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Working Paper

Socio-economic exclusion as a hindrance of economic development. A comparative study for European countries

GUT FME Working Paper Series A, No. 9/2013 (9)

Provided in Cooperation with:

Gdańsk University of Technology, Faculty of Management and Economics

Suggested Citation: Lechman, Ewa (2013) : Socio-economic exclusion as a hindrance of economic development. A comparative study for European countries, GUT FME Working Paper Series A, No. 9/2013 (9), Gdańsk University of Technology, Faculty of Management and Economics, Gdańsk

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GDAŃSK UNIVERSITY OF TECHNOLOGY
FACULTY OF MANAGEMENT AND ECONOMICS

SOCIO-ECONOMIC EXCLUSION AS A HINDRANCE OF ECONOMIC DEVELOPMENT. A COMPARATIVE STUDY FOR EUROPEAN COUNTRIES.

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**GUT Faculty of Management and Economics
Working Paper Series A (Economics, Management, Statistics)
No 9/2013 (9)**

May 2013

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SOCIO-ECONOMIC EXCLUSION AS A HINDRANCE OF ECONOMIC DEVELOPMENT. A COMPARATIVE STUDY FOR EUROPEAN COUNTRIES.

Ewa Lechman¹

Abstract

In the paper we run an exhaustive study of the magnitude socio-economic exclusion which affects large parts of societies in European countries. Social and economic exclusion – alternatively called as deprivation – are widely recognized as symptoms of human poverty. This implies obstacles in gaining full and free access to education, professional health care, finance, or i.e. labor market, resulting in substantial lack of skills, capabilities and functionings (see Sen 1986). All these disable effective usage and allocation of resources, which constitutes a significant hindrance for economic development of countries. The aim of the analysis is to identify the magnitude of socio-economic deprivation (human poverty) and confront it with the economic development level (approximated by gross domestic product *per capita*) and dynamics in European countries. For quantitative assessment of the socio-economic deprivation level we apply a bundle of arbitrary chosen indicator derived from EUROSTAT databases. The sample covers European Union economies – with special focus on Baltic Sea region countries, and the time span for the analysis is 2004-2011.

Keywords: *social exclusion, economic exclusion, deprivation, poverty, economic development*

JEL Codes: *O11, I0, I32*

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1. Social exclusion – what stands behind?

The concept of social exclusion presents universal validity. However, lack of rigorous theorization and conceptualization of the notion stands behind a wide array of difficulties in defining the issues. It constitutes a serious disadvantage when there emerges a need for its analysis in time and space. The concept of social exclusion has entered scientific and political debates in mid 70's of the last century, and was first introduced to the public by René Lenoir², that referred the concept to those who were “mentally and physically handicapped, suicidal people, aged invalids, abused children, substance abusers, delinquents, single parents, multi-problem households, marginal, asocial persons, and other social “misfits”” (Lenoir, 1974). In the literature the concept of Lenoir (Lenoir, 1974) was followed, extended and adopted broadly, both on political, social policy and scientific grounds. The problem of social exclusion was vastly undertaken in works of Sen (Sen 1975, 1976, 2000). Sen argues that the issue of social exclusion is multidimensional, and it shall be analyzed in a way that would give deeper insight and let to understand the nature of poverty, putting stress on identifying its root causes and consequences, providing meaningful contribution to social policy. Sen (Sen 2000), also says that social poverty can additionally be perceived from the perspective of the poverty seen as lack of capability. He also stresses (Sen 2000), that social exclusion refers to the exclusion from social relations which, as consequence, lead to further and deeper deprivations of different kinds. Those deprivation can cover, for example, exclusion from free access to labor and/or financial market, long-term unemployment. These in the long-run perspective can cause deeper impoverishment and failures. Francis (Francis 2002) and Haan (Haan 1998) defined social exclusion as “the process through which individuals or groups are wholly or partially excluded from full participation in the society within they live” (Francis 2002, Haan 1998).

In time, the term of social exclusion, has replaced– mainly in social policy debates in Europe – the concept of “poverty”. The concept of poverty, especially the concept of monetary (income) poverty has

² A Secrétaire d'Etat à l'Action Social in the French Government.

been treated as narrower term than social exclusion, which was to cover a wide bundle of dimensions of people's lives. Geddes and Benington (Geddes and Benington 2011), argue that the concept of social exclusion broadens the notion of poverty (esp. material poverty), covering multifaceted aspects. They claim that the two notions are either naïve or tautological. They identify problems that societies have to face and go along with, however substantial lack of theoretical rigor or ideological orientation allows different approaches to the problem (see Geddes and Benington 2001, O'Reilly 2005). Duffy (Duffy 1995) claims that social exclusion is much wider term than poverty, as it encompasses – not only material deprivation – but also is marked by alienation from economic, political and cultural life. Walker (Walker 1997) and Hills (Hills 1998) refer to the problem as more general, opposing it to income poverty as a time, but respecting the social exclusion as a process of disempowerment and alienation. Multitude references to understanding poverty as social exclusion are also seen in works of Lipton and Maxwell (Lipton and Maxwell 1992), Dasgupta (Dasgupta 1993), or Townsend (Townsend 1993). Pacione and Lee (Pacione 1997, and Lee *et al.* 1997), perceive the problem in spatial dimensions. They see social exclusion as a problem of spatial polarization of societies and social divisions. The special focus on the issue, uncovers it in a different dimensions, showing the problems through lens of “zones of exclusion” inhabited by society members “officially” excluded from the rest. However Aasland and Flotten (Aasland and Flotten 2000), argue that the concept of social exclusion is no more unambiguous than “poverty”. According to them, the phenomenon of social exclusion covers all people who are unable to adjust to mainstreams societies they live in, and these are mainly long-term unemployed, youth unemployed, or immigrants. Aasland and Flotten (Aasland and Flotten 2000), identify the social exclusion concept as vague and which can be deployed to a multitudes of situations which lead to severe deprivations on economic, social, political or cultural grounds. Paugman (Paugman 1993, and Castel (Castels 1996) refer to the social exclusion as a process of social marginalization or social disqualification.

Summarizing the above, social exclusion can be perceived as multidimensional disadvantage experienced by society members (individuals) or – more broadly – by whole groups. The

marginalization can be perceived in social and economic dimensions. The economic dimension, *inter alias*, would cover: lack of access to income, production of goods and services; long-term unemployment and limited access to labor market; deprivation from proper shelter and housing. On the ground of social dimension, the exclusion could cover: limited access to education and healthcare system; lack of opportunities for social and political participation; exposure on crime, delinquency or homelessness. Anyhow, the social exclusion covers multitude of factors, explaining the magnitude of deprivation from basic need, capabilities and opportunities.

2. The data

In the following sections, we examine the magnitude of social deprivation in 27 European countries, in the time span 2004-2011. We approximated the level of social exclusion applying 7 different indicators which are assumed to be proxy variables of social marginalization. The indicators are as follows: severely materially deprived people³ (*SevMatDepr*_{2004,2011}), people living in households with very low work intensity (*LowWorkIntens*_{2004,2011}), persons with low educational attainment (*LowEduAtt*_{2004,2011}), people at risk of poverty or social exclusion (*AtRiskPov*_{2004,2011}), long-term unemployment (*LongTermUnemploy*_{2004,2011}), early leavers from education and training (*EarlyLeavEdu*_{2004,2011}), persistent at-risk-of poverty rate (*PersAtRiskPov*_{2004,2011}). Additionally we have added a complimentary indicator: Gross Domestic Product_{2004,2011} (PPP) *per capita*. All data are derived from Eurostat databases and World Economic Outlook Database⁴ (accessed May 2013).

3. Social exclusion in Europe – a quantitative analysis

The objectives of the empirical part of the paper are three-fold. Firstly, we aim to identify clusters of countries, grouped by the relative level of overall deprivation in seven given dimensions⁵ (referred to cited variables), both in 2004 and in 2011 to track changes – if any reported – members of the clusters.

³ Detailed explanations of the variables are put in Appendix 2.

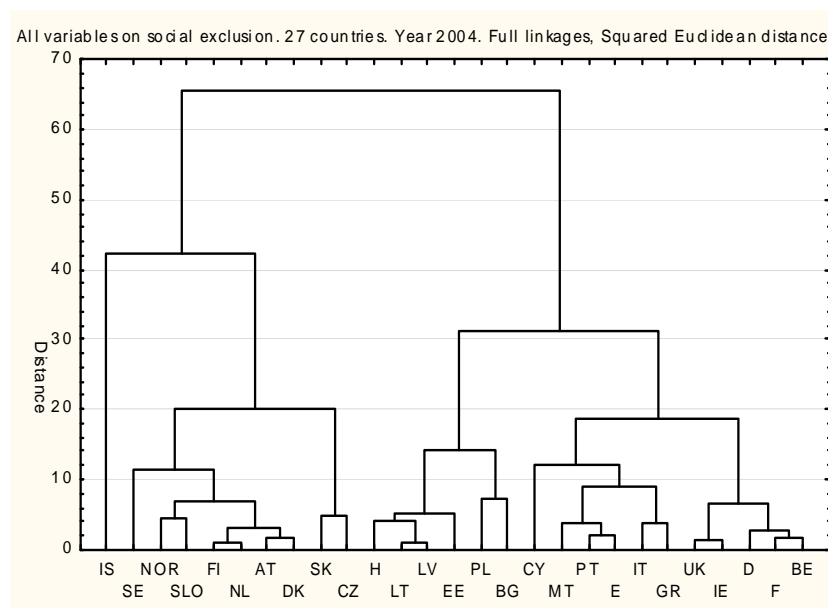
⁴ Edited by International Monetary Fund.

⁵ GDP PPP *per capita* variable is excluded on purpose.

Secondly, we examine – taking into account each indicator separately – if countries improved or worsened its relative position in relation to others along the period 2004-2011. Finally, we wish to estimate whether GDP PPP *per capita* dynamic had any significant influence on the final (in 2011) level of social exclusion (variables treated separately).

As stated above, the preliminary analysis examines existence of the country clusters (groups), characterized by similar relative level of social exclusion. We seek for clusters in 2004 and 2011 separately. Clusters are formed applying the square Euclidean distances formulas (assumption of full linkages) among countries. Results of the analysis are presented in the following charts (see Chart 1 and 2) below.

Chart 1. Clusters of countries with similar relative level of overall social exclusion. 27 countries. Year 2004.

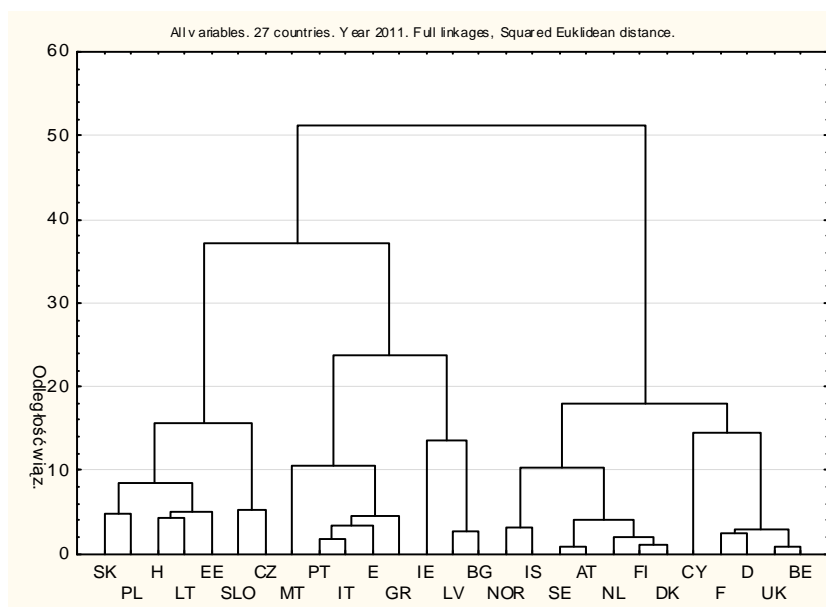


Source: own elaboration based on data derived from Eurostat (accessed: May 2013).

In 2004, four smaller and two bigger distinct country clusters could be distinguished. Each cluster country members experience relatively similar level of social exclusion approximated by the seven chosen variables. First cluster ($C1_{2004}$) encompasses: Iceland, Norway, Finland, Austria, Slovakia, Sweden, Slovenia, Netherlands, Denmark and Czech Republic. Second cluster ($C2_{2004}$): Hungary, Lithuania, Latvia, Estonia, and Poland; third cluster ($C3_{2004}$): Cyprus, Malta, Portugal, Spain, Italy and

Greece, and fourth ($C4_{2004}$): United Kingdom, Ireland, France, Belgium and Germany. Difference in the overall level of social deprivation among cluster members are relatively low, which also indicates that these countries experience similar level of social deprivation in given dimensions. At a time, from the chart 1, we can conclude on existence of two “bigger” clusters: first one covers only $C1_{2004}$, while the second “big” cluster covers: $C2_{2004}$, $C3_{2004}$ and $C4_{2004}$. Relative distance between the two “big” clusters are huge (about 65), which indicates significant differences in the level of social exclusion in these two country groups.

Chart 2. Clusters of countries with similar relative level of overall social exclusion. 27 countries. Year 2011.



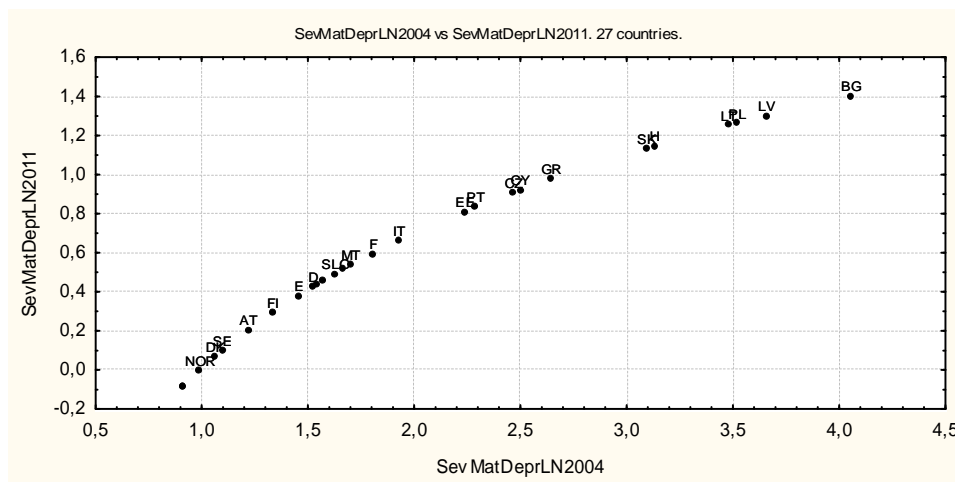
Source: own elaboration based on data derived from Eurostat (accessed: May 2013).

After 7-year period, the picture has changes slightly. In 2011, five distinct country clusters can be perceived. First cluster ($C1_{2011}$) covers the following countries: Slovakia, Hungary, Estonia, Czech Republic, Slovenia, Lithuania and Poland. Second cluster ($C2_{2011}$): Malta, Portugal, Italy and Greece. Third cluster ($C3_{2011}$): Ireland, Bulgaria and Latvia. Fourth cluster ($C4_{2011}$): Norway, Island, Sweden, Austria, Netherlands, Finland, and Denmark. And finally, the fifth cluster ($C5_{2011}$): Cyprus, France, Germany, Belgium and United Kingdom. Again we can see two “big” clusters: first one covering $C1_{2011}$, $C2_{2011}$ and $C3_{2011}$; while the second one covering: $C4_{2011}$ and $C5_{2011}$. Despite easily observable changes on

clusters composition, we can also see that the distance between the two “big” groups has lowered (in 2011 achieving about 51). A significant change is that relative distances between most and lowest socially deprived countries have diminished. It proves that, in time, relative changes among countries are getting lower, and the group becomes more homogenous.

Having in mind the results of the previous section, we turn to examine, whether countries (analyzed separately, not in groups), have improved – or alternatively – worsened their relative position in terms of social exclusion level. We seek for changes in the time span 2004-2011, for each country and variable separately. As result we draw 7 distinct scatter plots (see below Charts 3,4,5,6,7,8 and 9).

Chart 3. Sever material deprivation (share of total population). 27 countries. Years 2004 and 2011.



Source: own elaboration based on data derived from Eurostat (accessed May 2013).

Chart 3 (above) reports on changes in level of severe material deprivation in analyzed economies. As can be easily concluded, each – out of the 27 countries, has improved their relative level of social exclusion in given dimension, by significant decreases in the variables (*SevMatDepr*) in the 2004-2011. In case of Bulgaria, Latvia, Poland, Lithuania and Hungary the changes are highest, and these economies were much better off in 2011 than in 2004. In case of no country the variables value has increased, which stands for general improvement on the field of severe material deprivation.

In case of the following 6 variables, no significant changes are reported. The scatter plots (see charts 4-9), show that the magnitude of social exclusion in all 6 analyzed dimensions are slight. The following

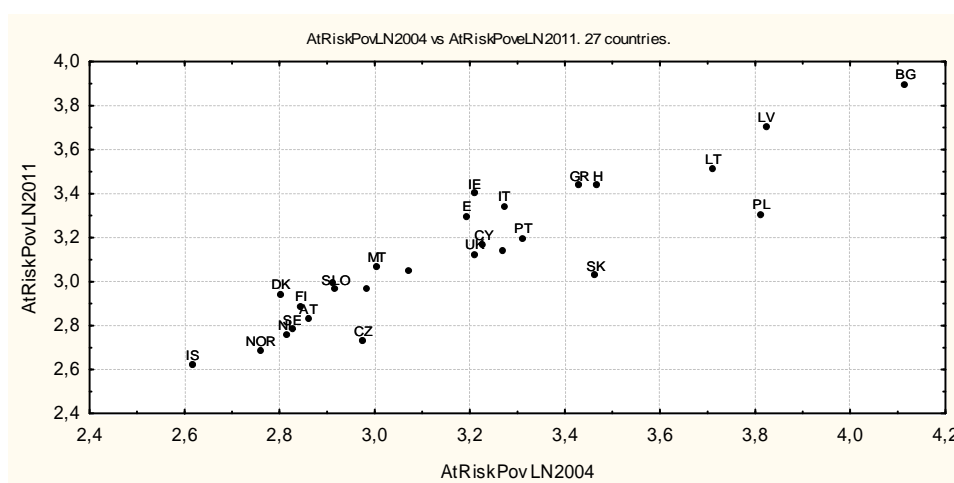
table below (Table 1), summarizes countries which changed their relative deprivation mostly in the period 2004-2011.

Table 1. Best performers and lagging behind countries in terms of social exclusion. 6 dimensions. Period 2004-2011.

Dimension / variable	Best performers	Lagging behind countries
<i>At risk poverty</i>	Poland, Slovenia, Czech Republic, Bulgaria, Lithuania	Ireland, Denmark, Spain, Germany, Italy
<i>Early leavers from school and training</i>	Cyprus, Portugal, Bulgaria, Netherlands, Lithuania	Norway, Denmark, United Kingdom, Poland (no change)
<i>Long-term unemployment</i>	Poland, Germany, Czech Republic, Slovenia, Austria	Iceland, Ireland, United Kingdom, Spain, Hungary
<i>Low educational attainment</i>	Lithuania, Poland, Slovakia, Cyprus, Bulgaria	Norway, Denmark, Sweden, Estonia (no change)
<i>People living in household with low work intensity</i>	Poland, Bulgaria, Czech Republic, Sweden, Malta	Ireland, Iceland, Spain, Greece, Latvia
<i>Persistent at risk poverty</i>	Lithuania, Hungary, Italy, France, Iceland	Sweden, Bulgaria, Malta, Denmark, Netherlands

Source: own estimates.

Chart 4. At risk poverty (share of total population). 27 countries. Years 2004 and 2011.

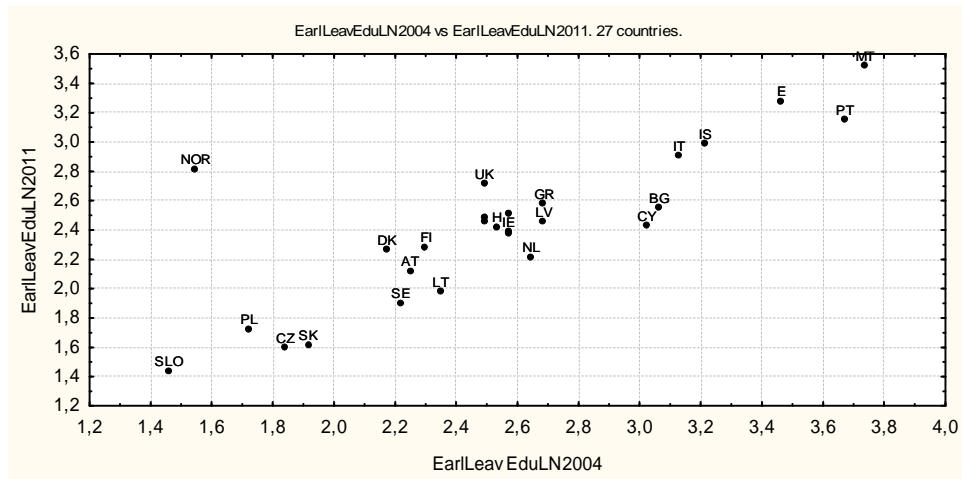


Source: Source: own elaboration based on data derived from Eurostat (accessed May 2013).

In the period 2004-2010, countries which managed to enter the path out of the social exclusion and improved significantly their scores are mainly economies from East and Central Europe. This is probably mainly due to significant socio-economic changes which enables these countries to improve their scores by diminishing the share of population experiencing substantial deprivation in multitude of dimensions. Countries that relatively worsened their scores on the ground of social exclusion are mainly West European economies. The possible explanations for this are long-term causes of recent economic crises, which harnessed the economies both on economic and social ground. The flagship example of

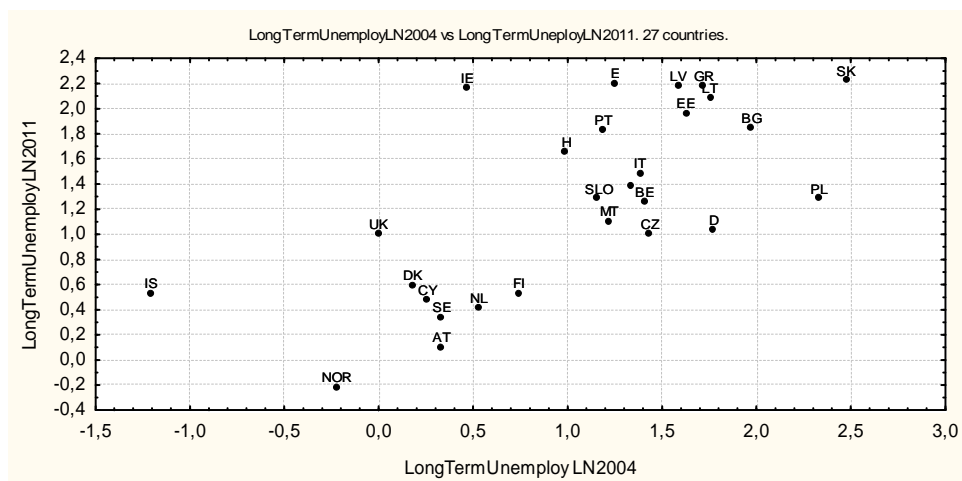
this can be Norway where the share of population aged 18-24 classified as early leavers from education and training increased from the level 4,7% in 2004, up till 16,6% in 2011. Similar, negative, changes – however not so strong – are reported in many cases of former UE-15 countries.

Chart 5. Early leavers form education and training (share of total population). 27 countries. Years 2004 and 2011.



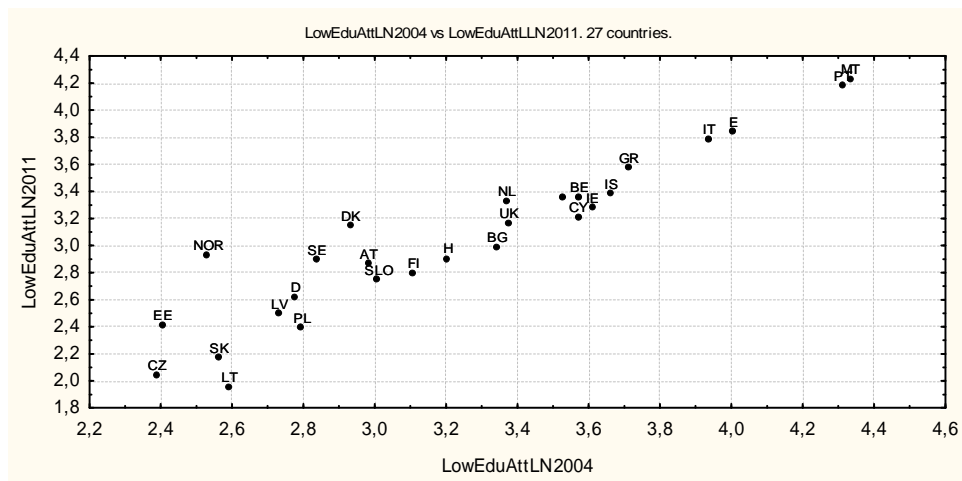
Source: Source: own elaboration based on data derived from Eurostat (accessed May 2013).

Chart 6. Long-term unemployment (share of labor force). 27 countries. Years 2004 and 2011.



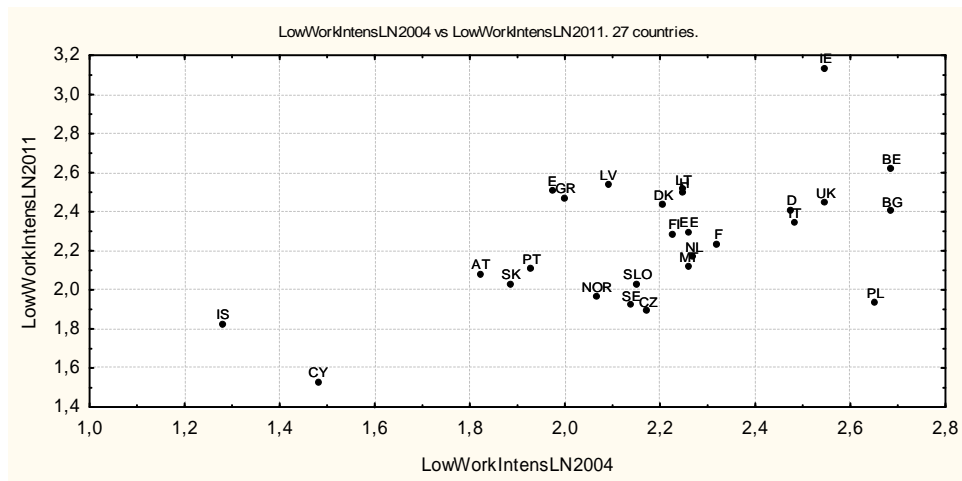
Source: Source: own elaboration based on data derived from Eurostat (accessed May 2013).

Chart 7. Low educational attainment (share of people aged 25-64). 27 countries. Years 2004 and 2011.



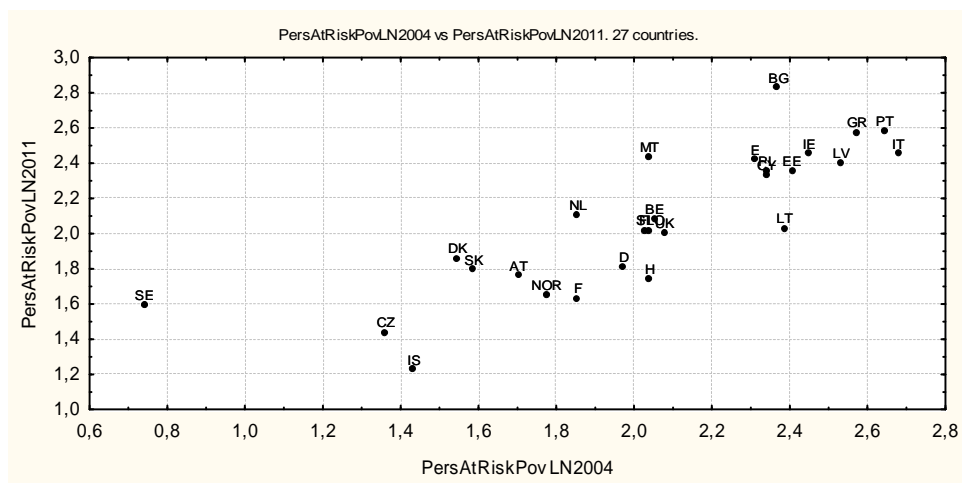
Source: Source: own elaboration based on data derived from Eurostat (accessed May 2013).

Chart 8. People living in household with low work intensity. 27 countries. Years 2004 and 2011.



Source: Source: own elaboration based on data derived from Eurostat (accessed May 2013).

Chart 9. Persistent at risk poverty (share of total population). 27 countries. Years 2004 and 2011.

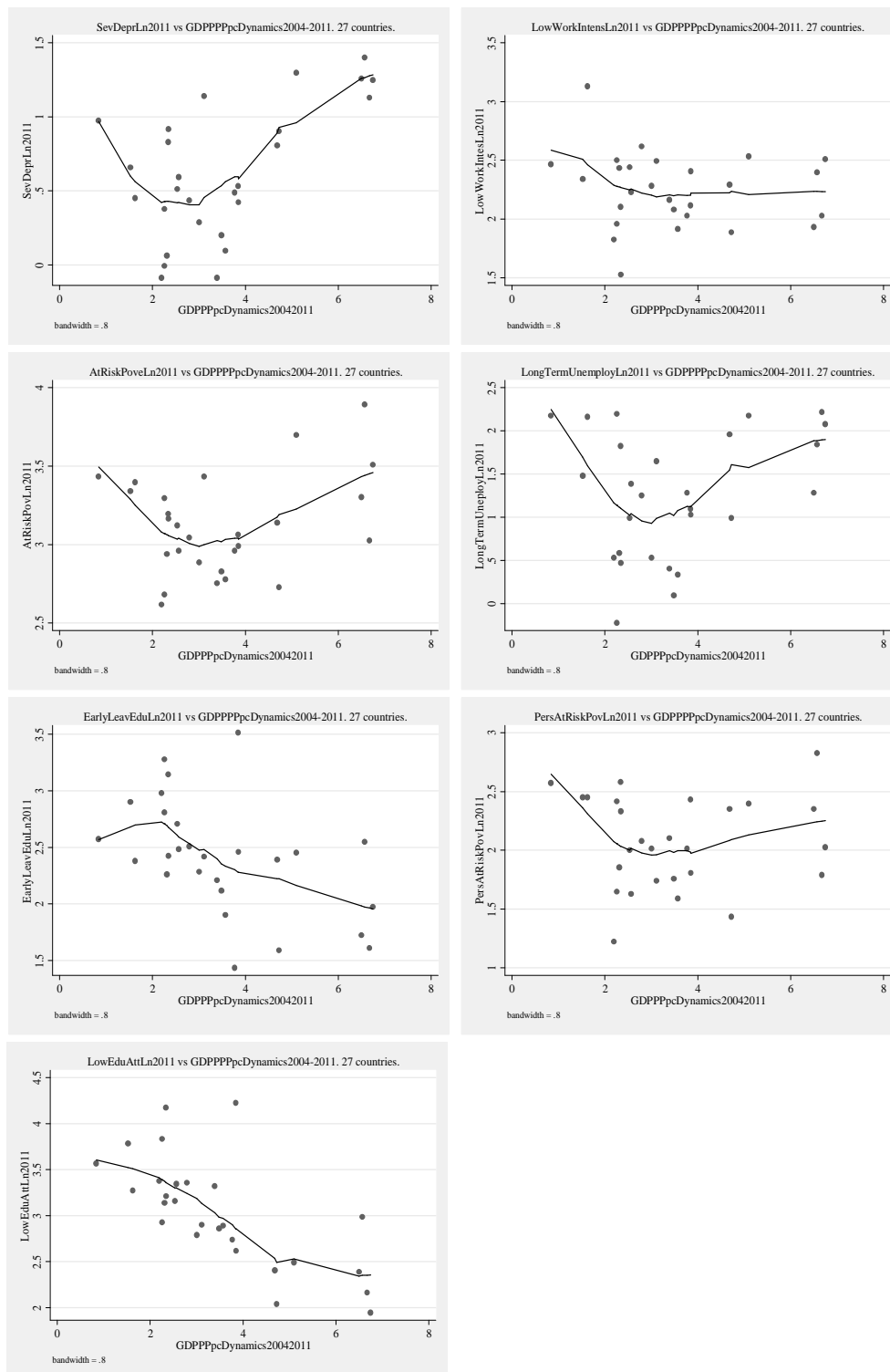


Source: Source: own elaboration based on data derived from Eurostat (accessed May 2013).

Finally, we seek for statistically significant relationships between final level of deprivation in given dimension and Gross Domestic Product (PPP) *per capita* dynamic in years 2004-2011. We hypothesize on existence negative and strong links between the two variables in the analyzed period. If so, we could draw a conclusion that high growth dynamic contribute significantly to diminishing the level of social exclusion across countries. The opposite (positive) sign would suggest no such relationships. In case of positive coefficients, concluding would not be reasonable and economically not justifiable in any case, and such results shall not be treated as valuable. The graphical approximation of the related variables are presented below (see charts 10,11,12,13,14,15, and 16). Additionally, the result of estimated regressions (GLM) are presented in Appendix 4.

In all seven cases, the statistical relationship is hardly revealed. The dots (countries) on charts are highly scattered which suggests no significant quantitative relationships. The expected relationship – in all cases – was negative, indicating that countries which, in the period 2004-2011, enjoyed relatively higher GDP PPP *per capita* dynamic, shall benefit in significant lowering level of social exclusion. As can be concluded from the charts 10-16, no such rule is visible. Countries enjoying significantly different GDP PPP *per capita* dynamics, experienced crucially different changes in social deprivation. Turning to analyze the GLMs estimates for the set variables, similar picture is revealed. Assuming that the GDP PPP *per capita* dynamic was the only regressor, and the dependent variables were the following proxies of social exclusion (values set for the year 2011), the statistically significant relationships is reported only in 3 cases: SevMatDepr₂₀₁₁ vs GDPPPPpcDynamics₂₀₀₄₋₂₀₁₁; EarlyLeavEdu₂₀₁₁ vs GDPPPPpcDynamics₂₀₀₄₋₂₀₁₁ and LowEduAtt₂₀₁₁ vs GDPPPPpcDynamics₂₀₀₄₋₂₀₁₁; where the p -value < 0,05.

Charts 10-16. Social exclusion proxies in 2011 vs. GDPPPPpc dynamic 2004-2011. 27 countries.



Source: own elaboration, based on data from Eurostat and World Economic Outlook Database (IMF) (accessed May 2013).

However, only in case of the relationships like: $\text{EarlyLeavEdu}_{2011}$ vs $\text{GDPPPPpcDynamics}_{2004-2011}$ and LowEduAtt_{2011} vs $\text{GDPPPPpcDynamics}_{2004-2011}$ the regression coefficients result to be negative. This

suggests the hypothesized relationships between the set variables and is economically justifiable. The reported coefficient for $SevMatDepr_{2011}$ vs $GDPPPPpcDynamics_{2004-2011}$ is positive, which would imply the relationship that higher GDP PPP *per capita* dynamic provokes increase in share of population living in severely materially deprivation. Led by general intuition such results shall be rejected. In the rest of four cases, the GLM estimates are either negative or statistically significant.

Summary

The main aim of the paper was to contribute to the general state of knowledge on current statistics referring to magnitude of social exclusion (approximated by 7 arbitrary chosen variables) that European countries (27 economies chosen) are experiencing, as well as to investigate changes in the level of social exclusion in the time span 2004-2011. Additionally we have examined the statistical relationships between the GDP PPP *per capita* dynamics and its hypothetical contribution to lowering social exclusion in countries in the sample. Primary we have found that countries in Europe form clusters – groups of countries with relatively similar level of social deprivation in all 7 dimensions – and the distances between these clusters are significantly high. This implies existence in Europe huge disparities when the social deprivation is discussed. What is even more, in the period 2004-2011 the picture has hardly changed. The divisions remained. Secondly we have examined whether the values of the chosen variables (proxies of social deprivation) has decreased in the analyzed period. A general conclusion is that, approximately, only half of the countries in the sample have made significant progress in the material. What is astonishing, few highly developed countries have experienced increases in the variables values. Additionally, we have estimated the relationships between the each variables value in 2011, and the GDP PPP *per capita* dynamics in the period 2004-2011, assuming that the regression coefficients shall be negative and statistically significant. However, except two cases, no such hypothesis could be confirmed. This implies existence of no significant relationships between the cited variables which could be easily quantified. Probably, in the case, the relationships are not direct, and more of qualitative kind, revealing in the long-run perspective.

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Appendix 1. Country international codes applied in the paper

Belgium	<i>BE</i>	Hungary	<i>H</i>
Bulgaria	<i>BG</i>	Malta	<i>MT</i>
Czech Republic	<i>CZ</i>	Netherlands	<i>NL</i>
Denmark	<i>DK</i>	Austria	<i>AT</i>
Germany	<i>D</i>	Poland	<i>PL</i>
Estonia	<i>EE</i>	Portugal	<i>PT</i>
Ireland	<i>IE</i>	Slovenia	<i>SLO</i>
Greece	<i>GR</i>	Slovakia	<i>SK</i>
Spain	<i>E</i>	Finland	<i>FI</i>
France	<i>F</i>	Sweden	<i>SE</i>
Italy	<i>IT</i>	United Kingdom	<i>UK</i>
Cyprus	<i>CY</i>	Iceland	<i>IS</i>
Latvia	<i>LV</i>	Norway	<i>NOR</i>
Lithuania	<i>LT</i>		

Appendix 2. Variables explanation.

<i>Severely materially deprived people</i>	The collection "material deprivation" covers indicators relating to economic strain, durables, housing and environment of the dwelling. Severely materially deprived persons have living conditions severely constrained by a lack of resources, they experience at least 4 out of 9 following deprivations items: cannot afford i) to pay rent or utility bills, ii) keep home adequately warm, iii) face unexpected expenses, iv) eat meat, fish or a protein equivalent every second day, v) a week holiday away from home, vi) a car, vii) a washing machine, viii) a colour TV, or ix) a telephone.
<i>People living in households with very low work intensity</i>	People living in households with very low work intensity are people aged 0-59 living in households where the adults work less than 20% of their total work potential during the past year.
<i>Persons with low educational attainment, by age group</i>	The indicator is defined as the percentage of people aged 25 to 64 with an education level ISCED (International Standard Classification of Education) of 2 or less. ISCED levels 0-2: pre-primary, primary and lower secondary education.
<i>People at risk of poverty or social exclusion</i>	The Europe 2020 strategy promotes social inclusion, in particular through the reduction of poverty, by aiming to lift at least 20 million people out of the risk of poverty and social exclusion. This indicator corresponds to the sum of persons who are: at risk of poverty or severely materially deprived or living in households with very low work intensity. Persons are only counted once even if they are present in several sub-indicators. At risk-of-poverty are persons with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income (after social transfers). Material deprivation covers indicators relating to economic strain and durables. Severely materially deprived persons have living conditions severely constrained by a lack of resources, they experience at least 4 out of 9 following deprivations items: cannot afford i) to pay rent or utility bills, ii) keep home adequately warm, iii) face unexpected expenses, iv) eat meat, fish or a protein equivalent every second day, v) a week holiday away from home, vi) a car, vii) a washing machine, viii) a colour TV, or ix) a telephone. People living in households with very low work intensity are those aged 0-59 living in households where the adults (aged 18-59) work less than 20% of their total work potential during the past year.
<i>Long-term unemployment</i>	Long-term unemployed (12 months and more) comprise persons aged at least 15, who are not living in collective households, who will be without work during the next two weeks, who would be available to start work within the next two weeks and who are seeking work (have actively sought employment at some time during the previous four weeks or are not seeking a job because they have already found a job to start later). The total active population (labour force) is the total number of the employed and unemployed population. The duration of unemployment is defined as the duration of a search for a job or as the period of time since the last job was held (if this period is shorter than the duration of the search for a job).
<i>Early leavers from education and training</i>	From 20 November 2009, this indicator is based on annual averages of quarterly data instead of one unique reference quarter in spring. Early leavers from education and training refers to persons aged 18 to 24 fulfilling the following two conditions: first, the highest level of education or training attained is ISCED 0, 1, 2 or 3c short, second, respondents declared not having received any education or training in the four weeks preceding the survey (numerator). The denominator consists of the total population of the same age group, excluding no answers to the questions "highest level of education or training attained" and "participation to education and training". Both the numerators and the denominators come from the EU Labour Force Survey.
<i>Persistent at-risk-of poverty rate by age group (source: SILC)</i>	The indicator shows the percentage of the population whose equivalised disposable income was below the at-risk-of-poverty threshold – for the current year and at least 2 out of the preceding 3 years.

Source: Eurostat databases, accessed: May 2013.

Appendix 3. Statistical data used in the study. 27 European countries. Time coverage 2004-2011.

Country	Severely materially deprived people (% of total population)		People living in households with very low work intensity (% of total population)		Persons with low educational attainment (% of population aged 15-24)		People at risk of poverty or social exclusion (% of total population)		Long-term unemployment rate (%)		Early leavers from education and training (% of population aged 18-24 with at most secondary education)		Persistent at-risk-of poverty rate (%)		GDP PPP per capita	
	2004	2011	2004	2011	2004	2011	2004	2011	2004	2011	2004	2011	2007 ⁶	2011	2004	2011
BE	4,7	5,7	14,7	13,7	35,7	28,7	21,6	21	4,1	3,5	13,1	12,3	7,8	8	30934,462	37611,05
BG	57,7 ⁷	43,6	14,7	11	28,3	19,8	61,3	49,1	7,2	6,3	21,4	12,8	10,7	16,9	8718,624	13812,32
CZ	11,8	6,1	8,8	6,6	10,9	7,7	19,6	15,3	4,2	2,7	6,3	4,9	3,9	4,2	19475,751	27111,9
DK	2,9	2,6	9,1	11,4	18,8	23,1	16,5	18,9	1,2	1,8	8,8	9,6	4,7	6,4	31765,882	37340,58
D	4,6	5,3	11,9	11,1	16,1	13,7	18,4	19,9	5,9	2,8	12,1	11,7	7,2	6,1	29079,302	38077,22
EE	9,4	8,7	9,6	9,9	11,1	11,1	26,3	23,1	5,1	7,1	13,1	10,9	11,1	10,5	14882,22	20657,05
IE	4,8	7,5	12,8	22,9	37	26,4	24,8	29,9	1,6	8,7	13,1	10,8	11,6	11,6	36487,916	40894,86
GR	14,1	15,2	7,4	11,8	41	35,5	30,9	31	5,6	8,8	14,7	13,1	13,1	13,1	24059,274	25509,98
E	4,3	3,9	7,2	12,2	55	46,2	24,4	27	3,5	9	32	26,5	10,1	11,2	26023,06	30477,65
F	6,1	5,2	10,2	9,3	34,1	28,4	19,8	19,3	3,8	4	12,1	12	6,4	5,1	29329,846	35089,79
IT	6,9	11,2	12	10,4	51,4	44	26,4	28,2	4	4,4	22,9	18,2	14,6	11,6	27343,253	30422,23
CY	12,2	10,8	4,4	4,6	35,6	24,8	25,3	23,7	1,3	1,6	20,6	11,3	10,4	10,3	23402,229	27580,61
LV	38,9	31,4	8,1	12,6	15,4	12,1	45,8	40,4	4,9	8,8	14,7	11,6	12,6	11	11698,828	16717,35
LT	32,6	18,5	9,5	12,3	13,4	7	41	33,4	5,8	8	10,5	7,2	10,9	7,6	12682,555	20342,57
H	22,9	23,1	9,5	12,1	24,7	18,2	32,1	31	2,7	5,2	12,6	11,2	7,7	5,7	15740,191	19570,72
MT	5,5	6,3	9,6	8,3	76,4	68,5	20,2	21,4	3,4	3	42,1	33,5	7,7	11,4	20145,915	26369,76
NL	2,5	2,5	9,7	8,7	29,1	27,7	16,7	15,7	1,7	1,5	14,1	9,1	6,4	8,2	33110,403	41976,87
AT	3,4	3,9	6,2	8	19,8	17,5	17,5	16,9	1,4	1,1	9,5	8,3	5,5	5,8	32558,037	41556,13
PL	33,8	13	14,2	6,9	16,4	10,9	45,3	27,2	10,3	3,6	5,6	5,6	10,4	10,5	12697,682	20012,74
PT	9,9	8,3	6,9	8,2	74,8	65	27,5	24,4	3,3	6,2	39,4	23,2	14,1	13,2	20082,627	23657,82
SLO	5,1	6,1	8,6	7,6	20,3	15,5	18,5	19,3	3,2	3,6	4,3	4,2	7,7	7,5	21842,687	28435,78
SK	22,1	10,6	6,6	7,6	13	8,7	32	20,6	11,9	9,2	6,8	5	4,9	6	14642,434	23365,99
FI	3,8	3,2	9,3	9,8	22,4	16,3	17,2	17,9	2,1	1,7	10	9,8	7,6	7,5	29165,057	35993,69
SE	3	1,2	8,5	6,8	17,1	18	16,9	16,1	1,4	1,4	9,2	6,7	2,1	4,9	31339,329	40228,87
UK	5,3	5,1	12,8	11,5	29,3	23,6	24,8	22,7	1	2,7	12,1	15	8	7,4	30591,873	36525,41
IS	2,5	2,1	3,6	6,2	39	29,3	13,7	13,7	0,3	1,7	24,9	19,7	4,2	3,4	32618,765	38039,16
NOR	2,7	2,3	7,9	7,1	12,6	18,7	15,8	14,6	0,8	0,8	4,7	16,6	5,9	5,2	45380,267	53157,75

Source: Eurostat database, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database, accessed: May 2013.

⁶ Earliest available year.

⁷ Data marked red – data from the closest available year (in most cases – 2005).

Appendix 4. Social exclusion in 2011 (by indicator) vs. GDP PPP *per capita* dynamic 2004-2011.
(GLM estimates, $\alpha=0,05$).

```
. glm LowWorkIntesLn2011 GDPppcDynamics20042011, family(gaussian) link(identity)
> ty)
```

Iteration 0: log likelihood = -6.783933

Generalized linear models	No. of obs	=	27
Optimization : ML	Residual df	=	25
Deviance	Scale parameter	=	.1045173
Pearson	(1/df) Deviance	=	.1045173
	(1/df) Pearson	=	.1045173

Variance function: $V(u) = 1$ [Gaussian]
Link function : $g(u) = u$ [Identity]

Log likelihood	=	-6.783932951	AIC	=	.6506617
			BIC	=	-79.78299

LowWork~2011	Coef.	OIM Std. Err.	z	P> z	[95% Conf. Interval]	
GDP~20042011 _cons	-.0271244 2.341269	.0383758 .1481793	-0.71 15.80	0.480 0.000	-.1023395 2.050843	.0480907 2.631695

```
. glm SevDeprLn2011 GDPppcDynamics20042011, family(gaussian) link(identity)
```

Iteration 0: log likelihood = -10.686671

Generalized linear models	No. of obs	=	27
Optimization : ML	Residual df	=	25
Deviance	Scale parameter	=	.139553
Pearson	(1/df) Deviance	=	.139553
	(1/df) Pearson	=	.139553

Variance function: $V(u) = 1$ [Gaussian]
Link function : $g(u) = u$ [Identity]

Log likelihood	=	-10.68667133	AIC	=	.9397534
			BIC	=	-78.9071

SevDepr~2011	Coef.	OIM Std. Err.	z	P> z	[95% Conf. Interval]	
GDP~20042011 _cons	.1570028 .073597	.0443437 .1712233	3.54 0.43	0.000 0.667	.0700906 -.2619945	.2439149 .4091886

```
. glm LowEduAttLn2011 GDPppcDynamics20042011, family(gaussian) link(identity)
```

Iteration 0: log likelihood = -14.616879

Generalized linear models	No. of obs	=	27
Optimization : ML	Residual df	=	25
Deviance	Scale parameter	=	.1867127
Pearson	(1/df) Deviance	=	.1867127
	(1/df) Pearson	=	.1867127

Variance function: $V(u) = 1$ [Gaussian]
Link function : $g(u) = u$ [Identity]

Log likelihood	=	-14.61687907	AIC	=	1.23088
			BIC	=	-77.7281

LowEduA~2011	Coef.	OIM Std. Err.	z	P> z	[95% Conf. Interval]	
GDP~20042011 _cons	-.2515616 3.916112	.051292 .1980525	-4.90 19.77	0.000 0.000	-.3520921 3.527937	-.1510311 4.304288

```
. glm AtRiskPovLn2011 GDPppcdynamics20042011, family(gaussian) link(identity)
```

```
Iteration 0: log likelihood = -5.592611
```

```
Generalized linear models      No. of obs    =      27
Optimization      : ML        Residual df    =      25
                             Scale parameter = .0956893
Deviance          = 2.392233098 (1/df) Deviance = .0956893
Pearson           = 2.392233098 (1/df) Pearson  = .0956893
```

```
Variance function: V(u) = 1      [Gaussian]
Link function      : g(u) = u    [Identity]
```

```
Log likelihood      = -5.592610988      AIC      = .5624156
                             BIC      = -80.00369
```

AtRiskP~2011	Coef.	OIM Std. Err.	z	P> z	[95% Conf. Interval]	
GDP~20042011 _cons	.0526358 2.933389	.0367193 .1417833	1.43 20.69	0.152 0.000	-.0193327 2.655499	.1246044 3.21128

```
. glm LongTermUnemployLn2011 GDPppcdynamics20042011, family(gaussian) link(iden  
> tity)
```

```
Iteration 0: log likelihood = -28.381298
```

```
Generalized linear models      No. of obs    =      27
Optimization      : ML        Residual df    =      25
                             Scale parameter = .5175766
Deviance          = 12.93941598 (1/df) Deviance = .5175766
Pearson           = 12.93941598 (1/df) Pearson  = .5175766
```

```
Variance function: V(u) = 1      [Gaussian]
Link function      : g(u) = u    [Identity]
```

```
Log likelihood      = -28.3812978      AIC      = 2.250467
                             BIC      = -69.45651
```

LongTer~2011	Coef.	OIM Std. Err.	z	P> z	[95% Conf. Interval]	
GDP~20042011 _cons	.1114875 .8616337	.0853985 .3297468	1.31 2.61	0.192 0.009	-.0558905 .2153418	.2788654 1.507926

```
. glm EarlyLeavEduLn2011 GDPppcdynamics20042011, family(gaussian) link(identi  
> ty)
```

```
Iteration 0: log likelihood = -15.50373
```

```
Generalized linear models      No. of obs    =      27
Optimization      : ML        Residual df    =      25
                             Scale parameter = .1993902
Deviance          = 4.98475499 (1/df) Deviance = .1993902
Pearson           = 4.98475499 (1/df) Pearson  = .1993902
```

```
Variance function: V(u) = 1      [Gaussian]
Link function      : g(u) = u    [Identity]
```

```
Log likelihood      = -15.50373012      AIC      = 1.296573
                             BIC      = -77.41117
```

EarlyLe~2011	Coef.	OIM Std. Err.	z	P> z	[95% Conf. Interval]	
GDP~20042011 _cons	-.1571526 2.960724	.0530047 .2046658	-2.96 14.47	0.003 0.000	-.26104 2.559587	-.0532652 3.361862

Source: own estimates.

Original citation: Lechman, E. (2013). Socio-economic exclusions as an hindrance for economic development. A comparative study for the European countries. GUT FME Working Papers Series A, No.9/2013(9). Gdansk (Poland): Gdansk University of Technology, Faculty of Management and Economics.

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