PACE OF GLOBALIZATION AS A DETERMINANT OF HUMAN DEVELOPMENT IN THE DEVELOPED MARKET AND TRANSITION ECONOMIES

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Abstract

There has been no shortage of papers explaining why globalization may have adverse, insignificant, or even beneficial impacts on income or social inequality. Surprisingly, the empirical reality remains almost a mystery. In this paper, the very recent data on income inequality and social inequalities (in the sense of fair access to health care and education) have been used to examine this controversial issue. Since these data do not come yet in a satisfactorily long time series, the cross-sectional analysis remains the only option for the research. On the other hand, the process of globalization has been quantified by the Swiss Economic Institute Konjunkturforschungsstelle (KOF) back to 1980's for most countries which makes it possible to apply the longitudinal analysis. This article combines both approaches to search for the impact that the pace of globalization may have in the developed market economies and in the transition economies. It is a part of a broader research project focused on the links between globalization and institutional quality. The conclusions are confronted with those reached in author's previous paper focused on the analysis of social-economic impacts of the process of globalization in the developing world.

Key words: Globalization, Human Development, Economic Inequality, Social Inequality.

JEL Code: E02, O11, O15

Introduction

Increased global economic integration, globally interconnected and interdependent social, political, cultural, and environmental systems are generally referred to as "globalization". During the last two decades, political relations, social and information networks, movements of labor, capital flows, and institutional changes have become crucial factors of success and competitiveness of individual states in the environment of world economy (Fárek, 2006). The measuring of globalization has intermediated an important insight into the nature of investment climate, into the development and changes of economic growth, into the intensity and spread of social and economic inequalities. Indeed, this new point of view at the world economy has helped to better understand the international business environment as well as to provide a perspective which the economic policies will be operational within.

The impacts of globalization on economic growth have been tested frequently. The papers on this topic include studies presenting cross sectional estimates, e.g. (Garret, 2001), (Bednářová, Laboutková & Kocourek, 2011), or studies providing detailed analysis of individual sub-dimensions of globalization, e.g. (Dollar & Kraay, 2004), (Dreher & Gaston, 2008), (Kocourek, Bednářová, & Laboutková, 2013). Recent empirical studies have proved, countries that were more globalized, experienced higher growth rates (Dreher, 2006). (Sameti, 2006) found that globalization increased the size of governments, while (Tsai, 2007) proved that globalization increased human welfare.

This paper is focused on the question whether the globalization has the power to reduce inequality of redistribution of the resources and opportunities in a society. (Amavilah, 2009) discovered that the social dimension of globalization has the most intensive effects on the human development. (Bergh & Nilsson, 2009) identified positive effects of globalization on the life expectancy. (Kraft, Bednářová & Kocourek, 2012) discussed the different outcomes of globalization in developed market economies and in developing countries. Finally, (Kocourek, 2013) described positive effects of the pace of globalization in the developing countries,

The main hypothesis of this paper is that the process of globalization equalizes the differences in distribution of income and in access to health care and education in the group of developed market economies and economies in transition. The starting point for this paper lies in conclusions of (Kraft, Bednářová & Kocourek, 2012), where authors found out that the globalization is connected with lower economic and social inequalities in the developed market economies, but it does not contribute to reduction of economic and social inequalities in the developing countries. However, the analysis in (Kraft, Bednářová & Kocourek, 2012) is purely cross-sectional, comparing the momentary state in different countries. This contribution combines the cross-sectional approach with time-series statistical methods (longitudinal approach), which may lead to more complex and more exciting conclusions.

After addressing the methodological issues of the research, the paper focuses on the analysis of links between the loss in human development caused by inequalities in distribution of wealth and of public goods (such as education and health care) and the average pace of globalization in the chosen group of countries. The findings will be summed up in conclusion and possible directions for further research will be introduced.

1 Methodology

For the purpose of this article, the American Central Intelligence Agency definition of the group of developed market economies[1] and the original International Monetary Fund list of transition economies[2] will be used. The level of globalization will be measured by the KOF Globalization Index (KOF, 2013). The economic and social inequalities will be calculated using the Human Development Report data and methodology (UNDP, 2013). The total Human Development Index (*HDI*) is a geometric mean of three partial indices: income index (*II*), education index (*EI*), and life expectancy index (*LEI*), while the Inequality-Adjusted Human Development Index (*IHDI*) is defined as a geometric mean of inequality-adjusted income index (*III*), inequality-adjusted education index (*IEI*), and inequality-adjusted life expectancy index (*ILEI*):

$$HDI = \sqrt[3]{II \cdot EI \cdot LEI} \tag{1}$$

$$IHDI = \sqrt[3]{III \cdot IEI \cdot ILEI} \tag{2}$$

The general level of inequalities in each country will be quantified as a difference between the level of the Human Development Index (*HDI*) and the Inequality-Adjusted Human Development Index (*IHDI*) and will be referred to as a Human Development Loss:[3]

$$Human\ Development\ Loss = HDI - IHDI \tag{3}$$

The Human Development Loss is in fact a part of the total *HDI* score that has not been reached because of the existing inequalities in the particular country. Since various inequalities manifest themselves in all three components of *HDI*, it is possible to separate the income inequalities from the inequalities in access to health care and education (social inequalities). The measure of the extent of income inequalities can be written as follows (4), while the size of social inequalities can be estimated using (5):

$$Loss\ Due\ to\ Income\ Inequality = II - III \tag{4}$$

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[1] In the CIA World Factbook denoted as "developed countries".

[2] The original list of transition economies from 2001 has been used.

[3] For more detailed explanation and discussion see e.g. (Kraft, Bednářová & Kocourek, 2012) or (Bednářová, Laboutková & Kocourek, 2011).

$$Loss\ Due\ to\ Social\ Inequalities = \sqrt[2]{EI \cdot LEI} - \sqrt[2]{IEI \cdot ILEI} \qquad (5)$$

These three measures of inequalities (overall Human Development Loss, Loss Due to Income Inequalities, and Loss Due to Social Inequalities) will be tested for having a relation with the ongoing process of globalization. The average annual pace of this process will be estimated as a slope of the linear trend line of the KOF Globalization Index time series. The Pace of Globalization will be quantified for each developing country separately following the equation (6):

$$Pace\ of\ Globalization = \frac{n \cdot \sum KOF_i \cdot year_i - \sum year_i \cdot \sum KOF_i}{n \cdot \sum year_i^2 - \left(\sum year_i\right)^2} \qquad (9)$$

where n is the length of the time series. Only countries with at least eighteen-year-long record of KOF Globalization Index will be used, which guarantees a higher robustness of the trend analysis and does not lead to exclusion of the Czech and Slovak Republic.

The following analysis will be carried out only for such countries, whose level of globalization can be traced at least eighteen years back from now and whose level of human development and inequality-adjusted human development has been measured by the United Nations Development Programme in 2012 (UNDP, 2013). Therefore, the sample will consist only from the following 23 developing market economies: Australia (AUS), Austria (AUT), Belgium (BEL), Canada (CAN), Denmark (DNK), Finland (FIN), France (FRA), Germany (DEU), Greece (GRC), Iceland (ISL), Ireland (IRL), Israel (ISR), Italy (ITA), Luxembourg (LUX), Malta (MLT), the Netherlands (NLD), Norway (NOR), Spain (ESP), Sweden (SWE), Switzerland (CHE), Turkey (TUR), the United Kingdom (GBR), and the United States (USA), and from the following 30 transition economies: Albania (ALB), Armenia (ARM), Azerbaijan (AZE), Belarus (BLR), Bosnia and Herzegovina (BIH), Bulgaria (BGR), Cambodia (KHM), China (CHN), Croatia (HRV), the Czech Republic (CZE), Estonia (EST), Georgia (GEO), Hungary (HUN), Kazakhstan (KAZ), the Kyrgyz Republic (KGZ), Laos (LAO), Latvia (LVA), Lithuania (LTU), Moldova (MDA), Montenegro (MNE), Poland (POL), the Republic of Macedonia (MKD), Romania (ROM), Serbia (SRB), the Slovak Republic (SVK), Slovenia (SVN), Tajikistan (TJK), Ukraine (UKR), Uzbekistan (UZB), and Vietnam (VNM).

2 Results

It seems almost obvious the pace of the globalization process is dependent on the quality of institutions in each country, because these institutions are responsible for globalizing the economy or society or because the globalization requires establishment or modifications of these institutions. The institutional quality is also crucial for an equal and fair access to health care, education, as well as for offering the equal and fair working opportunities to people. Therefore a negative relation between the pace of globalization and the extent of Human Development Loss was assumed.

2.1 Human Development Inequality and the Pace of Globalization

The regression analysis of the Pace of Globalization and the Human Development Loss brought rather interesting results. In the developing countries the relationship between the two indicators was found negative, rather weak, but statistically significant on the 95% level of confidence (Kocourek, 2013). However, neither in the group of developed market economies, nor in the group of transition economies, any significant link between the pace of globalization and the level of inequality was identified on the 95% level of confidence. The reasons for such a finding may be manifold, but two major ones seem more probable:

1) The countries form very heterogeneous groups therefore the search for general tendencies or relations does not lead to significant findings.
2) The various and multiple different pressures and links manifest themselves "inside" the complex systems of developed market and transition economies, but they balance themselves reciprocally, so that they remain invisible on the "outside", unrecognized by the composite indices.

These reasons made the next steps of the analysis, the investigation of the two components of human development inequality, even more important and exciting.

2.2 Income Inequality and the Pace of Globalization

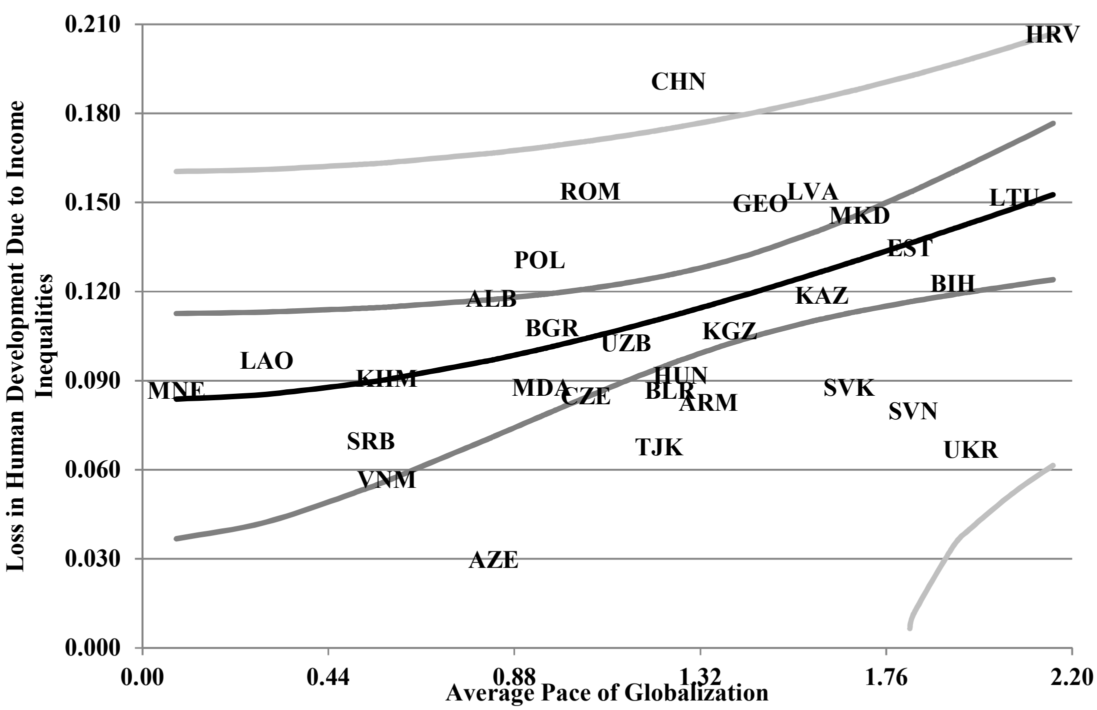
The regression analysis of the Pace of Globalization (horizontal axis see Fig. 1, *X* see Tab. 1) and the fraction of the Human Development Loss caused by the **income** inequality (vertical axis see Fig. 1, *Y* see Tab. 1) led to remarkable findings: While in the group of developed market economies, the pace of globalization does not change the income inequalities significantly (on the 95% level of confidence), in the transition economies, there was identified a positive statistically significant link between the average pace of globalization over the last two decades and the income inequalities today (see Tab. 1 and Fig. 1).

Tab. 1: Relation between the Human Development Loss Caused by Income Inequality and the Average Pace of Globalization (in the Years 1980 – 2010)

Model	Developed Market Economies			Transition Economies		
	$Y = \frac{1}{a + b \cdot X^2}$	*t*-statistics	*P*-value	$Y = \sqrt{a + b \cdot X^2}$	*t*-statistics	*P*-value
Parameter *a*	8.54274	11.1744	0.0000	0.00699089	2.5223	0.0176
Parameter *b*	-0.955465	-0.760543	0.4554	0.00350881	2.81512	0.0088
F-test	0.58		0.4554	7.92		0.0088
R^2	2.68057 %			22.0596 %		
R^2 adjusted	-1.95368 %			19.276 %		

Source: [authors' calculations]

Fig. 1: Human Development Loss Caused by Income Inequality and the Average Pace of Globalization (in the Years 1980 – 2010) in Transition Economies



Note: The dark line illustrates the fitted model; the limits for forecast means are depicted by the narrow band; and the limits for individual predictions are depicted by the wide band. They are all at the confidence level of 95.0%.

Source: [authors' calculations]

The double-squared model of transition economies is capable of explaining 22.1 % of variability in Human Development Loss by variability in the income inequality. The linkage between the two indicators is not very strong, suggesting there may be other (possibly more) important causes of inequalities in income distribution. Still the pace of globalization as one of them should not be neglected.

This section has shown that the pace of globalization has significant, but rather weak connection with the income inequalities in transition economies. This connection is positive, indicating that transition economies that globalized themselves in the previous two decades more rapidly or more intensively than others, are now facing slightly (but significantly) higher income inequalities than those that integrated themselves to international relations more carefully. However, no such effect has been recognized in the developed market economies.

2.3 Social Inequalities and the Pace of Globalization

The regression analysis of the Pace of Globalization (horizontal axis see Fig. 2, *X* see Tab. 2) and the fraction of the Human Development Loss caused by the **social** inequality (vertical axis see Fig. 2, *Y* see Tab. 2) brought also quite outstanding findings. While neither in this case, in the group of developed market economies, the pace of globalization change the income inequalities significantly (on the 95% level of confidence), in the transition economies, there was again identified a statistically significant relation between the average pace of globalization over the last two decades and the income inequalities today. And this time, the relation is negative.

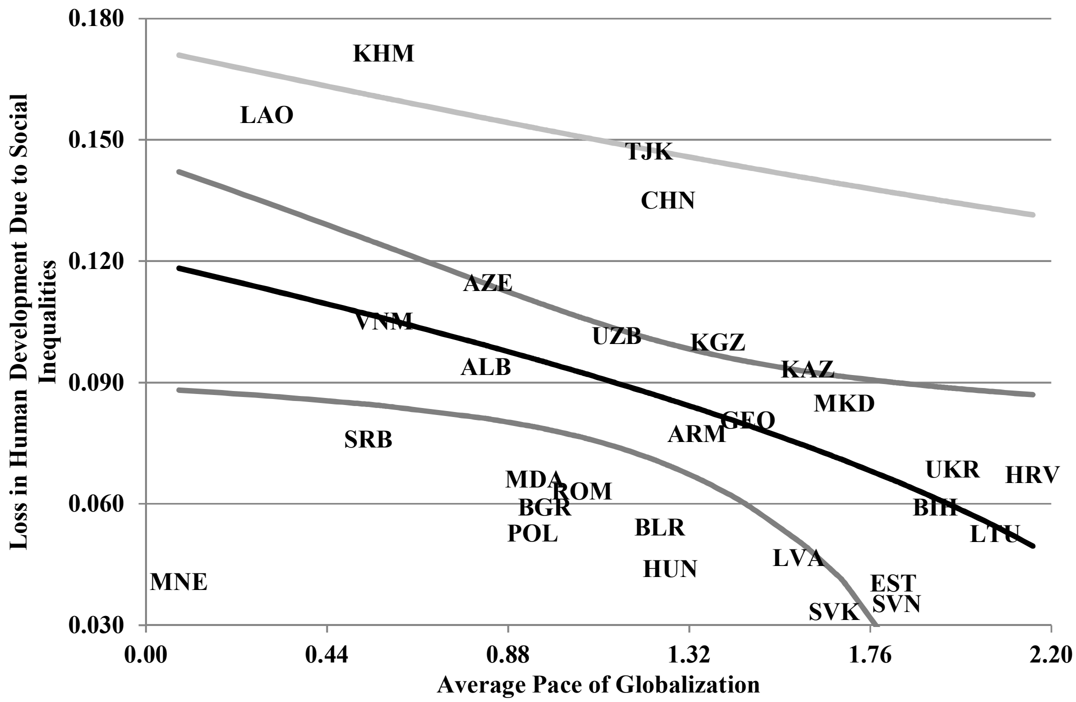
Tab. 2: Relation between the Human Development Loss Caused by Social Inequality and the Average Pace of Globalization (in the Years 1980 – 2010)

Model	Developed Market Economies			Transition Economies		
	$Y = \sqrt{a + b \cdot X^2}$	*t*-statistics	*P*-value	$Y = \sqrt{a + b \cdot X}$	*t*-statistics	*P*-value
Parameter *a*	0.000320501	0.00184275	0.8636	0.0144212	4.49828	0.0001
Parameter *b*	0.00497822	0.00302819	0.1151	-0.00555237	-2.33707	0.0268
F-test	2.70		0.1151	5.46		0.0268
R^2	11.4022 %			16.3227 %		
R^2 adjusted	7.18321 %			13.3343 %		

Source: [authors' calculations]

The squared-*Y* model of transition economies is capable of explaining only 16.3 % of variability in Human Development Loss by the variability in social inequalities (such as unequal access to health care or education). Neither here, the linkage between the two measures is very strong, indicating there may be other important causes of social inequalities besides the pace of globalization.

Fig. 2: Human Development Loss Caused by Social Inequality and the Average Pace of Globalization (in the Years 1980 – 2010) in Transition Economies



Note: The dark line illustrates the fitted model; the limits for forecast means are depicted by the narrow band; and the limits for individual predictions are depicted by the wide band. They are all at the confidence level of 95.0%.

Source: [authors' calculations]

This section of the paper has shown that the pace of globalization has significant, but rather weak connection with the social inequalities in transition economies. This connection is negative, representing the fact, that transition economies which globalized themselves in previous years faster are now facing somewhat (but significantly) lower social inequalities than those that built and connected the international relations more vigilantly.

3 Conclusions

The analysis was focused on the impact of the pace of globalization on inequalities in the developed market economies as well as in the transition economies. The main conclusion is that the pace of globalization does not show any significant effect on the extent of inequalities in the developed market economies, not even when decomposing the total measure of inequality to social inequalities and income inequalities.

Either in the group of transition economies, the linkage between the pace of globalization and the human development inequality has not been recognized as statistically significant on 95% level of confidence. But here, the pace of globalization has probably negative effect on income inequalities, but positive on social inequalities (which is the reason, why the overall effect was not proved significantly strong). The pace or intensity of the process of globalization has therefore beneficial social impacts in the transition countries, but also even stronger adverse income effects. This crucial result corresponds to a certain extent with conclusions of (Bergh & Nilsson, 2009), and (Kraft, Bednářová & Kocourek, 2012) and supports the finding of the importance of social dimension of globalization in the developing world (Kocourek, 2013). It also rectifies the conclusions of (Dreher & Gaston, 2008).

The analyzed issue offers an interesting space for future research. An important and very appropriate question rests in economic and social impacts of sub-dimensions (economic, social, and political) of globalization and their individual paces.

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