.3	243.2	5.5	6.5
FYR Macedonia	160.3	2.4	1.8	4.0
Romania	159.3	68.8	18.6	6.2
Serbia	n.a.	n.a.	23.8	8.9

Source: World Economic Outlook Database, IMF

devalue their currencies in order to stimulate the foreign trade with other countries, so this also contributed to large export volumes and high levels of inflation rates (Flemming and Micklewright, 1999).

2.2.5 Liberalization of Trade and Capital Flows

Trade liberalization and mitigation of trade barriers were other measures taken in this period. In former Soviet Union and other socialist countries, the union countries were trading traditionally with one another and the trade with western capitalist countries was realized via the administrative centre of Moscow. With the collapse of former trade relations and traditional production spheres, the countries have lost their traditional and reliable trade partners for long years. After liberalization, the countries have faced different kind of goods coming from both developing and developed countries. In this situation, most countries were characterized as "passive globalizers", e.g. they were mainly importing rather than exporting. In this sense, they have experienced several problems (Yudaeva, 2002). Firstly, the goods imported from developed countries were high quality and more expensive and they were primarily machinery and heavy industrial output. The goods such as light industry commodities imported from developing countries were mainly the output of import-substituting sectors. Due to cheap labour implemented in the production of those products, they were cheaper than that of the local products and local products could not compete with them. This factor would also lead to a closure of such import-substituting sectors and shrink the local output. So, this process was accompanied by large current account deficit; the exception was only Russia, which was a major commodity exporter (Aristovnik, 2006). The patterns and dynamics of deficit level were heterogeneous between

regions: in CEE, the current account balance as a share of GDP has reached even positive numbers of 1%, but after 1994 it has deteriorated substantially. In Former Soviet Union countries, current account deficits were even intense. Greatest contributors were Azerbaijan (30,7% of GDP) and Turkmenistan (34,7% of GDP) (Aristovnik, 2006).

Several reasons caused current account deterioration. Firstly, many countries experienced a sharp increase in current account deficit as prices for energy imports from former Council for Mutual Economic Assistance (CMEA) have equalized with market determined-levels. Slow formation of creating a competitive export sector mainly increased the volume of import of goods and services. Moreover, economic and political independence has meant a loss of large subsidies from Moscow, which further contributed to the decline of government revenues for Soviet Union members (Aristovnik, 2006).

With the beginning of transition process, the countries started to abolish their barriers against foreign capital inflows. In former system, capital flows in form of foreign direct or portfolio investment did not exist. Foreign capital was concentrated in these countries only in form of loans. Poland, Hungary, Czech Republic and Romania attracted large foreign loans from Western developed countries, mainly for the import of consumer goods, becoming more burdensome in the end of planned economy era (Mileva, 2008).

First years of transition were not significant in terms of foreign investment flows. Transition countries attracted only 420 million dollars capital inflow, whereas this

number was significantly higher, 142.1 billion dollars for three Latin American countries: Argentina, Brazil, Mexico (Balaz and Williams, 1999). But the situation has changed in second half of 1990's. Large capital inflows as foreign direct investments and portfolio investments were directed towards transition countries with more developed financial market and institutions. The volume of net capital inflows to this region reached 43.6 billion U.S. dollars. This tendency has continued until Asian and Russian crisis, which caused mistrust against this region; also non-transparency affected the volume of financial operations significantly (Balaz and Williams, 1999).

Starting from 2000, capital inflow volume began to rise again, reaching 105 billion dollars of 271 billion dollars that were attracted by emerging market countries in 2005 (Mileva, 2008).

Also, portfolio investments were encouraged especially in Eastern European countries, while cooperative ownership with foreign enterprises was seen as an optimal ownership for high efficient governance and better management skills.

2.2.6 Changes in Wages and Employment

The labour market was substantially affected by transition process, specifically privatization and several changes and problems emerged. In former system, jobs were secured for entire working population. All citizens were offered with different job range according to their years of schooling and skills. In that sense, open unemployment problem was not observed. Also, the wages was relatively homogeneous and compressed, wage dispersion was quite narrow. Workers were at more advantaged position, with higher wages and fringe benefits according to

degree and years of their economic activity. The workers of mental activity and state workers, such as teachers, doctors and social security workers had lower wages. The peasants were in most disadvantaged situation (Milanovic, 1995). With the beginning of transition, job guarantee system was eliminated and one of the side effects of this process, unemployment appeared. Skills and education level of many people did not match with the new labour demand and such people have lost their work places due to the closure of factories and companies. Part of them was unable to develop new skills required by market economy because of their age or other problems.

In his work on income inequality and poverty in first years of transition, Milanovic (1998) compares the employment and wages conditions in transition countries with the Great Depression period in USA and Germany. He states that, the Depression caused high rates of unemployment, while the wages were kept in same level, whereas in transition economies, the official unemployment levels has merely changed, while wages were only 60-80% of the 1989 level. He also claimed that the real unemployment levels were significantly higher than that in official statistics.

The world crisis in 2008 affected the unemployment in transition countries, especially in Central and Eastern and Southern Europe. The unemployment levels have extremely increased in Estonia, Latvia and Lithuania in 2009 compared to 2008 level and have merely went down in 2011. For other countries with high unemployment levels: Macedonia (32.20%), Bosnia and Herzegovina (24.10%), Georgia and Albania, the increasing unemployment was a continuation of rising

level of unemployed people in 2000's. In 2011, unemployment level was well above or very close to 10% of working population in transition regions (except Azerbaijan, Czech Republic, Kazakhstan, Moldova, Romania and Russia) (Appendix B).

Also, employment composition has changed during transition period. Number of employed in private sector has increased substantially, by varying between countries. In Eastern European countries share of employed in private sector was around 20% in pre-transition years. With the beginning of transition, this number continued to increase and reached 75-80% of total number of employed people. In former Soviet Union and Yugoslavic countries, this number is relatively low, constituting around 50-65% of total employment.

By concluding all above indicated facts, it can be said that liberalization measures taken during this period have significantly changed economies of countries, life of their citizens and their monetary and fiscal policies. First years of transition were significant with highly volatile macroeconomic indicators and deep recession in production and labour market. But in consequent years, countries were able to achieve positive economic growth and stabilized inflation, but unemployment continues to be one of the main problems. These changes also affected income distribution and income composition.

Table 7. Unemployment Rates of Selected Transition Countries

Countries	1991-1995	1996-2000	2001-2005	2006-2010
Central-Eastern Europe				
Croatia	14.4	12.2	14.3	10
Czech Republic	n.a.	6.5	7.9	6.2
Hungary	9.8	7.6	6.1	8.9
Poland	13.3	12.8	18.9	9.7
Slovak Republic	13. 7	14.5	18.1	12.2
Slovenia	7.9	7.1	6.4	5.7
Former Soviet Union				
Armenia	n.a.	n.a.	33.5	22.1
Belarus	1.4	2.7	2.3	0.9
Estonia	8.7	11.1	10.0	9.4
Georgia	n.a.	11.1	12.3	15.3
Kazakhstan	10.5	13.1	9.0	6.8
Kyrgyz Republic	5.7	6.8	9.4	8.3
Latvia	6.9	15.8	11.1	11.2
Lithuania	n.a.	n.a.	12.6	9.5
Moldova	14.2	10.8	7.6	6.1
Russian Federation	6.5	11.2	8.3	7.1
Ukraine	n.a.	10.9	9.1	7.2
Uzbekistan	0.3	0.36	0.36	0.1
Southern-Eastern Europe				
Albania	17.8	16.0	15.1	13.3
Bulgaria	12.2	13.8	14.2	7.7
FYR Macedonia	31.9	33.3	34.7	33.7
Romania	7.8	8.6	7.4	6.7
Serbia	n.a.	12.6	16.8	18.4

Source: World Economic Outlook Database, IMF

2.3 Changes in Income Composition and Income Inequality. Formation of New Social Stratification

The liberalization process and emergent private sector caused substantial changes in income composition. In former system, wage earnings were the main source of income, constituting 53-69.5% of income (Milanovic, 1998). Share of non-wage private sector: self-employment earnings was relatively low, property income officially did not exist. But share of non-wage private sector ranged between regions; this figure constituted only 3.4% of income in Czechoslovakia, whereas it exceeded 25% in Poland. With the beginning of transition, the share of labour income has begun to decrease. The increase was greatest in Bulgaria and FSU countries (Mikhalev 2000). The statistical data provided by Milanovic (1998) shows that, the share of labour income has remained constant in the beginning of transition (32-33% of GDP), whereas this share in Baltic (from 41% of GDP in 1989 to 29% of GDP in 1994) and Slavic republics (from 43% of GDP in 1989 to 35% of GDP in 1994) of FSU has declined. The share of non-wage private incomes has increased everywhere, by 9% GDP points in Eastern Europe, 10% and 5% GDP points in Slavic and Baltic republics of FSU respectively. Mitra and Yemtsov (2007) state that, the changes in income composition played significant role in existing income distribution transformation. They indicate that, increase in the share of entrepreneurial income per capita has increased over time, which contributed significantly to income inequality (Mitra and Yemtsov, 2007).

The process was accompanied with abrupt increase of income inequality in these countries. The planned economy system enjoyed relatively equal distribution of

income, which was considered to be one of the achievements of this system. Though, the economists argue about the impact of "excess egalitarian income distribution"[3] on economic growth, this level of income inequality had a positive impact on well-being of the citizens in these countries (Gruen, 2000).

The increase in income inequality was observed in all transition countries. However, it is varied among regions and countries. The countries in Central-Eastern European countries exhibited moderate increase in income inequality (Appendix C), while changes in Former Soviet Union and Southern-Eastern European countries have experienced dramatic increases in income inequality (Flemming and Micklewright, 1999).

In CEE countries, the Gini coefficient of net per capita household income has risen in average by 5-6 points from average 0.22-0.23 points to 0.27-0.28 points (except Slovakia). This number is similar to "average difference" between the socialist and market economies before the transition period. However, the number of deprived people in this region was much less than that in Former Soviet Union (FSU) and SEE. These countries could achieve better targeted and strong social policy institutions and implemented successful social assistance which allowed them to avoid big numbers of socially excluded citizens. Also, the region has created strong middle class of small entrepreneurs. These measures prevented extreme polarization in income levels (Mikhalev, 2000).

[3] Under "excess egalitarian income distribution", it is assumed the income inequality in former socialist countries, where such situation discouraged individual incentives and thus, could affect economic growth negatively (Cornia, 2011).

But the differences between CEE countries also exist. Although most of them experienced moderate recession and quick recovery, they had less distorted economies by military sector and heavy industry and more developed social transfer system, the differences in income inequality levels appeared. Mikhalev (2000) compares two most successful CEE countries: Poland and Czech Republic. He states that, Poland implemented gradualist reforms, slow privatization, wage economy exhibited a decline and social security system was significantly distorted. The income inequality, also extent of poverty was relatively high. On the other hand, Czech Republic experienced fast privatization, wage share in income composition merely changed and it had better targeted social transfers system, which in turn caused lower income inequality and low levels of poverty. Czech Republic also has preserved former social structure more than Poland.

The income inequality in FSU increased sharply after 4-5 years of the beginning of the transition process. Gini coefficient has risen in average by 10 points and reached the levels of most unequal countries in the world. Russia and Ukraine (0.39-0.40 Gini coefficient) exhibited the highest income inequality levels among these countries. Some resources even show that Gini coefficient was above 0.50 for these countries in the middle of 90's (EBRD, 2000). But their transition policy was different (Mikhalev 2000).

Russia implemented radical shock therapy and large-scale privatization, while Ukraine attempted to implement gradual reform policy, had high level of inflation and delayed privatization. Both countries had too high poverty rates, high number of socially excluded persons and criminalization and informalization of the

economies. The emergent financial and economic elite and oligarchy showed extreme polarization in earnings. Despite a quite long period of transition process (over 20 years) these countries could not achieve competitive sector, production and service sectors are in hands of the few oligarchic classes. The high income inequality in these countries is persistent and did not change much during this period (Simai, 2003).

In Central Asian countries, reform policy and the income inequality levels also exhibited differences. Some countries such as Kyrgyzstan implemented radical measures like Russia and made rapid changes almost in the first years of transition process. Whereas Uzbekistan preferred delayed privatization, preservation of old social transfers system and had relatively better targeted social programs than Kyrgyzstan. These factors resulted lower earnings inequality in Uzbekistan, this indicator was rather low in Kyrgyz Republic. However, the extent of informalization and criminalization are one of the major problems in these countries. Clan relationships play determinative role in these countries.

SEE countries also implemented the reform measures relatively slow, which did not allow the strong capitalist class to emerge, but these countries are also subject to high poverty rates and income inequality.

The transition process has changed the social stratification of these societies which was formed by new income distribution. There were both winners and losers. While winners were young, well educated (often abroad) and better adapted to new market conditions, the losers were more numerous, old, pensioners in general, less

educated, women with few skills, rural people who have lost their job with an elimination of "*kolkhoz*" system (Simai, 2003). Mihkalev characterized and classified the social stratification as follows:

The new elite or emerging capitalist class that emerged in the first years of transition was quite differentiated and consisted of different groups and people. These differences were intra country, but also inter country. Firstly, in FSU, some part of old members of former *nomenklatura* and top managers of factories and enterprises have successfully adapted to new economic system and by using both political and economic strength heritage from former system have gained enormous property and financial assets as a result of *insider* and *large-scale* privatization. In CEE, members of older political elite have retired or moved to minor jobs. But technocratic managerial fraction of communist elite have succeeded to retain their positions and formed new capitalist elite (Mikhalev, 2000).

The other group of new economic elite has gained its power by gradually starting from low levels as middle chain manager or deputy manager and eventually obtaining the position of general manager (Simai, 2003).

The weak government and existence of pervasive corruption also allowed corrupt and criminal elements to penetrate the political and economic elite, so mafia-type groups has also formed as a significant component of new elites (Mikhalev, 2000).

Middle class. There were several discussions about the existence of middle class in transition economies. But undoubtedly, this class has emerged in the last 10 years and continues to widen as free market principles are implemented. This class includes: middle and small entrepreneurs, high-skilled professionals and middle chain managers. These groups are in better position than the traditional middle class members such as teacher and doctors, who are in the worst position, while most of them work in state education institutes and medical centres. Doctors of private hospitals and medical centres are in the better financial position and penetrate the part of the middle class with high-income levels.

The base stratum. This social class is most populous and generally consists of losers from the transition process: blue-collar workers, peasantry, employed pensioners and even engineers especially from heavy industrial sector. The workers, which were most privileged class in former system, have experienced great losses during the transition, as their income decreased and fringe benefits have disappeared. Peasantry was in the most disadvantaged position. With the beginning of the liberalization process, the cuts of subsidies and increase of the prices of energy, agricultural machinery and industrial inputs substantially decreased their competitiveness. Some regions exhibited hidden unemployment in agriculture and most of them moved to self-employment (Mikhalev 2000).

Socially deprived and marginalized groups. This group represents the most vulnerable group of people. No transition country could escape increases in poverty, which was much more severe in FSU than in CEE. This group

encompasses unemployed, single parent families, single pensioners. Also, the children who live in single parent families are mostly affected by poverty.

The data on income distribution is not updated frequently and the only data that covers most of the transition countries belong to 2008-2009 years. According to the data set, which was taken from AllGinis Database prepared and provided by World Bank, the levels of Gini coefficient continue to show persistence in the first years of transition. The countries with most uneven income distribution are Russia (40.1 in 2009), Macedonia (43.2 in 2009) and Georgia (39 in 2008) (Appendix C). Also, the countries such as Azerbaijan and Turkmenistan are considered as high income inequality countries, but the data shows the opposite. This is assumed to be due to the underreporting of several high-income households about their income (Milanovic, 2008) and the existence of corrupt and informal economy.

The lowest figures of Gini coefficients are in the Central Europe countries: Belarus, Czech Republic, Slovak Republic, Slovenia and Ukraine.

The rich/poor ratio data, provided by World Bank also shows the widening income gap between the richest top 10% and the poorest 10% stratum. This indicator has abruptly increased during the 1990's and continued to rise in several countries, such as Estonia, Latvia, Lithuania and Romania. This income gap is relatively low for Czech Republic, Hungary and Serbia (Table 8).

By comparing Latin American and transition countries, Cornia (2011) concludes that, two regions exhibit opposite trends in income inequality. Better

prepared labour market policies, educational attainment and better targeted social security system highly contributed to income distribution in these countries. Recent changes in political life of Latin American governments affected their economic and social policies. These governments mainly follow leftist policies by focusing on poverty alleviation and targeted social security system. The results are apparent. While the Latin American countries improved the above mentioned elements and succeeded to decrease income inequality and poverty, transition countries experienced deterioration of labour market legislation and social security system and reducing attainment levels (school and high education), which foster relatively unequal distribution of income. He also indicates that, the tax and redistributive policies should be efficiently used in reduction of income inequality. Mitra and Yemtsov (2007) state that, size and targeting of public transfers play a prominent role in income distribution and can hinder the prospect increase of income inequality.

Table 8. Rich / Poor Ratio for Selected Transition Countries

Country Name	1995	1998	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Central-Eastern Europe												
Croatia	6.74	9.95	10.17	10.33	10.49	10.32	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Czech Republic	n.a.	n.a.	14.86	8.92	8.34	7.41	n.a.	6.64	6.71	5.99	5.94	n.a.
Hungary	n.a.	n.a.	4.96	5.87	5.70	5.58	5.46		6.73	n.a.	n.a.	7.19
Poland	n.a.	6.62	7.27	7.80	7.42	7.76	7.66	7.94	7.89	7.51	6.95	4.99
Slovak Republic	n.a.	5.85	n.a.	6.44	6.94	7.29	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Slovenia	n.a.	n.a.	n.a.	n.a.	7.63	8.10	n.a.	n.a.	10.06	n.a.	6.89	n.a.
Former Soviet Union												
Armenia	n.a.	n.a.	9.33	8.99	7.93	10.31	9.25	7.80	6.75	6.79	n.a.	6.85
Belarus	n.a.	n.a.	6.01	n.a.	n.a.	9.61	n.a.	n.a.	10.06	n.a.	n.a.	n.a.
Estonia	n.a.	12.67	16.06	14.29	14.43	n.a.	15.29	14.86	12.45	15.66	n.a.	16.76
Georgia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Kazakhstan	n.a.	9.15	n.a.	6.85	n.a.	8.09	12.09	9.38	6.86	11.18	9.93	10.18
Kyrgyz Republic	8.45	9.25	n.a.	10.08	10.90	10.21	n.a.	n.a.	10.29	10.64	9.49	n.a.
Latvia	n.a.	7.05	8.05	8.02	n.a.	10.14	n.a.	n.a.	n.a.	11.06	n.a.	n.a.
Lithuania	n.a.	6.79	n.a.	12.27	12.26	12.41	12.47	15.64	n.a.	15.46	15.96	16.63
Moldova	n.a.	7.86	7.85	8.41	n.a.	9.56	8.98	8.40	8.38	8.48	8.30	8.18
Russian Federation	n.a.	n.a.	n.a.	8.13	8.07	7.89	9.04	6.75	6.59	5.89	6.02	6.74
Ukraine	n.a.	30.61	n.a.	8.91	10.34	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Table 8. Rich / Poor Ratio for Selected Transition Countries *Continued*

Country Name	1995	1998	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Southern-Eastern Europe												
Albania	n.a.	n.a.	n.a.	5.72	n.a.	7.08	7.89	n.a.	n.a.	8.21	n.a.	n.a.
Bulgaria	n.a.	5.45	6.99	n.a.	n.a.	6.28	n.a.	n.a.	n.a.	8.25	n.a.	n.a.
FYR Macedonia	n.a.	12.56	10.90	9.96	8.84	9.40	9.83	9.82	9.32	9.21	8.45	7.87
Romania	n.a.	n.a.	12.17	9.53	10.50	10.35	10.67	13.97	14.54	13.09	11.52	n.a.
Serbia	n.a.	n.a.	n.a.	n.a.	n.a.	6.36	6.77	5.65	5.91	5.49	5.14	n.a.

Source: World Development Indicators, World Bank

Chapter 3

LITERATURE REVIEW

3.1 Income Distribution: Definition and Current Trends

Economic and social welfare as a tool of describing the life and living standard of people has a major importance in economic literature. Economists measure and evaluate the welfare according to monetary, as well as non-monetary indicators of welfare. A monetary indicator, as national income per capita is widely used for determining one's living standard. As GNP grows, it is accepted that, national income per capita also increases, which increases purchasing power of a person that allows him or her to obtain more goods and services and increase his or her utility (Greve, 2008). Non-monetary welfare indicators, such as access to clean water, food, education, healthcare, equal opportunities in labour market, etc. can also be used for describing the living conditions of individuals and greatly contribute to measurement of overall welfare level.

However, the static level of income per capita does not exhibit the whole picture of the economic wellbeing of the members of a society. The distribution of income among the members and its concentration degree within the groups of people plays a significant role in describing the welfare of the whole society.

Distribution of income in society indicates how income is concentrated at disposal of different groups. The concentration degree helps to determine how unfair the income

is distributed, e.g. income inequality. For assessing the income concentration degree, population is divided into groups of people as a percentage of whole population and the income share at disposal of each group is estimated. For example, in World Bank statistical data, income share of 1st quintile identifies income share of poorest 20% of whole population and 5th quintile is calculated as a 20% of people with top income levels in a society. The income share of those quintiles in whole income of society can help to explain how severe the income inequality is in particular society. For example, if 20% of people with top income possess 67% of whole income and poorest 20% owns only 7% of whole income, these income concentrations show an unequal income distribution, because the difference between the income shares possessed is extremely wide. In contrary, if top 20% of people owns 34% of whole income and poorest 20% has 15% of whole income, this income concentration can be considered rather fair in comparison with previous example, because income gap between the top 20% and poorest 20% is not severe.

Inequality constitutes different definitions: whether it is being satisfied by the particular rewarding system or as differences in income distribution (Litchfield, 1999). Generally, it is conceptualized as dispersion of distribution of income or consumption.

Discussions regarding the income inequality trends have gained major importance in the beginning of 2000's. The question of whether inequality has increased or decreased can be treated according to the measurement method of disparities of global income (Wade, 2001; Olinto and Saavedra, 2012). But yet, Wade (2001) argues that, regardless the measurement method, no research exhibited decreasing trend in global inequality. Ortiz and Cummins (2011) use market exchange rate

methodology (Table 9) and PPP-adjusted exchange rate methodology (Table 10) for the calculation of inequality indicators. Thus, they find that inequality calculated based on PPP-adjusted exchange rate reveals lower inequality values, but these numbers are still unacceptably high. While the richest quintile of the world possessed 74.4% of world income in 2000, poorest quintile got only 1.7% of world income. This number converge to lower share of top quintile and very modest improvement in share of poorest quintile, 69.5% and 2.0% respectively in 2007.

Table 9. Summary Results of Global Income Distribution by Population Quintiles, 1990-2007 in PPP constant 2000 U.S. dollars

Quintile Shares	Global Distribution (%)		
	1990	2000	2007
Q5	87	86.8	82.8
Q4	8.1	7.5	9.9
Q3	2.8	3.2	4.2
Q2	1.4	1.6	2.1
Q1	0.8	0.8	1.0

Source: Ortiz and Cummins (2012) calculations using World Bank (2011), UNU-WIDER (2008) and Eurostat (2011)

Table 10. Summary Results of Global Income Distribution by Population Quintiles, 1990-2007 in PPP 2005 international dollars

Quintile Shares	Global Distribution (%)		
	1990	2000	2007
Q5	75.3	74.4	69.5
Q4	14.9	14.2	16.5
Q3	5.4	6.3	7.8
Q2	3.0	3.4	4.2
Q1	1.5	1.7	2.0

Source: Source: Ortiz and Cummins (2012) calculations using World Bank (2011), UNU-WIDER (2008) and Eurostat (2011)

Milanovic (2009) calculated global Gini indices over time and found the following results in Table 11. This trend confirms the findings of Wade (2001) and exhibit upward trend of global income inequality.

Table 11. Global Gini index

Year	1820	1850	1870	1913	1920	1950	1960	1980	2002
Gini index	43	53.2	56	61	61.6	64	63.5	65.7	70.7

Source: Milanovic (2009)

So, from the end of XIX century, the income inequality showed an increasing trend and inter-country and within country income gap between rich and poor was widening. In 50-60's of XX century, the income distribution become more egalitarian and income gap between different groups within societies began to narrow. Cornia (2002) argues that the narrowing of income gap can be caused by social redistribution policies conducted by different developed countries. Also the reason for it can be the massive industrialization of the production in developed countries, which could affect the income distribution positively. Several studies regarding the relationship between industrialization and income distribution had a significant outcome, e.g. they had an important impact in improving the income distribution (Inglehart, 1997).

From the beginning of 80's of XX century, widening implication of neoliberal policies in economic and social life of many countries has deepened the gap between income of rich and poor (Cornia, 2002). Privatization of many economic sectors, reduction of progressive taxes increased the income concentration in the hands of group of people with top income (Harvey, 2005). Also, the empirical evidence shows that the rising income inequality in both developed and developing countries is associated with wide implication of liberalization and globalization measures (Stewart, 2000; Cornia, 2002).

It is argued that, income inequality estimated based on household consumption do not cover the household wealth such as financial assets, real estate and savings. Some studies indicate that wealth-based inequality figures exhibit much more unequal world. According to ILO calculations, world wealth-based Gini index is 89,2 in 2000, this number is considerably high in comparison with income-based inequality calculations. Davies et al (2008) calculated wealth Gini for different developed and developing countries for different years, showing that wealth Gini ranges between 67-81 for developed countries and 65-78 for developing countries.

The impact of income inequality on economic and social life is also widely discussed by scholars. Some of them advocate for positive impact of "fair" income inequality on economic growth and competitiveness environment, other researchers mention that, income inequality affects economic growth and social life of people negatively, causing social exclusion and polarization (Ferreira, 1999).

It is also suggested that governments can influence income distribution through efficient taxation and social guarantees policy. But widening globalization process restricts government intervention because of the feared impact on competitiveness, trade and capital movements, which in turn leads to economic and social instability (Stewart, 2000; Harvie 2005).

Review of previous studies on income distribution shows that income disparities are implausibly wide within and between nations. But as Nobel Prize laureate in economics, Amartya Sen states, "regardless of a trend, the magnitude of income inequality is unacceptable" (Sen, 2001). So, this issue must be analysed and reviewed in detail and the factors influencing it must be widely discussed.

3.2 Theoretical Background

Economic literature suggests several determinants of income distribution. Above mentioned factors cover some of them.

Personal correlates. One of the numerous determinants of income inequality can be regarded as personal characteristics. This factor includes: education level, native talents and skills, also, age, gender, ethnicity, etc. According to literature, as education level or years of schooling increases, labour productivity, thus leads to the increase in income levels. The differences in education levels can, thus, explain the differences in income levels. The role of a native talent (intellectual, leadership skills, artistic aptitude etc) has an ambiguous effect on income. It is accepted that along with hard-working it plays a role in determining the success in sports, arts, where the performance is relatively easy to measure. But the proof that it plays a significant role in population-wide income differences is a matter of discussion.

Natural resources. Natural resources abundance is considered to be one of the main determinants of income inequality. The production of and the heavy reliance on natural resources generates rents that are easily absorbed by ruling elite, which leads to income differences between elite minority and poor majority. Moreover, the dependence on natural resources hinders the development of manufacturing and industrialization and thus, indirectly affects income distribution. On the other hand, by increasing the wages of unskilled workers and increasing the demand for skilled labour, manufacturing stimulates equality.

Economic growth. Most discussions are related to the issues of impact of economic growth and economic structure on income distribution. The central researches have

focused around the Kuznets' (1963) postulates that, short-term growth is usually accompanied with higher levels of income inequality, whereas the long-term economic growth leads to a lower income inequality. This shift would generate an inverted U-shaped correlation between GDP per capita and inequality. Kuznets (1963) states that, in initial period, agriculture sector constitutes big share of country's economy, this stage is characterized by low income inequality. But as the economy shifts to secondary and tertiary sectors, in the short run, it increases GDP per capita and income inequality. Consequently, the economic growth, GDP per capita and income inequality have positive correlation. As the resources flow from agriculture to industry and to services, this in turn decreases income differences between the industry and agriculture, because industrial sector now demands more workers. As a result, long-run relationship between economic growth and income inequality is negative.

Trade openness and capital flows. Depending on the factor intensity of exported goods and services, income can be distributed towards the reduction of income inequality or deepening gap in income levels. According to Hecksher-Olin theorem, with open trade, returns of relatively abundant factor of production increases, whereas the returns from relatively scarce factor decreases. As a result, income inequality is increased in capital-abundant countries, because it increases the return of capital owners and decreases the return of labour, and income inequality decreases in labour-abundant countries, because wages go up and returns on capital go down as a country is open for trade (W.Stolper and P.Samuelson (1941).

Macroeconomic factors. Several determinants can be included in this group: inflation, unemployment, government expenditures, tax system, etc. Inflation is

traditionally regarded as one of the determinants of income distribution. While the inflation affects mostly the population with fixed income and redistributes the resources from persons with fixed income, which is usually the less socially insured and poorer part of the income. Also, as increasing level of unemployment usually affects the bottom of income distribution and deepens the income inequality. The impact of the government expenditures on income distribution can depend on the composition of expenditures and the share of social transfers in total expenditures.

3.3 Literature Review of Determinants of Income Inequality

Determinants of uneven income distribution and the causes have been discussed largely among economists. There are numerous determinants of income inequality and these determinants can change due to specific values and elements of every country.

a) Personal correlates

Many personal determinants can stand behind the income inequality among individuals. Higher education or years of schooling leads to higher income, while people with higher education are considered as high-skilled labour. The difference in skills creates an income gap between high- and low-skilled labours. Average income of university graduates can be 10-15 times than that of illiterates (Albert Berry, 2013).

Also, personal characteristics such as age, gender, ethnicity, rural or urban residence, being union member or not, etc. can influence income distribution. It is well known fact that gender discrimination also contribute to income inequality; men have higher income than women. Also, belonging to ethnic minorities or being an immigrant can

lead to a lower income compared to majority nation or residents of a country (Berry, 2013).

The role of a native talent (intellectual, leadership skills, artistic aptitude etc) has an ambiguous effect on income. In literature, researchers suggest weak significance for native talents in determining income differences within a population (Boissiere et al. 1985). It can be so due to complexity of measuring native skills in an adequate way (Berry, 2013).

b) Natural resources

The issue of reliance on natural resources has been discussed in political economy of inequality. Gylfason and Zoega (2002) argue that, high dependence on natural resources retards economic growth and increases income inequality. Alongside, the owners of land and natural resources usually oppose to higher taxes charged on their capital and as a result, they contribute few to redistribution (Easterly, 2007).

Moreover, the dependence on natural resources hinders the development of manufacturing and industrialization and thus, indirectly affects income distribution. (Inglehart, 1997).

Also, owners of land and natural resources has little incentive to build effective and efficient institutes which would strictly limit on rent expropriation possibilities and redistribute more towards the poor population.

Goderia and Malone (2009) have obtained non-monotonic relationship between natural resources rents and income inequality. As a result of conducted research for

90 countries between 1965-1999 years, they found that income inequality will fall in the short-run as natural resources rents will increase, but thereafter, income distribution will worsen while economy grows until initial impact on natural resources rents on income inequality is eradicated (Goderia and Malone, 2009).

c) Economic Growth

The impact of economic growth on income inequality has been largely investigated. Kuznets' statements were investigated repeatedly and controversial outcomes were obtained. While some researches confirmed the statement, most scholars exhibit no evidence for such a deterministic relationship. The reason can be the need of disaggregated statistical data from all three sectors of the economy and shares of each sector in the final output. Such data is unavailable or unreliable for many countries.

Closely relates to Kuznets' hypothesis, the impact of economic growth in distribution on income inequality was also widely investigated. Ravallion (2001) agrees with the fact that bulk of researches reveals zero impact of economic growth on income inequality, but also argues that the relationship between economic growth and income inequality must be investigated and for this reason, more detailed data must be reviewed. By analyzing the income inequality trends in world, Ortiz and Cummins (2011) argue that economic growth achieved in developing countries could not reduce income inequality and current economic development mostly accrued to wealthiest billion. Also, Cornia (2011) states that, with few exceptions, economic growth did not contribute to reduction of income inequality and poverty.

Still, the relationship between economic growth and income inequality is complicated and should be investigated more. In some countries (India, more dramatically in China) economic growth has lead to increasing income inequality, but in some countries (Taiwan and Latin American countries) income inequality has decreased during the economic growth. One of the explanations can be in examination of implementation of redistributive policies.

d) International Trade Flows and trade openness

The effect of international trade on income distribution can have different outcomes. The existing researches give ambiguous results regarding the theorem mentioned above. Gourdon et al (2006) argues that, the trade liberalization is associated with worsening income distribution in the countries abundant with highly-skilled labour and with very low education level, but have a positive effect on income distribution in countries well-endowed with primary educated labour force.

As Meschi and Vivarelli (2007) show in their research, by disaggregating the trade flows according to their areas of origin and destination, the strong correlation between trade openness and income distribution occurs. As a result, it is shown that trade openness affects income distribution negatively. Also, by comparing middle income and low income countries data, they found out that this argument is significant only for middle income countries.

Another group of researchers argues that the trade liberalization can compensate the losers and reduce inequality as a final result. Free trade reduces price of basic consumption goods, from which poor people benefit more, because they spend the big share of their income on such goods relatively more (Birdshall, 1998). It also

diminishes the monopoly gains of upper class, thus improving income distribution (Birdshall, 1998).

e) Biased technological changes

Clearly, technology choice and biased technological changes can be one of the main drives of income inequality. The implication of the technology which substitutes the labour factor distributes the income towards capital owners from low- or medium-skilled labours, thus creating higher income inequality. There is no doubt of its relevance but the magnitude of its impact is hard to measure precisely and since technological advance is essential to growth, "there is a possible trade-off between growth and labour demand" (Berry, 2013). In some situations, technology can be employment creating, when it is concerned with the improvement of intermediate technology, which uses medium level of labour/capital ratios (Berry, 2013).

Some reasonable guesses are that the technological change is the most important single factor in raising inequality or keeping it high and it takes quite policy to avoid a significant trade-off between growth and such displacement (Berry, 2013).

3.4 Common Review of Income Inequality in Transition Economies

Income distribution in transition economies has been discussed by several researchers and remains to be an actual topic even today. Rising income inequality in post-socialist countries required the investigation of the changes and determinants of income distribution in different transition economies.

The factors that affected income distribution in transition period varied across the countries. However, common determinants provided by literature were valid for transition countries.

The investigation of the relationship between economic growth and income distribution was one of the widely examined areas for researchers of income inequality in transition economies. The inverted "U" hypothesis of Kuznets relating economic growth and income inequality was also examined by several economists. The results are ambiguous. In his research, Ivaschenko (2002) has obtained ambivalent result about the relationship between economic development and income inequality for different groups of transition economies. He found out that the correlation between economic growth and income inequality has a negative sign in Eastern Europe, while high economic growth is associated with higher income inequality in Former Soviet Union republics. Milanovic (2010) found that, acceleration of economic growth is pro-rich and rising economic growth is accompanied by increasing income shares of richest deciles. Tridico (2009) concluded from his investigations that economic growth did not result in fairer income distribution and poverty rates remained in high levels. His results do not identify the inverted "U" hypothesis.

The liberalization of trade and price liberalization has also affected income distribution in different ways. Ivaschenko (2002) suggests that economic liberalization and structural readjustments have resulted in high income inequality. By using the Cumulative Liberalization Index (CLI), he showed that 10 percent increase in CLI at the mean is associated with 0.27 and 0.34 percentage point increase in the Gini coefficient at the region-specific averages in Former Soviet Union and Eastern Europe countries, respectively.

Grimalda (2008) states that economic globalization factors such as expansion of import, export and FDI are strongly correlated with within-country inequality. As a

result of trade liberalization and globalization process, the countries in transition had to face the lower prices and more efficient technology of manufacturing sectors from developed countries. Moreover, they start to import commodities from developing countries which used cheap labor force and reduced competitiveness of CIS countries. The countries, which are considered as "passive globalizers", e.g. countries with high trade to GDP ratio, especially with bigger share of imports, experienced higher income inequality (Yudaeva 2002).

Privatization is also assumed to be one of the determinants of income inequality in transition countries. Privatization was implemented by using small-scale and large-scale privatization methods. Small-scale privatization considered case-by-case privatization process and was related to small and medium entrepreneurship entities (Dyba, 1994). These entities were privatized mainly by citizens with relatively small financial assets, thus contributed to distribution of assets among citizens and did not challenge income distribution in great extent. In contrary, large-scale privatization covered mass privatization, manager-employee buyouts and direct sales, in which big state enterprises were privatized in large shares by financial organizations or by former administrators and employees of the enterprises which consequently led to "tunneling", e.g. the concentration of assets or privatization certificates in the hands of few entrepreneurs or former managers of those enterprises. This situation led to the rapid increases in income distribution (Nellis, 1999).

Deindustrialization had a significant effect on income inequality: the deterioration of several industrial sectors in former socialist countries have caused the liquidation of working places and resulted in more uneven income distribution in these countries (Ivaschenko 2002). This also led to shut-down of several manufacturing spheres. In

countries as Kazakhstan, Azerbaijan and Russia, mining products as oil, gas and etc. became the main export commodities and the wages of workers of these spheres were substantially higher than that in the import-substituting and service sectors' workers. This fact has also contributed to income inequality in these countries (Yudaeva 2002). Also, shut down of several working spheres reduced the tax gains of government, which in turn, decreased the redistributive activity and social guarantees of government to people with low income (Yudaeva 2002).

Price liberalization and following high rates of inflation affected income distribution negatively in transition economies, especially in CIS, where countries experienced hyperinflation. Almost all socialist economies started the process of transition with substantial monetary overhang (except Czechoslovakia). That's why, when the prices were liberalized, price doubled or tripled in transition economies. Higher inflation affected the part of population with fixed income. Several countries experienced increased taxes on wages, while pensions and social benefits were deteriorated as a result of high inflation, which substantially reduced real income of people (Flemming and Micklethwait, 1999).

Liberalization of labor market and liquidation of job guarantees by government led to high unemployment rates and as a result of the unwillingness of control over minimal wages has reduced the minimal wage barriers. In Armenia, Belarus and Russia, for instance, the minimum wages fell from 26-36% of the average wage in 1989 to 8-10 per cent in 1994 (Cornia, 1996). These economic changes caused many people not to have enough resources to maintain the decent standard of living and to fall below the poverty line. The private sector is usually associated with higher earnings inequality

than in government sector because of large differentiation of wages, so expanding private sector increased the income inequality (Simai, 2006).

For comprehensive assessment of impact of transition measures on income inequality, Milanovic (2010) conducted a research for selected 26 countries during 1990-2005 years. As a dependant variable, income shares of deciles were selected. Alongside with main macroeconomic indicators such as GDP growth rate, inflation and government expenditures which were taken as control variables, he included the transition indexes prepared by European Bank of Reconstruction and Developments (EBRD) for assessment of the transition progress in these countries. The impact of transition measures were assessed with two regression models: in first regression, average of nine indexes was included in model as a composite variable. In the second regression model, each transition index was included as a separate variable. Moreover, polity index was selected as a political indicator which may affect income inequality.

He found that overall transition process affected income distribution in post-socialist countries negatively. In the first model, he showed that composite transition index reduces the income share of poorest five deciles, but increases the income shares of the richest decile. Findings of the second model helped to assess the impact of different dimensions of transition process. He stated that, only small-scale privatization and infrastructural reform indices had a significant impact on income shares of deciles. Small-scale privatization caused the fairer income distribution by increasing income shares of poorest five deciles, while income shares of richest second and third deciles were affected negatively by this transition index.

The findings of some other studies suggested that the limitation and decreasing quality of some public utilities as free medical service, education and social assistance programs has increased the economic and social vulnerability of people with the lowest income, thus creating higher crime rates and social instability (Ivlevs, 2013). Also, low education levels and scarce public expenditures contributed to income inequality. The countries with higher education levels and more generous social transfers could escape the worsening income inequality (Kaasa 2007, Tridico 2009).

Civil conflicts that were experienced in some of the transition countries (Russia, Azerbaijan, Armenia, Serbia, Bosnia and Herzegovina, etc) also affected the income distribution negatively (Ivaschenko 2002).

Other than the above summarized studies, especially the impact of transition measures on income distribution were not widely discussed and assessed, most of researchers confined themselves with theoretical considerations and descriptive analysis regarding these issues. The lack of empirical work may be emanated from data unavailability and unreliability, which is a common problem for considered countries. So, the empirical assessment of transition indicators on income inequality can fill the gaps in terms of policy formation that could ease the transition period.

Chapter 4

DATA AND METHODOLOGY

Increasing income inequality in post-socialist economies during transition period required an investigation of main determinants of income inequality in these countries and assessment of possible impact of transition measures on income inequality. In this context, interest of the study is to analyze the impact of various liberalization measures over the period on income inequality. This section will lay out the details about the data and methodology used as below.

4.1 Data

Twenty three transition countries which provide sufficient data are selected for this study (Table 12). The data covers the period of 1990-2009. The analysis is started as from 1990, because it is considered as the beginning of the transition period for most of the countries selected for the study. This period cover the period from the beginning of transition until the recent available years. So, the sample period can allow us conducting a comprehensive study. Some observations on some variables are missing for some of the countries. Therefore, the data set provides an unbalanced panel data set.

Some countries such as Azerbaijan and Turkmenistan, Bosnia and Herzegovina and Mongolia were not included into the analysis due to lack of sufficient observations for dependant variable.

Table 12. Transition Countries Selected for Econometric Analysis

Central-Eastern Europe Countries	Former Soviet Union Countries	Southern-Eastern Europe Countries
Croatia Czech Republic Hungary Poland Slovak Republic Slovenia	Armenia Belarus Estonia Georgia Kazakhstan Kyrgyz Republic Latvia Lithuania Moldova Russian Federation Ukraine Uzbekistan	Albania Bulgaria FYR Macedonia Romania Serbia

The impact of liberalization on income inequality is measured by liberalization indices: price liberalization, trade liberalization and forex, large-scale and small-scale privatization indices prepared by European Bank of Reconstruction and Development (EBRD). The indicators are estimated within 1-4.33 values, 1 indicating the little or no progress and 4.33 indicating the successful transition in related issues. All four indices were gathered from Transition Reports of different years prepared by EBRD.

Alongside with liberalization variables, control variables include: GDP per capita growth, inflation, and unemployment rate and natural resources rents as a share of GDP. Dependant variable is the Gini coefficient of the countries over the sample period.

Gini coefficient data was taken from AllGinis Database, which is the largest existing Gini data prepared by economists of World Bank (WB) according to eight original sources: Luxembourg Income Study (LIS), Socio-Economic Database for Latin

America (SEDLAC), Survey of Living Conditions (SILC) by Eurostat, World Income Distribution (WYD), World Bank Europe and Central Asia dataset, World Institute for Development Research (WIDER), World Bank Povcal, and Ginis from individual long-term inequality studies. Some countries have missing observations on this variable, such as Uzbekistan what has only 5 observations, while Poland has full set of Gini coefficient for all time periods over the sample period. Most of the data used in model is consumption-based.

GDP per capita growth rate data are taken from World Development Indicators of World Bank and based on own calculations of WB (National accounts section). GDP per capita growth rate is log of real GDP per capita that is used for the calculation of the growth rate. Inflation rate data were gathered from International Monetary Bank Outlook Database. The inflation measure is based on CPI and is the first difference natural log of the price index mutiplied by 100. The data was collected by IMF experts from National Statistics Offices and Central Bank calculations. Unemployment rate data was also taken from International Monetary Fund Economic Outlook Database which was prepared based on the national statistical data of the countries in the study. Natural resources rents as a share of GDP data shows the percentage indicator and is taken from World Bank World Development indicators (National accounts section).

4.2 Methodology

The data is unbalanced panel dataset with 23 cross-section units and 20 years. panel data analysis studies the behavior of cross section units over time by using pooled cross section time series data set. In panel models, fixed effects and random effects models are widely used estimation methods.

4.2.1 Fixed effects

Fixed effects model (FE) is useful in analyzing the impact of variables for each unit that vary over time while the unobserved variables specific to each unit that do not change over time are not of interest. Another important feature of the fixed effects model is that the time invariant individual characteristics or unobserved effects are allowed to be correlated with other variables that change over time. The model in general can be described as:

$$y_{it} = \beta_i x_{it} + \alpha_i + + u_{it}, \qquad t = 1,2,\ldots T$$

Here, y_{it} and x_{it} is dependent and independent variables of each entity for the i^{th} unit in t period, respectively. α_i is the unobserved effect that is constant during the "*t*" time but varies across units, i.e. all differences between individual units are captured by unknown intercept. The error term is u_{it}. The fixed effects estimation method controls for the unobserved effects between units.

There are two alternatives to estimate the model, the least squares dummy variable estimator and the fixed effects estimator which are equivalent. The basic idea is to remove the unobserved effects of individual units that do not vary over time so that one can assess the net effect of the X_{it} variables and Y_{it}.

4.2.2 Random Effects Model

In random effects model (RE), individual differences are also captured by intercept, but it is also assumed that the differences across units are random and uncorrelated with the explanatory variables. The model is expressed as:

$$y_i = \beta_o + \beta_i x_{it} + (\alpha_{it} + \mu_i)$$

Here, as mentioned above, error term has two components: μ_i, individual error and ε_{it}, random element that vary both over time and across units. The composite error is the sum of two error terms.

This model takes into account the random sampling process by which the data were obtained. Also, this model allows including such time-invariant observed variables as sex, race, place of birth, etc. (Bollen and Brand, 2008).

In both FE and RE models, the dummy variables can also be added to the model to control for the time effects such that D=1 for the specific time and zero otherwise. The error term assumptions of the model are similar to usual error term assumptions: $E(u_{it}) = 0$ zero mean assumption, $\text{var}(u_{it}) = \sigma_u^2$, idiosyncratic errors are uncorrelated, $\text{cov}(u_{it}, u_{is}) = 0$.

The random effects model is estimated by generalised least squares (GLS) estimation method which is the minimum variance estimator.

4.2.3 Fixed vs Random Effects

As mentioned above, the main difference between the FE and RE is that, the latter method requires no correlation between the error component and the regressors. In this respect, we need to check if there is any correlation between individual effects and the regressors in the model, i.e. $corr(\alpha_i, x_{it}) = 0$. For this purpose, Hausman test is applied. The idea underlying this test is that both fixed and random effects models are consistent if there is no correlation between error term and explanatory variables. But, if correlation is present, RE model will not yield consistent estimates while the FE estimator will consistent with true parameter values while increasing the sample

size.[4] Thus, the two estimates will be different. In this context, the Hausman test can be conducted using a joint chi-square test with degrees of freedom equal to be the number of coefficients under the null hypothesis that α_i is uncorrelated with any of the regressors (i.e. the model is RE) against the alternative of FE. If H_0 can be rejected with the probability value less than 0.05, the fixed effects model should be used.

In case of current study, conducted Hausman test indicated the presence of correlation between the error term and explanatory variables, thus, implementation of fixed effects is more efficient and consistent.

4.3 The Model

As mentioned above, since the interest of the study is to capture the effects of liberalization measures on income inequality over sample period, we can assume that country specific characteristics are time-invariant, so we need to control for such factors to get unbiased estimators.

The assessment of income inequality based on the liberalization measures is conducted with the Fixed Effects model, formulated as:

$$y_{it} = \alpha_i + \beta_1 x_{it} + \beta_2 Growthcap_{it} + \beta_3 \log(INFL)_{it} + \beta_4 UNEMP_{it} + \beta_5 NRrents_{it} + u_{it}$$

(eq.1)

Here,

y_{it} – Gini coefficient, dependant variable, where i – country and t – year.

[4] R. Carter Hill, William E. Griffits, Guay C. Lim (2008). Principles of Econometrics, p.404

α_i - (i=1,2,….) unknown intercept for each country;

x_{it} - {pricelib, tradelib, sspriv, lspriv} are independent variables for liberalization measures.

Growthcap$_{it}$ – GDP per capita growth rate, *where i* – country and *t* – year.

Log(INFL)$_{it}$ – inflation rate, where *i* – country and *t* – year.

UNEMP$_{it}$ – unemployment rate, where *i* – country and *t* – year

NRrents$_{it}$ – natural resources rents as a share of GDP;

$\alpha_i, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ - are the parameters to be estimated.

u_{it} - is the error term that varies over cross-section units and time.

In the model, four indices are used alternatively: price liberalization (pricelib), liberalization of trade and forex (tradelib), large-scale privatization (lspriv) and small-scale privatization (sspriv). Their signs are expected as following: price liberalization, trade liberalization and forex, and large-scale privatization indices are expected to increase income inequality, while small-scale privatization is expected to decrease income inequality.

The dependant variable Gini coefficient which is selected as a measure of income inequality is a comprehensive income distribution measure, ranging from 0 to 100, representing perfect equality and perfect inequality respectively.

Gini coefficient is a widely used income distribution measure, while it is convenient for calculations and this metric meets the four main principles that any inequality metric must satisfy: transfer principle, scale independence, anonymity principle and population independence (Charles-Coll, 2011).

Alongside with obvious advantages, this indicator also has some drawbacks: Gini coefficient can be same for different distribution sets, as shape of income distribution changes, the area that is considered as Gini coefficient may remain the same; Gini coefficient is a point estimate, while it is calculated for the certain life period of a person and cannot capture the future income changes and it cannot be averaged for getting a combined income inequality parameters. For a country with different income distribution performances, Gini can be calculated for different regions, but cannot be averaged, so, it must be calculated for whole country separately (Charles-Coll, 2011).

But, considering the advantages and drawbacks of Gini coefficient, we decided to use this indicator, while more data is available for Gini coefficient rather than rich/poor ratio and this coefficient satisfies the principles of a metric of income inequality that sufficiently varies over time.

First control variable is GDP per capita growth rate, which also helps us to assess the impact of economic growth on income distribution. There is no consensus regarding the direction of the relationship between economic growth and income inequality and several authors still argue on this issue (Milanovic, 2010; Ivaschenko, 2003). So, there are no exact expectations regarding the impact of GDP per capita growth rate on Gini coefficient.

Inflation is another control variable included in the model. The impact of inflation on income inequality is widely discussed among scholars, but no unambiguous correlation between these two indicators is found. While economic theory and bulk of researches exhibit a positive correlation between inflation and income inequality,

some researchers argue that this relationship may be related to both on the degree of inflation rate and government monetary policy conducted to fight inflation (Gally and van der Hoeven, 2001). The sign of log form of inflation rate is expected as positive, e.g. increasing Gini coefficient according to suggestions of majority of researchers.

Impact of unemployment rate on income inequality is not widely investigated in economic literature. Some researches show weak or non-significant correlation between unemployment rate and income distribution. However, while high unemployment rate causes economic deprivation and social exclusion and this phenomenon was observed in all transition countries, we consider it as a determinant of income distribution. Therefore, in the model, the impact of unemployment rate on Gini coefficient is expected to be positive.

The last control variables in the model are natural resources rents and industry value added as a share of GDP to measure the effect of change in economic structure. While the impact of natural resources can have a negative effect on income distribution due to the concentration of these resources and land in hands of top elites conventionally according to several scholars, the ownership of such resources can play a prominent role in redistributive policy and hence, may affect income inequality in opposite way. Also, the impact of industry value added is expected to decrease income inequality. Natural resources rents and industry value added as a share of GDP also allows us to examine the Kuznet's theory regarding the impact of industrialization and economic progress on income distribution.

Chapter 5

EMPIRICAL RESULTS AND DISCUSSIONS

5.1 Empirical results

The inclusion of all the transition indicators together leads to inefficient estimates due to the high correlation between them (See Appendix D). Therefore, the indices were included in the model alternatively, thus four separate models were created. Moreover, industry value added as a share of GDP is not included in model due to insignificance of this variable.

The final models are represented as following:

Model 1:

$$GINI_{it} = \alpha_i + \beta_1 Growthcap_{it} + \beta_2 \log(INFL)_{it} + \beta_3 UNEMP_{it} + \beta_4 PRICELIB_{it} + \\ + \beta_5 NRrents_{it} + \beta_{ik} D_t + u$$

Model 2:

$$GINI_{it} = \alpha_i + \beta_1 Growthcap_{it} + \beta_2 \log(INFL)_{it} + \beta_3 UNEMP_{it} + \beta_4 TRADELIB_{it} + \\ + \beta_5 NRrents_{it} + \beta_{ik} D_t + u_{it}$$

Model 3:

$$GINI_{it} = \alpha_i + \beta_1 Growthcap_{it} + \beta_2 \log(INFL)_{it} + \beta_3 UNEMP_{it} + \beta_4 LSPRIV_{it} + \\ + \beta_5 NRrents_{it} + \beta_{ik} D_t + u_{it}$$

Model 4:

$$GINI_{it} = \alpha_i + \beta_1 Growthcap_{it} + \beta_2 \log(INFL)_{it} + \beta_3 UNEMP_{it} + \beta_4 SSPRIV_{it} + \\ + \beta_5 NRrents_{it} + \beta_{ik} D_t + u_{it}$$

In these models,

$GINI_{it}$ – Gini coefficient

$PRICELIB_{it}$ –price liberalization index;

$TRADELIB_{it}$ – trade liberalization index;

$LSPRIV_{it}$ – large-scale privatization index;

$SSPRIV_{it}$ – small-scale privatization index;

$Growthcap_{it}$ – GDP growth rate per capita;

$Log(INFL)_{it}$ – log form of inflation rate;

$UNEMP_{it}$ – unemployment rate;

$NRrents_{it}$ – natural resources rents as a share of GDP; and

D_t – year dummies;

u_{it} – error term; i – country index; t – time period index;

The regressions were run by using fixed effects analysis tool, which is OLS estimation with robust standard errors to control for heteroskedasticity conducted in STATA software.

The correlation matrix is given in Appendix 1. In matrix, it is clear that the correlation between control independent variables and transition indices are not at critical level, except the correlation coefficient between *log(INFL)* and *SSPRIV*. But, excluding inflation rate from the model did not cause significant changes in the estimates of the coefficients of the explanatory variables. Moreover, exclusion of this variable contradicts the economic theory as inflation is an important variable that redistributes the income. Therefore, the exclusion of this variable could lead to

Table 13. Fixed Effects model estimation results

Dependant variable: GINI				
Explanatory variable	Model 1	Model 2	Model 3	Model 4
Growthcap	0.059 (0.076)		0.0557 (0.071)	0.079 (0.053)
log(INFL)	1.984*** (0.5686)		1.8892*** (0.4920)	1.413*** (0.457)
UNEMP	0.1987** (0.949)		0.1879** (0.0810)	0.133*** (0.055)
PRICELIB	1.372*** (0.292)	-	-	-
TRADELIB	-	-0.2972 (0.5769	-	-
LSPRIV	-	-	-0.5439 (0.7122)	-
SSPRIV	-	-	-	-3.665*** (0.896)
NRrents	-0.115*** (0.045)	-0.1177** (0.0460)	-0.1184** (0.0499)	-0.123*** (0.037)
C	23.366*** (1.667)	30.4291*** (2.2877)	30.9146*** (2.1706)	44.366*** (3.255)
D1990	-	-9.8143*** (1.6431)	-10.3033*** (1.6602)	-17.922*** (2.406)
D1991	-5.228** (2.963)	-7.4896** (2.7744)	-8.0667** (3.0175)	-15.182*** (3.063)
D1992	-4.166*** (0.738)	-5.7404*** (1.4335)	-6.1814*** (1.2172)	-12.761*** (2.657)
D1993	-6.352*** (1.637)	-6.8122*** (1.4472)	-7.0900*** (1.6489)	-10.059*** (1.804)
D1994	-1.865 (1.494)	-2.6282 (1.6033)	-2.2349 (1.4915)	-4.632*** (1.649)
D1995	0.149 (1.512)	-0.3827 (1.4659)	-0.6917 (1.5087)	-1.765 (1.308)
D1996	-0.765 (0.872)	-1.1038 (0.6682)	-1.3215 (0.6904)	-1.513** (0.6001)
D1997	-1.005 (0.896)	-1.2597 (0.8534)	-1.3227 (0.8573)	-1.618732** (0.773)
D1998	0.041 (0.993)	-0.6896 (0.9935)	-0.0868 (0.9997)	-0.317 (1.027)
D2006	1.870** (0.902)	2.0168** (0.8942)	1.9847** (0.8835)	2.172** (0.857)
D2007	0.755 (0.614)	0.7828 (0.6316)	0.8511 (0.6212)	1.010* (0.568)
D2008	-0.279 (0.936)	-0.2316 (0.8077)	-0.1418 (0.7901)	-0.0501 (0.728)
D2009	2.888** (1.334)	2.7012** (1.2224)	2.8085*** (0.4928)	2.159* (1.123)
Number of observations: within R-squared: between R-squared: Overall R-squared F-stat (p-value): corr (u_i,x_i) ρ (variance due to differences across panels)	255 0.2763 0.0088 0.0338 0.0000 -0.3872 0.7259	255 0.3054 0.0144 0.0355 0.0000 -0.3752 0.7229	255 0.3037 0.0112 0.0421 0.0000 -0.3404 0.7147	255 0.3807 0.0169 0.0161 0.0000 -0.5215 0.7647

Note: Standard errors given in paranthese are heteroskedasticity-robust s.e.
Significance levels are marked: 1% - (***), 5% - (**) and 10% - (*) stars.

omitted variable bias. Nevertheless, inclusion of inflation improved the significance of the explanatory variables. Results are given in Table 13 for all four models.

In Model 1, dummy variable for 1990 year is not included due to the possibility of multicollinearity problem. Including dummy variable for 1990 year turned price liberalization index coefficient to be insignificant, thus this dummy variable was excluded.

Two liberalization indices: *TRADELIB* and *LSPRIV* exhibit no significant impact on *GINI*. Another two liberalization indices and the control variables except per capita growth are highly significant. Regarding the signs of the liberalization indices, *PRICELIB* increases *GINI*, e.g. price liberalization measure worsened income distribution in the selected 23 countries for sample period of 1990-2009 years. However, *SSPRIV* and *GINI* had a negative relationship, e.g. small-scale liberalization measures improved income distribution during this period in selected countries. Control variables *log(INFL), UNEMP* and *NRrents* are highly significant between 1% and 5% significance level. While *log*(*INFL)* and *UNEMP* rate had positive relationship with *GINI* as expected. *NRrents* affected GINI negatively, e.g. as this share of the natural resources rents increases, Gini coefficient decreases.

Also, in all four models, some of year dummies included in model exhibited high significance. D1990, D1991, D1992, D1993 year dummies are significant between 1% and 10% significance level and show negative impact on GINI, e.g. decreases GINI, whereas D2006 and D2009 dummy variables are both significant at 5% and increases GINI.

F-statistic values, showing the overall significance of explanatory variables are highly significant in both models.

5.2. Discussions

According to the above mentioned results, price liberalization index and small-scale privatization indices justify the pre-estimated signs and fit the theory very well. This outcome is sound with theoretical considerations and findings of previously conducted researches reviewed in Chapter 3 (Flemming and Mickelwright, 1999; Ivaschenko, 2002; Milanovic, 2010). Abolishment of price control and subsidies made the quintile with lowest income share more vulnerable and they were exposed to impact of economic fluctuations more in comparison with other quintiles.

In contrary, small-scale privatization affected Gini coefficient negatively, e.g. these measures improved income distribution, possibly by contributing to the income share of middle social stratums. The reason for it can be that, small-scale privatization is associated with case-by-case privatization (in contrary to mass privatization, which implies the privatization of assets in large volumes and in short period of time) and in this process, mainly small and middle entrepreneurship entities are privatized. This method was mainly implemented in Eastern Europe countries (especially, in Czechoslovakia). As statistical data shows, these countries succeeded to decrease income disparities in later years of transition period, which can be associated with large implementation of small-scale privatization.

In contrary, trade liberalization index is found to have no significant impact on income distribution in these countries. It can be explained with the fact that, the transition countries were not closed economies and were trading with each other.

With the beginning of transition, the trade partners of these countries have changed, but the volumes and openness level have merely changed. Moreover, the degree of liberalization differ in Eastern Europe and Former Soviet Union, such that, the latter is subject to import monopolies and control over the volume and range of imported goods by specific groups or persons. So, the impact of trade liberalization on income distribution could not exhibit an unambiguous result for all countries. But this issue must be the subject for further investigations.

Also, large-scale privatization had no significant impact on income distribution in transition countries. Again, the process has differed between the regions. Central Eastern Europe countries preferred both small-scale and large-scale privatization methods and mainly implemented this method, Former Soviet Union countries were mainly involved in large-scale privatization methods such as voucher privatization. In FSU, this privatization method was implemented to large state enterprises and the process of their privatization was not fully achieved such that, in many of them, the state holds the control share of the enterprises. In contrary, in Central-Eastern European countries, both methods were fully implemented and could have had a significant impact on income distribution. But as the model estimation was conducted for all 23 countries, the results did not exhibit significant impact of large-scale privatization on income distribution. The examination of the relationship between the large-scale privatization and income distribution may have a significant outcome if it is estimated for regions separately, which also must be further investigated.

Inflation and unemployment rates effects are also sound with previously conducted studies and both increase the income inequality. As mentioned in Chapter 3, inflation

mainly affected the population with fixed income, mainly pensioners and individuals with labor income, which constitute the population fraction with relatively low income shares. The magnitude of inflation in first years of transition was very high, so any adjustments for inflation were outweighed by hyperinflation.

Unemployment was an expected phenomenon for transition period, but its magnitude and scale could not be predicted at the beginning. High unemployment rates deprived many people, especially with low income, from their main source of income and thus, increased the income disparities between different population groups. The findings of study comply with these theoretical considerations made by previous studies (Mikhalev, 2003; Simai, 2006).

As a result, it is revealed that natural resources rents as a share of GDP increases the income inequality. This finding is conflicting with bulk of studies which assume that heavy reliance of natural resource rents retards the industrial development of economy and thus, contribute to higher income inequality. Moreover, concentration of natural resources and land in hands of few owners makes income disparities more severe. But, the impact of natural resources share as a share of GDP on income inequality can be a matter of ownership and redistributive policies. It can be proposed that the effect of natural resources can be probably the result of state ownership on natural resources production in these countries. In this case, the profits earned from this sector can contribute to government expenses and in turn, targeted poor members of society can benefit from them via redistributive policies.

The effect of GDP per capita growth rate on income inequality is found to be insignificant and also sound with bulk of studies which exhibit weak or no significant relationship between these two indicators.

The year dummy variables included in model is expected to cover the events that are unobserved or impossible to measure in order to assess the impact of such event on income inequality. The results of study showed that the first years of transition are associated with events that reduced income inequality in these countries that are uncovered by the model variables. This effect can probably be explained by the increase of pensions and social benefits in transition economies for mitigating the negative effect of this period. Milanovic (1995) indicates that pensioners are the only group that is not deprived by transition period and their pensions are increased.

Another reason can be the land reforms implemented during the early 1990's throughout CEE and later in Balkan States, Armenia, Georgia and Moldova. At these years, the lands were privatized by population and countrymen. As a result, the households heavily relied on home-produced food to some extent, which played income-equalizing role (Bezemer 2006).

Significance of dummies for 2006 and 2009 years can be explained with the possible impact of global financial crisis.

However, the overwhelming effect of price liberalization, inflation and unemployment outweigh such measures and Gini coefficient kept increasing despite these measures.

Chapter 6

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusions

This study aimed to assess the impact of macroeconomic changes and transition period measures on income inequality in transition countries. For this purpose, focus was on liberalization measures such as price liberalization, trade liberalization and forex, and different privatization methods.

Review of economic changes in transition period indicated that, transition countries witnessed deep economic recession in the beginning of this period. Economic growth declined and even transformed to negative numbers. Hyperinflation was observed. Unemployment problem occurred and minimum wages have fallen. Alongside with major macroeconomic changes, income inequality exhibited significant increase during this period. Although this trend was same for all countries, trend differed across the regions of former post-socialist bloc. While, Central-Eastern Europe countries exhibited moderate increases in income inequality, around 5-6 units, this increase in Former Soviet Union and Southern-Eastern Europe countries were significantly higher: 8-10 units. In later years, some countries succeeded to improve income distribution and decreased income inequality, but level is still high and worth to be analyzed in detail.

Determinants of income inequality are widely discussed in economic literature. These determinants can be characterized as personal correlates, natural resources, economic growth, industrialization, etc. However, in the literature regarding the transition countries, economic growth, inflation and liberalization policies are considered as main determinants of inequality.

For assessment of impact of transition period changes on income inequality, liberalization indices such as price liberalization, trade liberalization and forex, large-scale and small-scale privatization are chosen. Also, macroeconomic variables GDP per capita growth rate, inflation, unemployment, natural resources rents and industrial value added as a share of GDP were included in model as control variables. As dependant variable, Gini coefficient was selected. Due to high correlation between transition indices, four separate models were estimated. Trade liberalization and forex index and large-scale privatization index did not exhibit a significant impact on income inequality. Moreover, industry value added as a share of GDP did not exhibit any significant impact on income inequality, thus, was excluded from the models.

The findings show that, price liberalization had increased the income inequality, whereas small-scale privatization reduced income inequality in selected countries during the observed period. Inflation rate and unemployment rate worsened income distribution, as expected. Natural resources rents as a share of GDP showed an improving impact on income distribution. GDP per capita growth rate exhibited no significant impact on income distribution in estimated models.

The contribution of this thesis work is that, impact of liberalization measures on income inequality are estimated separately and with relevantly wide dataset for Gini coefficient. In previous works, these indices were included as an average of all transition indicators, thus it was impossible to reveal which of them has a salient impact on income distribution.

6.2 Recommendations

The study showed that macroeconomic stability played significant role on income inequality for selected countries in given period. Thus, economic policies targeting the reduction of unemployment rate and stabilization of inflation must be considered in detail. Moreover, during the implementation of liberalization measures, the possible outcomes and negative sides of the process must be foreseen and analyzed in order to avoid the deprivation of economic and social life of citizens and necessary measures must be taken in order to outweigh the negative impact of liberalization policies.

REFERENCES

Albanesi, S (2006). Inflation and Inequality. *Journal of Monetary Economics*, 15 February.

AllGinis Database, updated in April, 2013. *World Bank.*

Balaz V. and Williams A.M (1999). Capital mobility in transition countries of Central Europe: macroeconomic performance factors and structural policies. *Department of Geography, University of Exeter*.

Berry, A. (2013) "Inequality, poverty and Employment: what we know". *Revue Interventions économiques,* 47.

Besley T., Dewatripont M. and Guriev S. (2010). Transition and Transition Impact: a review of concept and and Implications for EBRD. *European Bank of Reconstruction and Development*.

Birdsall, N. (1998). "Life is unfair: Inequality in the world", *Foreign Policy, 112, 76-83*.

Boissiere et. al. (1985). Earnings, schooling, ability and cognitive skills. *American Economic Review 75 (5):* 1016-1030.

Bollen, Kenneth A. and Band Jennie E. (2008). A general panel model with random and fixed effects: a structural equations approach. *Published in final edited form as: Soc Forces.* 2010 September; 89(1): 1–34.

Cornia, Giovanni Andrea (1996). "Transition and Income Distribution: theory, evidence and initial preparation". *Research in Progress, UNU/WIDER*.

Cornia, G. A. (1999). Liberalization, Globalization and Income distribution. *UNU/WIDER*, Helsinki.

Cornia G.A. (2002). The Impact of Liberalization and Globalisation on Income Inequality in Developing and Transitional Economies. *CESIFO Working Paper, No.834, Category 5*.

Cornia G. A. (2011) Economic Integration, Inequality and Growth: Latin America vs. the European economies in transition. *DESA Working Paper No.101*.

Davies, James B., Sandstrom S., Shorrocks Antony B., Wolff Edward N. (2009). The level of Distribution of Global Household Wealth. *NBER Working Paper Series*.

Easterly, W. (November, 2007). "Inequality does cause underdevelopment", *Journal of Development Economics, Vol.84, Issue 2, 755-776*.

Flemming J. and Micklewright J. (1999) "Income distribution, economic systems and Transition". *Innocenti Occasional Papers, Economic and Social Policy Series, No. 70*. Florence: UNICEF International Child Development Centre,.

Galli R. and van der Hoeven R. (2001). Is inflation bad for income inequality: The importance of initial rate of inflation. *EMPLOYMENT PAPER*, 2001/29.

Goderia B. and Malone S.W. (2009). Natural Resource Booms and Inequality: Theory and Evidence. *MPRA Paper No. 17317*.

Gourdon, Julien N. Mayestre and de Melo J. (2006). "Openness, inequality and poverty: endowments matter", *World Bank Policy Research Working Paper 3981*.

Gruen C. and Klasen S. (2002). Growth, Income Distribution and Well-Being in Transition Economies. *Department of Economics, University of Munich*.

Grimalda G. and Meschi E. (2008). "Accounting For Inequality in Transition Economies: *An Empirical Assessment Of Globalisation, Institutional Reforms, And Regionalisation. CSGR working paper 243/08*.

Gylfason T. and Zoega G. (2002). Inequality and Economic Growth: Do Natural Resources Matter? *CESifo Working Paper, No. 712 (5)*.

Hofman B. and Koop M. J. (1990). Monetary overhang and the dynamics of prices, exchange rates, and income in the transition to a market economy. *Kiel Working Papers, N. 418*.

Holscher J. (2009). 20 Years of Transition – Success and Failures. *University of Brighton*. Prepared for conferences at EU Institute of Japan, Hitotsubashi University. Tokyo and Institute of Economic Research, Kyoto University (KIER).

Inglehart, R. (1997). “Modernization and Postmodernization: Cultural and political change in 43 economies”.

Ivaschenko O. (2002). “Growth and Inequality: Evidence from Transitional Economies”. CESifo *Working Paper No. 746*.

Ivlevs, A. (2013) “Economic insecurity in Transition: a primary commodity perspective”. *Review of Income and Wealth 2013DOI: 10.1111/roiw.12038*.

Kaldaru H. and Trasberg V. (2001). Welfare Disparities in Transition Economies: Case of Estonia. *41st Congress of European Regional Science Association*.

Kuznets, S. (1963). Quantitative Aspects of the Economic growth of nations”. *Economic Development and Cultural Change*, University of Chicago Press, Chicago.

Li H. and Zou H. (2002). Inflation, Growth and Income Distribution: A Cross-Country Study. *Annals of Economics and Finance 3, 85-101*.

Meschi E. and Marco V. (July, 2007). Trade openness and income inequality in Developing countries. *CSGR Working Paper Series, 232/07*.

Mikhalev V. (2000). Inequality and Transformation of Social Structures in Transitional Economies. *UNU/WIDER project on Income Distribution and Social Structure during the Transition*, Oxford Policy Management, Ltd, UK.

Milanovic B. (1995). Poverty, Inequality and Social Policy in Transition Economies. *Policy Research Working Paper, the World Bank.*

Milanovic B. (February, 1998). Income inequality and Poverty during the Transition from Planned to Market Economy. *The World Bank*.

Milanovic B. (2009). Global Inequality and the Global Inequality Extraction Ratio: The Story of Past Two Centuries. Policy Research Working Paper, World Bank.

Milanovic B. and Ersado L. (May, 2010). Reform and Inequality during the Transition. An Analysis Using Panel Household Survey Data, 1990-2005. *Working Paper No. 2010/62, UNU-WIDER.*

Mileva E. (2008). The Impact of Capital Flows on Domestic Investment in Transition Economies. *European Central Bank, Working Paper Series, N 871*.

Mitra P. and Yemtsov, Ruslan. (September, 2006). Increasing Inequality: is there more to come? *World Bank Policy Research Working Paper 4007*.

Nellis J. (1999). Time to Rethink Privatization in Transition Economies? International Finance Corporation, *Discussion Paper IFD 38*.

Olinto P. and Saavedra J. (2012). An Overview of Global Income Inequality Trends. *Inequality in Focus, World Bank.*

Ortiz I. and Cummins M. (2011). Global Inequality: Beyond the Bottom Billion. *Social and Economic Policy Working Paper, UNICEF*.

Privatization in Eastern Europe: Legal, economic and social aspects. Edited by Smith H. and Vratislav P. (1994). *Parker school of Foreign and Comparative Law*.

Ravallion, M. (2001). Growth, Inequality and Poverty. *Policy Research Working Paper, World Bank*.

Amartya S. (2001). *"If It's Fair, It's Good: 10 Truths About Globalization,"* International Herald Tribune, *July 14-15.*

Simai M. (2006). "Poverty and Inequality in Eastern Europe and CIS Transitional Economies". *DESA Working Paper No. 17 ST/ESA/2006/DWP/17*.

Stewart, F. (1999). "Income distribution and Development". QEH Working Paper Series - QEHWPS37,.

Transition Economies: An IMF Perspective on Progress and Prospects. International Monetary Fund, November 3rd, 2000.

Varblane U. and Vahter P. (2005). Analysis of economic convergence process in the transition countries. Tartu University Press.

Wade, R. H. (2001). The Rising Inequality of World Income Distribution. *Finance and Development, IMF December 2001, Volume 38, Number 4*.

Yudaeva, K. (2002). Globalization and Inequality in CIS Countries: Role of Institutions. Working Papers w0025, *Centre for Economic and Financial Research (CEFIR).*

APPENDICES

APPENDIX A: Inflation Rates in Selected Transition Countries

Table 14.

	1993	**1995**	**1997**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Central-Eastern Europe																
Croatia	1517.3	2.0	3.7	4.0	4.6	3.8	1.7	1.8	2.0	3.3	3.2	2.9	6.1	2.4	1.0	2.3
Czech Republic	n/a	n/a	8.6	2.1	3.8	4.7	1.9	0.1	2.8	1.8	2.5	2.9	6.3	1.0	1.5	1.9
Hungary	22.5	28.3	18.3	10.0	9.8	9.2	5.3	4.6	6.8	3.6	3.9	7.9	6.1	4.2	7.1	8.3
Poland	35.3	27.9	14.9	7.3	10.1	5.5	1.9	0.8	3.5	2.2	1.2	2.5	4.4	3.5	2.6	4.3
Slovak Republic	n/a	9.9	6.0	10.5	12.2	7.1	3.5	8.4	7.4	2.8	4.3	1.9	3.9	0.9	0.7	4.1
Slovenia	31.9	13.7	8.4	6.2	8.8	8.4	7.5	5.6	3.6	2.5	2.5	3.6	5.7	0.9	1.8	1.8
Former Soviet Union																
Armenia	3731.8	176.7	14.0	0.6	-0.8	3.1	1.1	4.7	7.0	0.6	3.0	4.6	9.0	3.5	7.3	7.7
Belarus	1190.3	709.3	63.8	293.7	168.6	61.1	42.6	28.4	18.1	10.3	7.0	8.4	14.8	13.0	7.7	53.2
Estonia	n/a	29.0	11.2	3.3	4.0	5.8	3.6	1.3	3.0	4.1	4.4	6.6	10.4	-0.1	2.9	5.1
Georgia	n/a	162.7	7.0	19.1	4.0	4.7	5.6	4.8	5.7	8.3	9.2	9.2	10.0	1.7	4.9	3.9
Kazakhstan	1662.3	176.3	17.4	8.4	13.3	8.4	5.9	6.5	6.9	7.5	8.6	10.8	17.1	7.3	7.8	16.6
Kyrgyz Republic	1086.2	43.5	23.4	35.9	18.7	6.9	2.1	3.1	4.1	4.3	5.6	10.2	24.5	6.8	-1.2	4.2
Latvia	109.2	25.0	8.1	2.1	2.6	2.5	2.0	2.9	6.2	6.9	6.6	10.1	15.3	3.3	1.2	4.1
Lithuania	n/a	n/a	n/a	n/a	1.1	1.6	0.3	-1.1	1.2	2.7	3.8	5.8	11.1	4.2	1.5	3.9
Moldova	788.5	30.2	11.8	39.3	31.2	9.6	5.2	11.7	12.4	11.9	12.7	12.4	12.7	0.0	7.4	7.7
Russia	874.6	197.5	14.8	85.7	20.8	21.5	15.8	13.7	10.9	12.7	9.7	9.0	14.1	11.7	6.9	8.4
Ukraine	4734.9	376.7	15.9	22.7	28.2	12.0	0.8	5.2	9.0	13.5	9.1	12.8	25.2	15.9	9.4	8.0
Uzbekistan	534.2	304.6	70.9	29.1	25.0	27.3	27.3	11.6	6.6	10.0	14.2	12.3	12.7	14.1	9.4	12.8

Table 14. *(Continued)*

Southern-Eastern Europe																
Albania	85.0	7.8	33.2	0.4	0.0	3.1	5.2	2.3	2.9	2.4	2.4	2.9	3.4	2.3	3.5	3.4
Bulgaria	72.8	62.1	1061.2	2.6	10.3	7.4	5.8	2.3	6.1	6.0	7.4	7.6	12.0	2.5	3.0	3.4
FYR Macedonia	338.7	15.8	2.6	-0.3	6.4	5.5	2.2	1.2	-0.4	0.5	3.2	2.3	8.4	-0.8	7.1	8.5
Romania	256.1	32.3	154.8	45.8	45.7	34.4	22.5	15.4	11.9	9.0	6.6	4.8	7.8	5.6	6.1	5.8
Serbia	n/a	n/a	n/a	41.1	70.0	80.6	8.9	2.9	10.6	16.2	10.7	6.9	12.4	8.1	6.2	11.1

Source: IMF World Outlook Database, IMF

APPENDIX B: Unemployment Rates for Selected Transition Countries

Table 15.

Country Name	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Central-Eastern Europe																
Croatia	14.8	14.5	9.9	13.6	16.1	15.8	14.8	14.3	13.8	12.7	11.1	9.4	8.3	9.1	12.2	13.7
Czech Republic	n/a	4.0	4.8	8.8	8.8	8.2	7.3	7.8	8.3	7.9	7.1	5.3	4.4	6.7	7.3	6.7
Hungary	11.3	10.2	8.7	6.5	6.0	5.6	5.9	5.5	6.3	7.3	7.5	7.7	8.0	10.5	10.9	11.0
Poland	16.4	13.4	11.3	13.8	16.1	18.3	19.9	19.6	19.0	17.7	13.8	9.6	7.1	8.2	9.6	9.6
Slovak Republic	12.7	13.7	11.9	16.5	18.9	19.5	18.8	17.7	18.4	16.4	13.5	11.2	9.6	12.1	14.5	13.6
Slovenia	8.6	7.0	6.9	7.4	6.7	6.2	6.3	6.7	6.3	6.5	6.0	4.9	4.4	5.9	7.3	8.2
Former Soviet Union																
Armenia	n/a	n/a	n/a	n/a	n/a	38.4	35.3	31.2	31.6	31.2	27.8	28.7	16.4	18.7	19.0	19.0
Belarus	1.4	2.9	2.8	2.1	2.1	2.3	2.9	3.1	1.9	1.5	1.2	1.0	0.8	0.9	0.7	0.6
Estonia	6.5	9.7	9.6	12.2	13.7	12.6	10.3	10.0	9.7	7.9	5.9	4.7	5.5	13.8	17.3	11.7
Georgia	n/a	n/a	7.6	12.6	10.3	11.1	12.6	11.5	12.6	13.8	13.6	13.3	16.5	16.9	16.3	15.1
Kazakhstan	n/a	11.0	13.0	13.5	12.8	10.4	9.3	8.8	8.4	8.1	7.8	7.3	6.6	6.6	5.8	5.4
Kyrgyz Republic	n/a	5.7	5.7	7.2	7.5	7.8	12.5	9.9	8.5	8.1	8.3	8.2	8.2	8.4	8.6	7.9
Latvia	7.0	7.0	15.2	14.3	14.4	13.1	12.0	10.6	10.4	9.0	6.8	6.1	7.5	16.9	18.7	16.2
Lithuania	n/a	n/a	n/a	14.6	16.4	17.4	13.8	12.4	11.4	8.3	5.6	4.3	5.8	13.7	17.8	15.2
Moldova	2.9	14.4	12.0	11.1	8.5	7.3	7.3	7.9	8.1	7.3	7.4	5.1	4.0	6.4	7.4	6.7
Russian Federation	5.3	8.5	10.8	13.0	10.6	8.9	8.0	8.6	8.2	7.6	7.2	6.1	6.4	8.4	7.5	6.6
Ukraine	n/a	14.8	9.8	11.9	11.5	10.8	9.6	9.1	8.6	7.2	6.8	6.4	6.4	8.8	8.1	7.9
Uzbekistan	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.4	0.3	0.2	0.2	0.1	0.2	0.2	0.2

Table 15. *(Continued)*

Country Name	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Southern-Eastern Europe																
Albania	22.3	12.9	14.9	18.4	16.8	16.4	15.8	15.0	14.4	14.1	13.8	13.2	12.5	13.6	13.6	13.3
Bulgaria	15.8	11.4	14.0	13.8	18.1	17.5	17.4	13.9	12.2	10.2	9.0	6.9	5.7	6.9	10.3	11.4
FYR Macedonia	n/a	n/a	36.1	32.4	31.7	30.5	31.9	36.7	37.2	37.3	36.0	34.9	33.8	32.2	32.1	31.4
Romania	9.2	9.9	7.9	11.5	7.2	6.6	8.4	7.0	8.1	7.2	7.3	6.4	5.8	6.9	7.3	7.4
Serbia	n/a	n/a	12.3	13.3	12.1	12.2	14.5	16.0	19.5	21.8	21.6	18.8	14.7	17.4	20.0	24.4

Source: IMF World Outlook Database, IMF

APPENDIX C: GINI Coefficient for Selected Transition Countries

Table 16.

Country Name	1990	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Central-Eastern Europe															
Croatia	22.1	n.a.	n.a.	n.a.	27.2	31.3	31.3	n.a.	n.a.	28.8	n.a.	n.a.	n.a.	30.3	n.a.
Czech Republic	19.7	25.9	21.5	27.6	n.a.	28.1	n.a.	27	n.a.	27.5	26.7	n.a.	n.a.	25.3	n.a.
Hungary	n.a.	22.5	31.5	31.9	30.3	31.6	31.2	26.8	31.1	30	31	n.a.	31.2	27.4	n.a.
Poland	25.5	28.2	34.6	34.7	32.3	34.7	36	33.4	34.9	35.8	34.5	34.1	34	32.9	34.1
Slovak Republic	17.8	n.a.	17.8	20	23.4	n.a.	n.a.	n.a.	n.a.	29.1	27.1	27.7	28.1	24.7	26
Slovenia	n.a.	24	24.3	31.4	30	33.3	32.7	27.8	25.8	27.6	27.4	29.1	29.6	25.5	26.4
Former Soviet Union															
Armenia	26.9	n.a.	62.1	43.1	35	n.a.	30.4	29.6	26.2	25.7	29.6	32.8	30.2	26.3	n.a.
Belarus	23.3	20.2	28.6	29.7	32.2	29.8	27.8	26.6	n.a.	n.a.	28	28.7	28.7	26.6	n.a.
Estonia	24	38.3	37.4	33.5	34.9	36.2	37.9	39.2	36.3	35.4	n.a.	n.a.	n.a.	30.1	n.a.
Georgia	25.3	n.a.	n.a.	38.5	40.4	41.1	39	38	39.3	40.6	39.9	39.4	39.4	39	n.a.
Kazakhstan	23.6	31.9	n.a.	n.a.	n.a.	n.a.	32.3	37.7	29.5	32.3	27.3	30.8	30.9	26.7	n.a.
Kyrgyz Republic	22.6	42.8	n.a.	n.a.	n.a.	31.4	35	28.7	28.7	34.8	27.9	38.7	33.4	34.5	36.2
Latvia	24	24.8	32	32.6	33.1	n.a.	35.8	n.a.	35.4	36.4	n.a.	n.a.	35	36.3	36.2
Lithuania	24.8	n.a.	30.8	n.a.	33.1	33.2	33	32.4	29.1	35.3	35.1	n.a.	n.a.	33.6	n.a.
Moldova	26.7	n.a.	37.2	42.1	39	38.1	37.4	37.2	34.9	35	36.3	36.1	35.3	31.1	34
Russian Federation	25.9	36	45.2	37.8	36.7	44.7	36.9	36.9	37.3	37.1	38.4	42.1	43.7	41.7	40.1
Ukraine	n.a.	n.a.	42.8	31.4	30	33.3	32.7	27.8	25.8	27.6	27.4	29.1	29.6	25.5	26.4
Uzbekistan	31.5	33.1	n.a.	n.a.	n.a.	28	n.a.	32	35.2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Table 16. *Continued*

Country Name	1990	1993	1995	1997	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
SEE															
Albania	n.a.	n.a.	n.a.	28.6	n.a.	n.a.	n.a.	29.4	n.a.	31.1	31.7	n.a.	n.a.	30.4	n.a.
Bulgaria	22.6	33.3	32	36.1	33	33.1	33.6	35.1	27.2	n.a.	29.4	n.a.	28.2	36.2	n.a.
FYR Macedonia	n.a.	n.a.	n.a.	28.2	30.6	33	32.4	41.2	35.7	41.1	39.1	42.8	n.a.	39.5	43.2
Romania	22.9	n.a.	34.1	30.4	29.4	31.3	39.5	32	31.5	37.5	29.7	32.1	37.3	30	n.a.
Serbia	n.a.	43.8	29.9	37.5	29.8	29.8	37.1	30.1	27.4	30.4	30.3	29.7	29.4	27.5	27.8

APPENDIX D: Correlation Matrix of Variables

Table 17.

	Growthcap	logINFL	UNEMP	PRICELIB	TRADELIB	SSPRIV	LSPRIV	NRrents
Growthcap	1.0000							
log(INFL)	-0.4204	1.0000						
UNEMP	0.1275	-0.3811	1.0000					
PRICELIB	0.3086	-0.4603	0.3407	1.0000				
TRADELIB	0.2146	-0.5694	0.3293	0.7564	1.0000			
SSPRIV	0.3740	-0.6356	0.2455	0.6141	0.7308	1.0000		
LSPRIV	0.3143	-0.5370	0.2015	0.6705	0.7468	0.7951	1.0000	
NRrents	0.0701	0.1359	-0.2146	-0.1606	-0.3409	-0.0264	-0.0372	1.0000