LEVEL OF LIVING AND WELL-BEING AS MEASURES OF WELFARE: EVIDENCE FROM EUROPEAN COUNTRIES

Helje Kaldaru, Anneli Kaasa, Katrin Tamm[1]
University of Tartu

Abstract

The aim of the present study is to elaborate generalized indicators describing objective and subjective aspects of welfare and analyze the relationships between them based on the sample of European countries. While applying the quality of life approach we differentiate economic, human capital, social capital and emotional aspects of welfare. With help of confirmatory factor analysis generalized objective level of living and subjective well-being indicators to measure all mentioned aspects will be composed. Our results show that in countries with objectively lower positions the subjective assessments on welfare tend to be higher. Although an ideal situation could be imagined where objective and subjective assessments were equal, there are deviations from the equilibrium to both directions.

Keywords: Welfare, Level of living, Well-being

Introduction

Many economies in Europe, and Estonia among them have developed relatively fast during the last decades until 2008. In objective terms the economic success during this period has been indisputable. At the same time, there are some reservations about whether these changes have promoted the overall gain in welfare and whether people are satisfied with their level of living and well-being. Subjectively perceived satisfaction with life depends on several factors which cannot only be expressed in disposable money. Although there are studies that indicate the positive relationship between economic development and happiness (see Inglehart *et al.* 2008), then those in line with the "Easterlin paradox" suggest that there is no link between the level of economic development of a society and the overall happiness of its members (see Easterlin 2001). For instance, according to the University of Michigan's World Values Survey 2008 (World Values … 2008) Colombia ranked as the third country in the world according to perceived subjective well-being while its GDP per capita amounted only 9000 USD in 2008 (The World … 2009). For comparison, Estonia ranked as the 84th in the same list (World Values … 2008), while its GDP per capita was exceeding 21900 USD in 2008 (The World …). Hence, welfare is also influenced by the environment, i.e. culture, values, norms and social behavior of other society members. Therefore, measurement of welfare presumes taking into consideration not only economic but also social aspects.

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The aim of the present study is to elaborate generalized indicators describing objective and subjective aspects of welfare and analyze the relationships between them based on the sample of European countries. As the sample consists of countries differing considerably in terms of their socio-economic development level, but belonging to the European cultural space, the results of the study could be applied to draw conclusions about the general tendencies in welfare formation by various aspects of it. The novelty of our study proceeds from the more composite approach in measuring welfare whereas selected initial indicators reflecting various aspects of welfare will be generalized as well as additional aspects of welfare compared to previous studies will be included into the analysis.

The article is organized as follows: Section 1 provides the theoretical framework for the analysis; Section 2 describes the data and methodology applied in the analysis; Sections 3-6 present the procedure of generalizing initial indicators of welfare measured both in objective and subjective terms and by various aspects of welfare. In addition, the relationships between objective and subjective indicators of welfare in observed countries by various aspects of it will be drawn; Section 7 provides the comparative analysis of the observed countries based on objective level of living and subjective well-being; Finally, discussion and conclusions of the results will be presented.

1. Theoretical framework

The main idea and final goal of a country's economic policy should be the maximum welfare of its residents. There is no common understanding about what welfare means or consists in (Bognar 2005) and the concept of welfare has changed in the course of time. Initially, only material wealth was considered when speaking about welfare, but at the end of the 1960s welfare became a multidimensional concept, taking account of immaterial aspects, like health or social relations as well (Berger-Schmitt and Noll 2000). Generally, it can be said that welfare refers to "how well a person's life goes for that particular person" (Bognar 2005). Whether a person's life is going well for that person depends on two broad aspects: first, the objective living conditions and second, the perception of these conditions and the subjective well-being of individuals. Both aspects are included into the quality of life approach, which is nowadays the most widely recognised and the most frequently used framework for analyzing welfare at the society level (Berger-Schmitt and Noll 2000). Quality of life has been often viewed as the main policy goal (Costanza *et al.* 2008; Shackman *et al.* 2005).

Although in the literature of previous decades the welfare theories often focused on either objective or subjective aspects and measures of quality of life, nowadays there is a common agreement that both objective and subjective features should be included when analyzing quality of life (Berger-Schmitt and Noll 2000). Thus, quality of life can be defined as "the extent to which objective human needs are fulfilled in relation to personal or group perceptions of subjective well-being" (Costanza *et al.* 2008).

The objective aspect of welfare encompasses the objectively valuable resources that are available for an individual and that enable to meet basic human needs (Bognar 2005; Costanza *et al.* 2008). These resources include income and assets, education and knowledge, objective health status, social networks and trust etc. The data about these elements of welfare can be obtained without directly surveying the individuals. It is important to stress here that only the capabilities can be measured objectively. Capabilities are, however, only the means to achieve the desired ends. It is often not possible to measure objectively the extent to which the capabilities are utilised by the individual, for example, the satisfaction gained from the particular level of income depends largely, on what is consumed for this income. The utilisation of capabilities can be assessed by the subjective aspect of welfare that deals with individual's subjective experience – whether the individual enjoys his life or not. The subjective aspect covers individual's self-reported levels of satisfaction, happiness, pleasure, fulfilment and other indicators of subjective well-being (Costanza *et al.* 2008). The data for subjective indicators of welfare can only be gathered by questioning individuals about their perception of their quality of life.

The extent to which the objectively measurable capabilities will be utilised by the individuals in order to gain satisfaction with their lives depends on many factors, for example cultural context, individual's education, temperament and mental capacity, but also the on available information, social norms and preferences (Costanza *et al.* 2008). Therefore, it is important to form a policy to create conditions that increase the likelihood that individuals effectively utilise all their capabilities. While the characteristics of individuals and also the cultural context are hard to change, the availability of information can be improved and the prevailing norms can also be directed to some extent.

In the following analysis we will rest on the quality of life approach and include both objective and subjective indicators of welfare. The framework of our analysis is presented in Table 1.

Table 1. Different aspects of a country's average welfare

	Economic aspect	Human capital aspect	Social capital aspect	Emotional aspect
Objective welfare	Economic wealth and income, economic inequality	State of health and education, access to health and education services	Institutional quality	Absence of social exclusion
Subjective welfare	Satisfaction with the individual wealth and income	Satisfaction with access to education and health services, assessment of individual health	General and institutional trust, perceived support	Satisfaction with life, happiness

First, probably the most self-evident aspect of welfare is the economic one. On the objective side it includes wealth and income as well as their distribution between individuals. On the subjective side the satisfaction with one's economic state should be taken into account, which at least in part depends on individual's relative position compared to others (Luttmer 2005). The next aspect of welfare that has also often been covered with welfare analysis is connected with human capital. Here, the objective welfare incorporates both health condition and education level, but also the access to education and health care services. At the same time the satisfaction with these services and individuals health status constitute the subjective view on human capital aspect. The third aspect in our analysis reflects the social conditions by which individuals are enclosed and influenced. The objective state of this social capital aspect can be characterised by institutional or governance quality, while the subjective evaluation of this aspect is expressed by the trust in people in general as well as in different institutions, which in turn is connected with the perceived social support. Finally the emotional aspect should also be taken into account. Here, at first the objective side can be somewhat difficult to imagine, but the subjective side undoubtedly comprises the satisfaction with life as a whole (as opposed to the satisfaction with some specific aspect of life) and happiness. In case of previous three welfare aspects, the subjective welfare is based on the judgment of the objective state of the particular aspect. Here, the happiness is at least partly influenced by the perceived social exclusion or its absence, hence, at the objective side we can evaluate the absence of social exclusion, in terms of, for example, poverty or unemployment. In the following analysis we assume that all these four aspects are important factors of welfare.

2. Data and methodology

Conducting the empirical part of the work implies the inclusion of both objective and subjective measures of welfare into the analysis. We exploit secondary data collected from Human Development Report 2007/2008 (Human … 2007) and World Bank Aggregate and Individual Governance Survey 1996-2006 (Kaufmann 2007) for obtaining objective indicators and European Social Survey 2006 (European … 2006) for finding subjective indicators. The list of countries included in the analysis rests on the availability of the subjective assessments, i.e. the countries included in the third round (2006) of the European Social Survey. Accordingly, the objective indicators for welfare were also collected for the same countries. Altogether, we rely on the data about 24 European countries[2].

Our data set includes numerous indicators explaining different aspects of welfare and thus the indicators are often strongly related to each other. Use of several individual indicators would make the analysis quite complicated and incomprehensive, whereby in the present study we first attempt to generalize the initial indicators to a decreased number of aggregated variables which will be applied in

[2] Sample included Austria, Belgium, Bulgaria, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, the Netherlands, Latvia, Norway, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine and the United Kingdom.

further analysis. For the generalization procedure there are several methods available, but in our study factor analysis (method of principal components) has been chosen. This method suits very well for integrating correlating individual indicators as was the case here.

Factor analysis enables to capture initial indicators of subjective and objective welfare of various aspects into more generalized composite indicators solving also the problem of different scales pertaining to different initial indicators (see Appendix 1 for more detailed information about initial and generalized indicators used in this study).

The applied methodology of confirmatory factor analysis presumes the selection of appropriate initial indicators and the assessment about the generalized indicators of their ability to reflect the information in initial indicators. Confirmatory factor analysis can be used if the aggregated wholes describing different aspects of the analyzed phenomenon were identified. For instance, Whiteley (2000) in his paper has in a similar way generalized various aspects of social capital. In our study the appropriateness of initial indicators has been verified according to the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO), whereby only the indicators showing the common variance at least on mediocre level (value of MSA[3] at least 0.6) have been included to the analysis. While selecting the initial indicators we seek to achieve the highest possible intercorrelation between initial and generalized indicators (component loads above 0.7, but in most cases more than 0.9). Additionally, the description power of the generalized indicators was supposed to exceed 70% of the variation in initial indicators.

The component scores of these general indicators were used to compare the countries and to analyze the connections between the subjective and objective aspects of welfare. Component scores indicate the relative position of each country in the sample according to the described aspect; the average value of the component scores of one indicator is zero. Therefore, in the countries where the value of the component score is positive, the situation based on the aspect concerned is above average, and if the component score is negative, the situation is below average.

3. Economic aspect of welfare

In order to obtain the generalized objective indicator to assess the economic aspect of welfare, the general indicators of economic wealth and income distribution have been constructed with help of factor analysis. The indicator of economic wealth described 99.2% of the variation in GDP per capita and GNP per capita while the indicator of income distribution described 95.7% of the variation of Gini index and income ratio of the richest 10% and the poorest 10% of the population. Relationships between initial indicators and final indicator (component loads) were

[3] MSA – Measure of Sampling Adequacy indicates the appropriateness of individual variables for generalization with help of factor analysis. If value of MSA is below 0.5 the use of factor analysis is not justified.

0.99 in case of economic wealth and between 0.96-0.99 in case of income distribution. The general indicator of income distribution has been constructed so that the more equal income distribution, the higher value of the indicator (component score). All generalized indicators of welfare for observed countries expressed by component scores are given in Appendix 2.

For constructing the generalized subjective indicator regarding the economic aspect of welfare, satisfaction with level of living and quality of life as well as feeling about household's income have been integrated. Generalized indicator described 93.5% of the variation of initial indicators, component loads were between 0.95 and 0.98.

Indicators of wealth and satisfaction with level of living were mutually strongly correlated (correlation coefficient 0.92[4]). On the following Figure 1 the placement of observed countries according to the objective and subjective indicators of economic welfare will be presented.

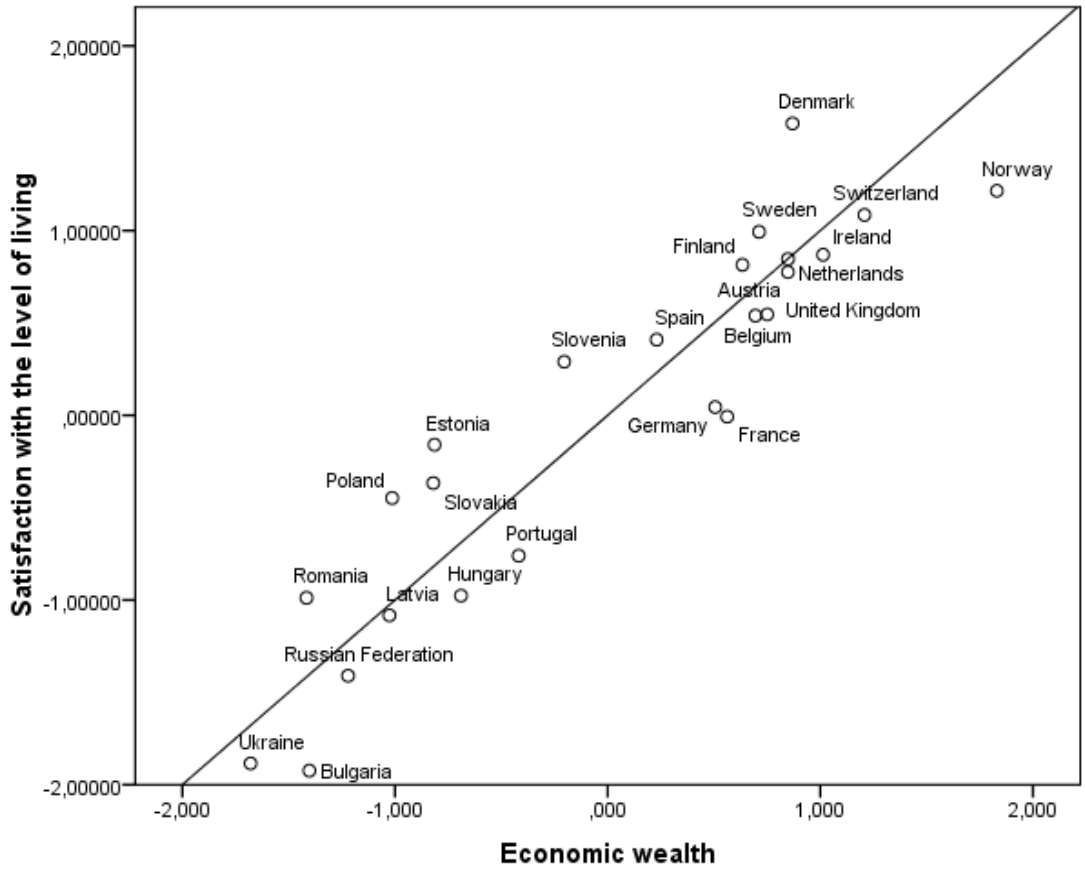

Figure 1. Relationship between economic wealth and satisfaction with level of living in observed countries.

The general tendency of a strong relationship between objective and subjective indicators of welfare is clearly seen from the Figure 1. Nevertheless, some relatively

[4] All correlation coefficients presented in this paper are statistically significant at the 0.01 level.

interesting deviations can also be observed. For example, Estonians seem to be more satisfied with their level of living compared to Hungary or Slovakia which are more or less as wealthy. On the contrary, people in Germany and France are more or less as satisfied with their level of living as people in Estonia, even though the objectively measured wealth level in these countries is considerably better. Denmark contrasts from others by the considerably higher satisfaction level, at the same time being approximately as wealthy as the Netherlands and Austria. If we would attempt to find the reasons for such differences from the other objective indicator of wealth – income distribution (see Figure 2) – one could suppose that the unexpectedly high satisfaction with level of living in Denmark and Slovenia could have been resulting from the more equal income distribution in these countries. However, in case of Estonia this assumption does not hold as income distribution here is more unequal than in Germany, France, Hungary or Slovakia.

Figure 2 reflects that satisfaction with level of living is not related to income distribution.

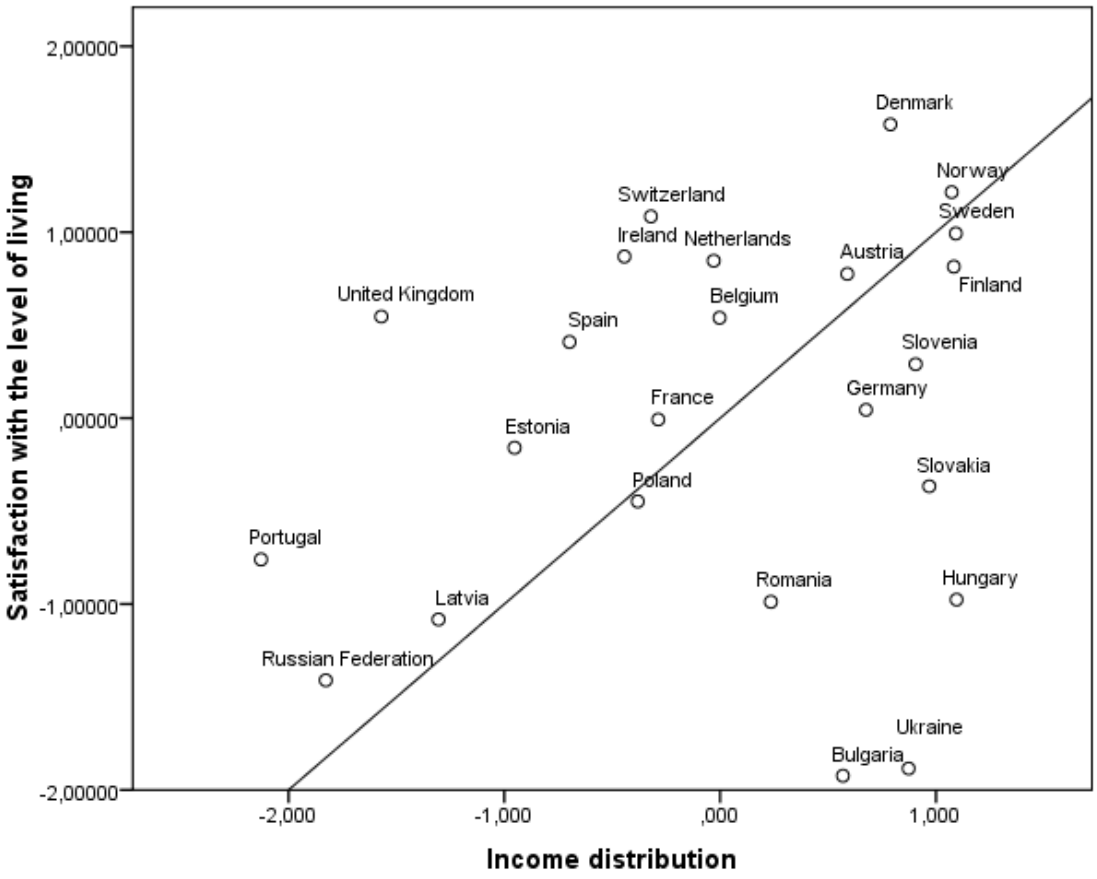

Figure 2. Relationship between income distribution and satisfaction with level of living in observed countries.

It is obvious from the Figure 2 that it was not possible to find statistically significant correlation between income distribution and wealth which was in fact an expected result. For example, Ireland and Switzerland that belong to the richest economies rank lower than average in the sample with regard to the equality of income

distribution. At the same time, Bulgaria and Romania which are among the poorest countries in the sample rank above average as far as the income equality is concerned. As a matter of fact, it is not possible to determine whether more equal income distribution is good or bad in and of itself. However, whether people perceive unequal income distribution to be a problem can be determined.

As a peculiarity of our analysis it turned out that the subjective assessment about income distribution - The survey question "Should government reduce differences in income levels?" - was not related with objective indicators. However, there appeared to exist a negative correlation with wealth: this question tended to be rather positively answered by representatives of poorer countries (correlation with wealth – 0.74).

Considerable concurrences and discrepancies can be seen when comparing countries according to the objective and subjective estimations on income distribution. Respondents who expected the biggest steps from government regarding equalizing income distribution lived in Bulgaria (the above mentioned survey question got 4.45 grades out of 5), the objective indicator of the country being above the average at the same time. In Ukraine also the problem has been perceived as essential, although in objective terms the income distribution was relatively equal there. At the same time, United Kingdom has traditionally been among the countries with the most unequal income distribution, but the respondents from United Kingdom did evaluate the need to equalize income distribution at one of the lowest levels (3.45 grades). Altogether it turned out from our analysis that the assessment about the need to equalize income distribution by government is reflected within the overall satisfaction with level of living, because the higher satisfaction level was related with lower needs regarding equalization of income distribution (correlation coefficient -0.82).

4. Human capital aspect of welfare

For objective assessment of the human capital aspect of welfare the generalized indicator has been created by integrating indicators of average life expectancy, public sector education and health care expenditures. The constructed indicator describes 73.3% of the variation of initial indicators. Relationships between initial indicators and final indicator (component loads) remained between 0.73 and 0.93. The generalized indicator is also quite closely related with the general research and development indicator (correlation coefficient 0.6), which we obtained as a result of generalizing the initial indicators describing patents, research and development costs and the number of scientific workers. Thereby, this indicator provides a summarized picture about the creation of human capital and its availability in a given country.

In order to obtain a subjective assessment of the human capital aspect of welfare, the satisfaction estimates about the availability of health care and education services as well as the satisfaction with one's health situation have been used. The initial indicators were strongly related with the obtained general indicator of satisfaction with education and health (all component loads 0.91). The generalized indicator described 82.6% of the variation of initial indicators. The obtained general indicator

was also related the respondents' level of formal education (years of school enrolment) (correlation coefficient 0.58).

The correlation between the generalized objective and subjective estimates of the human capital aspect of welfare was 0.76, thus the relationship is weaker than in case of different indicators explaining economic aspect of welfare. The distribution of observed countries according to objective and subjective estimates of the human capital aspect of welfare is presented in the following Figure 3.

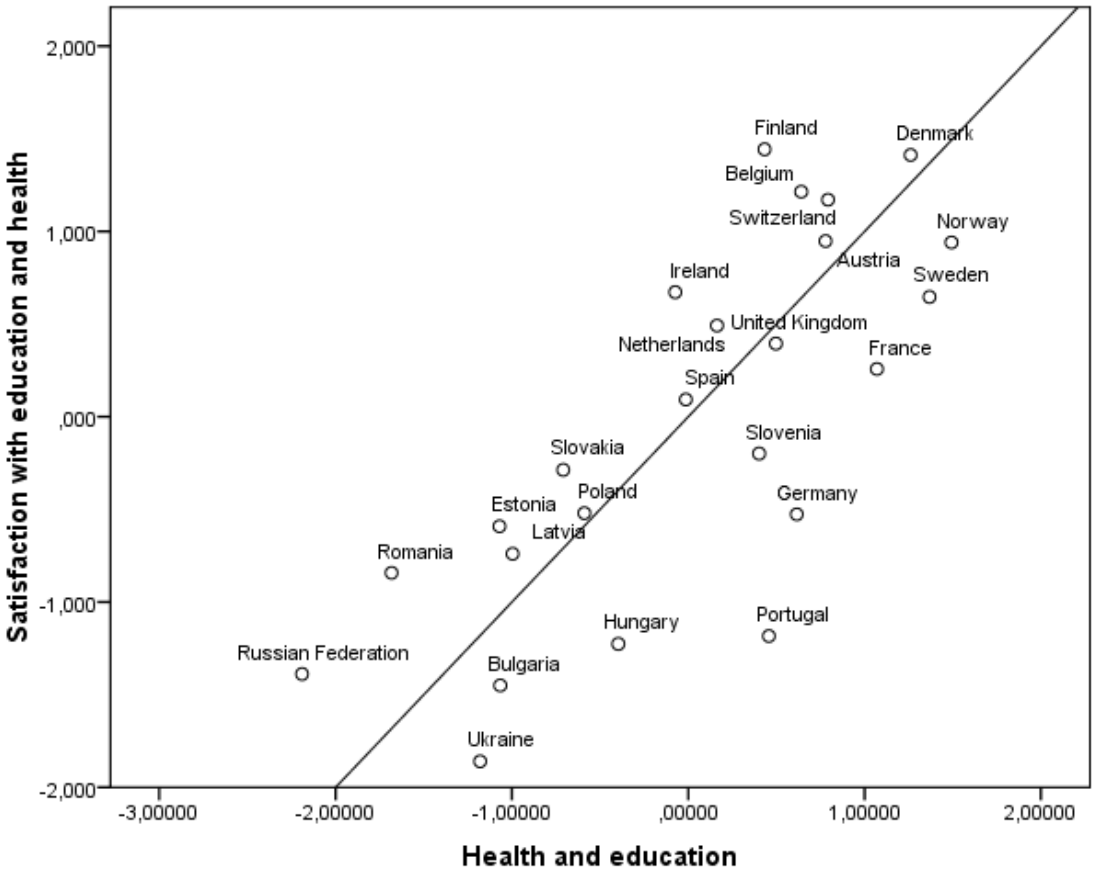

Figure 3. Relationship between indicators of education and health and satisfaction with education and health in observed countries.

We can see from the Figure that in some countries the difference between subjective and objective estimates in case of comparable objective situation is relatively big. For example in Estonia, there is much greater satisfaction with education and health than in Bulgaria or Ukraine, which are in more or less the same situation. Estonia's objective indicator has apparently been reduced by the relatively short average life expectancy, but people do not think about this when assessing the state of their own health. Particularly drastic is the difference in positions of Finland and Portugal, given that the estimates to the analogous objective situation differ by more than two and a half standard deviations from the subjective estimates in these countries. One possible cause could stem from the fact that based on the European Social Survey the length of formal education is only 7.4 years in Portugal, which is the minimal value for the indicator in the sample and lagging significantly below the average (12

years). Hence, the respondents of the survey have probably perceived problems with the availability of education.

5. Social capital aspect of welfare

Social capital indicators have not been used frequently in previous studies analyzing welfare. At the same time it has been recognized as an essential aspect for every human being affecting people's feelings and their assessment of their position in the society. As an objective measure of social capital, governance indicators have been used in this study. Governance indicators measure six dimensions of governance (Kaufmann *et al.* 2007): 1) Voice and Accountability (VA) measures the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media; 2) Political Stability and Absence of Violence (PS) measures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including domestic violence and terrorism; 3) Government Effectiveness (GoE) measures the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies; 4) Regulatory Quality (RQ) measures the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development; 5) Rule of law (RL) measures the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence; 6) Control of Corruption (CC) measures the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

The above mentioned aggregate governance indicators are based on hundreds of specific and disaggregated initial variables measuring different dimensions of governance, taken from 33 data sources provided by 30 different organizations. (Kaufmann *et al.* 2007)

The governance indicators describe the efficiency of governing institutions and the opportunities for citizens to participate in the society through the social networks. Hence, these indicators can be interpreted as objective estimates for social capital at the society level. We used the component scores computed according to the World Bank methodology and found a generalized indicator for governance for each country in the sample. As all six dimensions of governance are strongly related it is quite logical that the generalized indicator describes 92.4% of the variation of initial indicators. Component loads remained between 0.89 and 0.98.

Generally acknowledged subjective indicators for social capital are the various estimates of trust. Therefore, in our study we created the generalized indicator of trust based on the trust evaluations towards other people, government, legal system, police, politicians and political parties. The generalized indicator of trust describes 92.1% of the variation of initial indicators, component loads remained between 0.93

and 0.98. The correlation coefficient between objective and subjective measure of social capital was 0.85. The positions of countries according to these two estimates are presented in Figure 4.

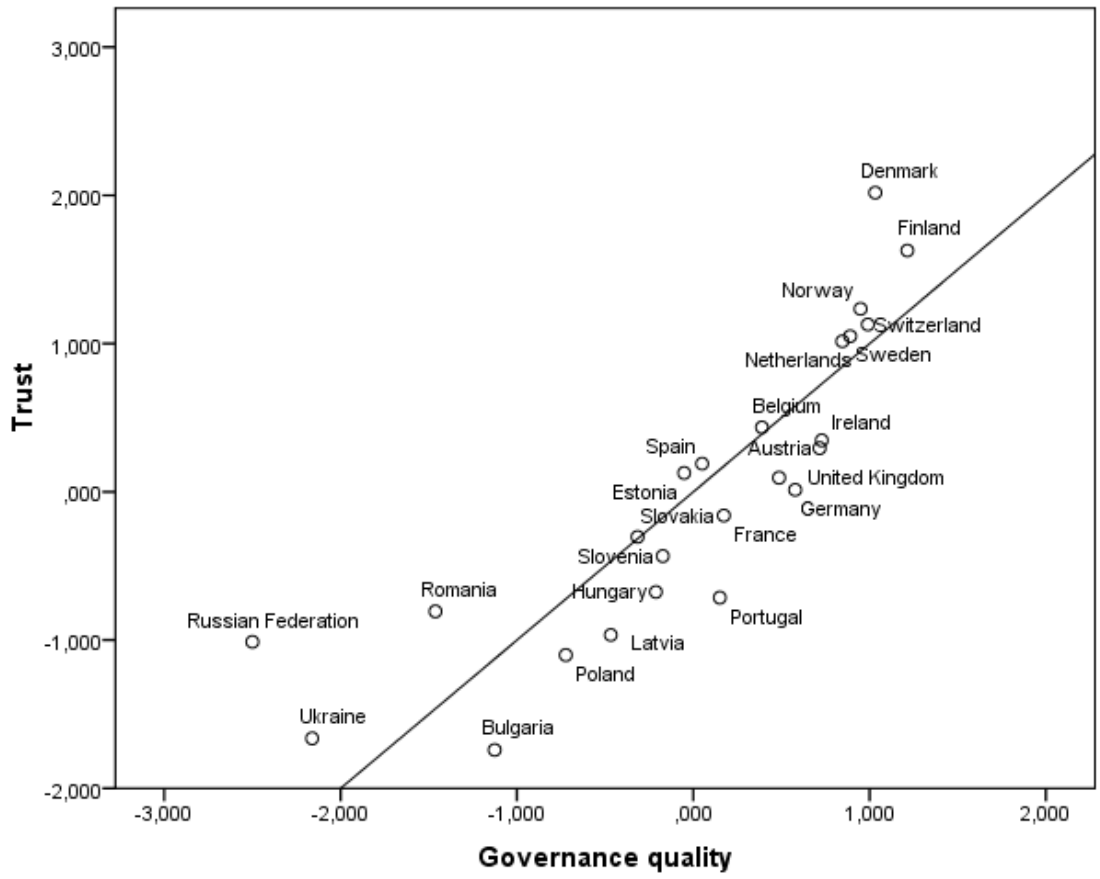

Figure 4. Relationship between indicators of governance quality and trust in observed countries.

The general picture is known from previous analysis: Denmark and Finland are positively emerging countries, and those lagging behind include Russia, Ukraine, Romania and Bulgaria. Besides that we can notice that in countries where both indicators are below the average, governance indicator varies more and in other countries indicator of trust is more diversified. Estonia is closer to the average than on previous figures and unlike in former cases, the indicator of trust is even slightly above the average here.

6. Emotional aspect of welfare

One of the factors enhancing the perception about welfare is the absence of social exclusion as expressed by Woolley (1998) or in other words social cohesion. Absence of social exclusion promotes the formation of social capital and enables to accumulate and use human capital. Objective measures for estimating the absence of social exclusion are rather complicated to discover. Commonly, poverty and long-term unemployment are considered to be indicators that at least indirectly express social exclusion. Regrettably, neither data about poverty nor long-term

unemployment indicators were available for all countries in our sample. Therefore we have chosen three proxy estimates for measuring the emotional aspect of welfare in objective terms. These indicators were ratio of unemployment in the labor force (an indirect measure for human capital use), the probability that a newborn's life expectancy remains below 60 years (an indirect measure for human capital creation) and judgment about the state's task to decrease income inequality (indirect measure for prevailing unfairness). Undoubtedly one could argue against the above mentioned choice of indicators, but the choice was made under the circumstances of limited data and the best of possible data set has been taken. The generalized indicator for estimating the emotional aspect of welfare objectively described merely 70% of the variation of initial indicators, whereas component loads remained between 0.76 and 0.88. Hereinafter we will use the component scores for social exclusion with the opposite sign as the social cohesion indicator.

In order to estimate the emotional aspect of welfare in subjective terms we integrated two indicators: individuals' satisfaction with life as a whole and their feeling of happiness. Insofar as the two indicators were strongly correlated with each other the generalized indicator described 98.8% of the variation of initial indicators and both component loads were 0.99. The following Figure 5 shows how the countries in our sample were distributed according to the subjective aspect of welfare.

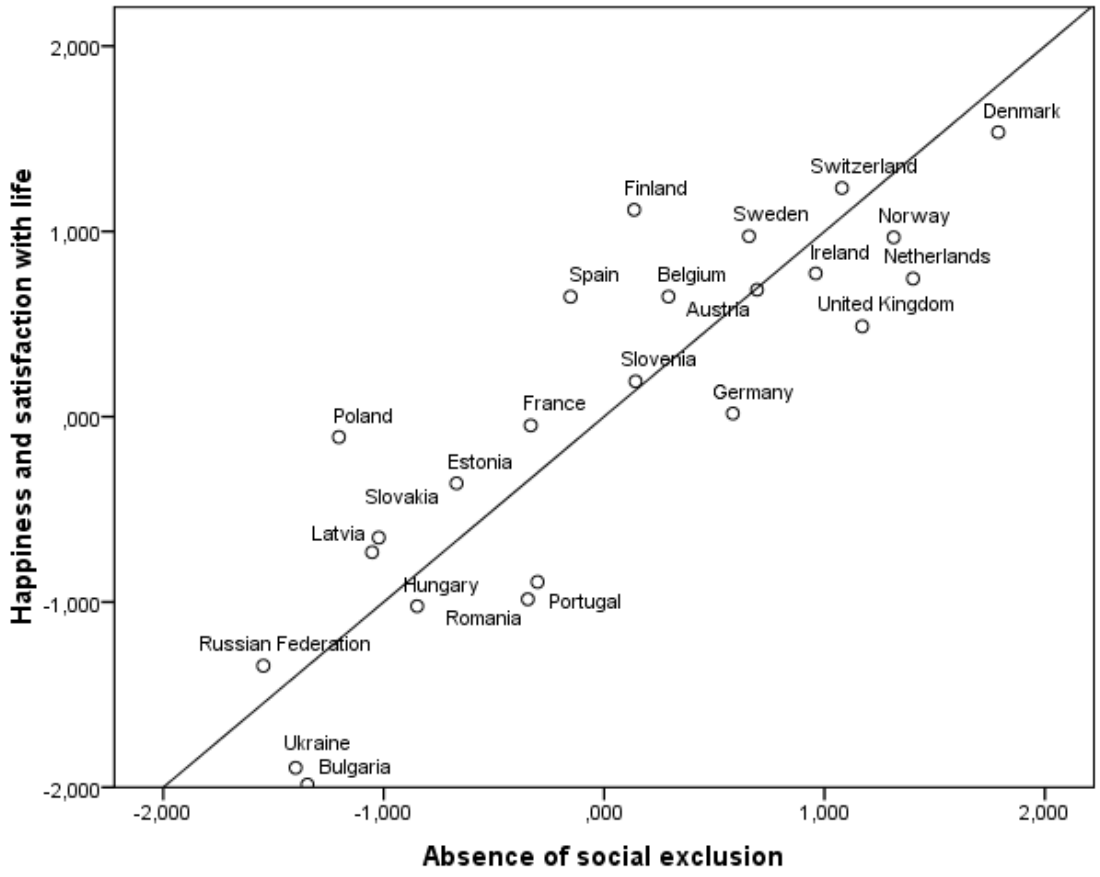

Figure 5. Relationship between absence of social exclusion and happiness and satisfaction with life.

The correlation coefficient between the objective and subjective measure of the emotional aspect of welfare was 0.86. Whereas the constructed generalized indicator for social cohesion was not perfect by its' content, the obtained result is relatively sound. Portugal that also in earlier figures emerged due to its' inferior positions, again shows the lower than average level in terms of both objective and subjective measures. One can notice relatively essential difference between objective and subjective measures, especially among the countries that lag behind. It would be intriguing to repeat the analysis based on the more relevant measures for social exclusion such as poverty and long-term unemployment rate.

7. Generalized objective and subjective welfare indicators

In the final stage of empirical analysis we will construct the generalized objective and subjective welfare indicators based on the estimates describing various aspects of welfare and created in previous sections of the paper. According to the theoretical framework the analysis was rest on, the first could be regarded as objective level of living and the second as the subjective well-being. By means of integrating all four objective measures of welfare (generalized indicators of wealth, human capital, governance and social cohesion) we obtained the final objective measure of welfare which described 89.1% of the variation of the mentioned generalized indicators. Component loads were between 0.93 (absence of social exclusion) and 0.97 (wealth). In order to obtain the generalized measure for estimating the subjective well-being, the indicators of different subjective aspects of welfare (satisfaction with level of living, satisfaction with education and health, trust and happiness and satisfaction with life) have been integrated into one final measure. The created indicator described 95.4% of the variation in these indicators. Component loads were in range of 0.96 (trust) and 0.99 (happiness and satisfaction with life). The correlation coefficient between the objective level of living and the subjective well-being estimates was 0.92. Figure 6 shows how the observed countries are positioned according to the generalized objective and subjective measures of welfare.

It appears from the Figure that the objective level of living is the highest in Norway and the lowest in Russia. While measured in subjective terms the situation is the best in Denmark and the worst in Ukraine. In countries that are located on the line or close to it, the objective and subjective estimates (almost) coincide. At the same time there are several countries where the measures of the objective level of living and the subjective well-being vary considerably. Countries which are located above the line of the Figure 6 show the higher subjective evaluation about the well-being than is reflected by the objective measures. In case of other countries the result is opposite, i.e. the subjective evaluation given by a country's residents is undervalued considering the objective situation in the given country. Based on these outcomes we have analyzed the differences between objective and subjective measures in observed countries.

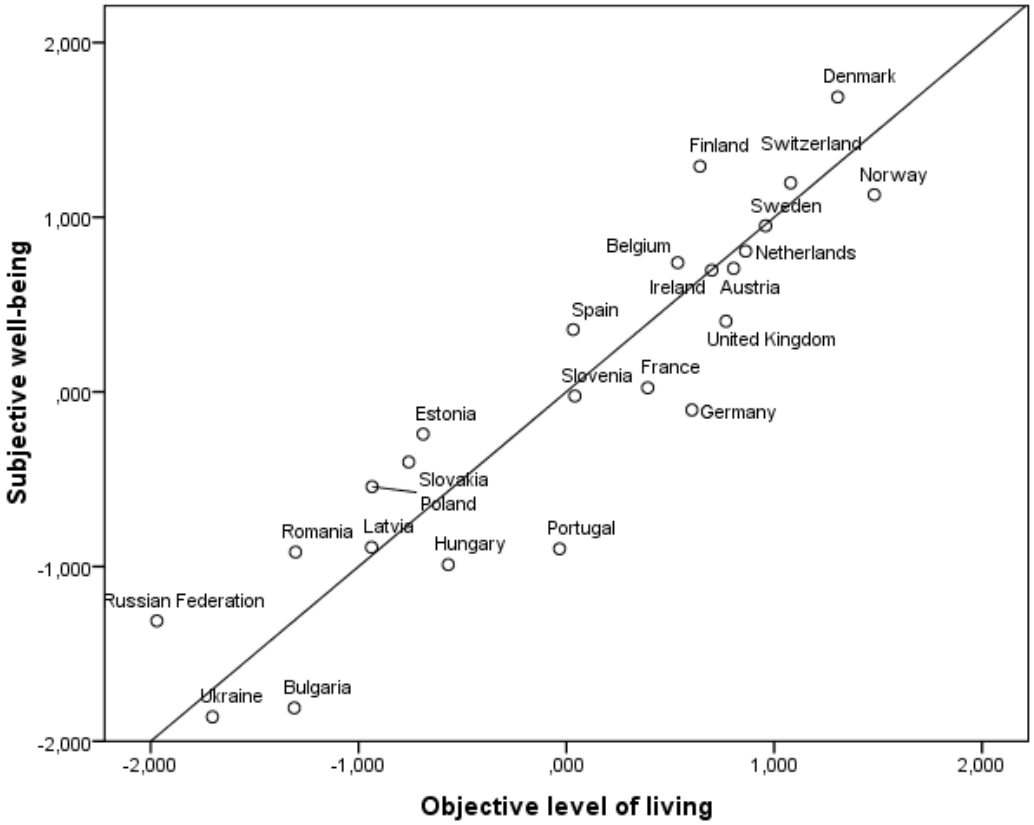

Figure 6. Objective level of living and subjective well-being in observed countries.

In the following Figure 7 countries have been ranked according to the difference between the subjective well-being compared to objective level of living.

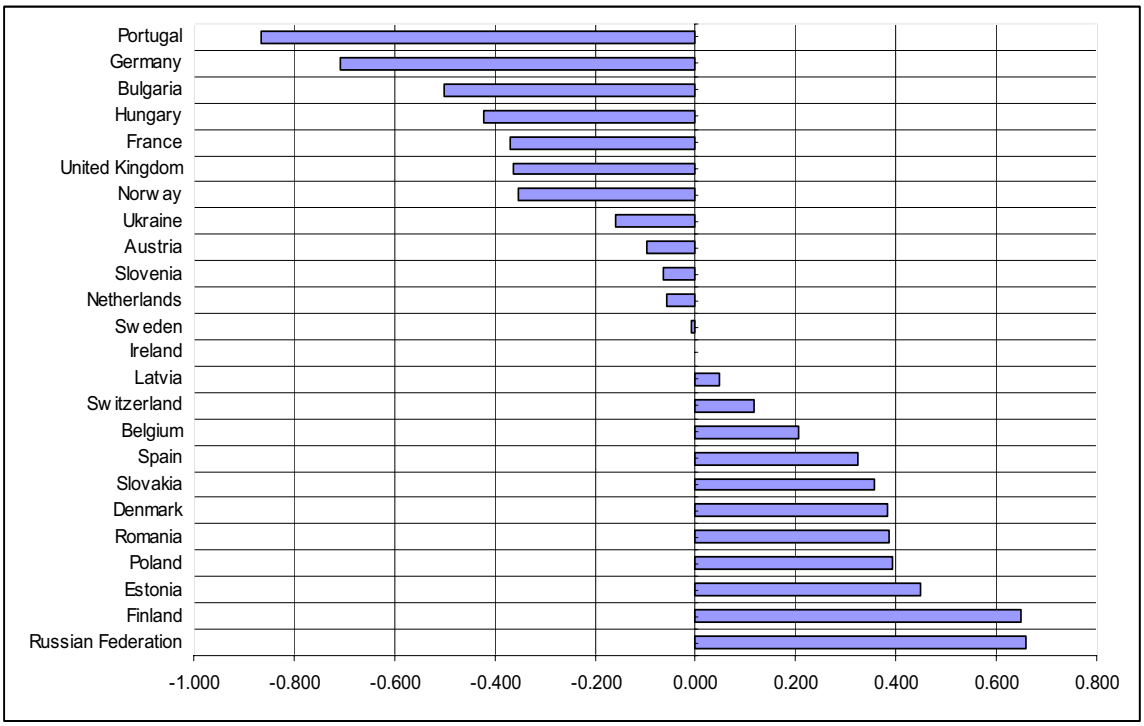

Figure 7. Differences in subjective and objective estimates of welfare in observed countries (measured in standard deviations).

In the light of Figure 7 it appears that results are rather intriguing, but sporadically quite difficult to interpret. It is not surprising to find Finland among the top of countries where subjective evaluations considerably exceed the objective ones as the objective level of life is relatively high and thus also the subjective attitude about the country and society should be positive. Estonia's high ranking is presumably influenced by the fast economic growth during the last couple of years and by the fact that the perceived well-being has considerably improved compared to the past. The European Social Survey has been conducted in 2006 when many people could have believed into the slogan "Let us bring Estonia amongst the five richest economies in Europe within five years". Subjective evaluations today would probably be much more reserved.

The greatest overvaluation of subjective well-being with respect to objective indicators exists in Russia. What could be the reason for that? Both propaganda and the custom to tolerate poor life conditions could be possible answers here. Nevertheless, the result is rather astonishing because in Ukraine, which has a similar historical and cultural background, the indicators are much closer to each other. Another interesting pair of countries is Bulgaria and Romania, where the situation is overvalued in Romania by a similar amount as it is undervalued in Bulgaria. The greatest dissatisfaction is expressed in Germany and Portugal. And why are people relatively satisfied with their life in Slovakia, but not so much in Slovenia, although Slovenia lies among the countries with the highest level of well-being? Apparently, we cannot answer these questions based only on the indicators included in the analysis, but more complicated cultural and social factors must be taken into consideration. The fact that satisfaction is always based on expectations must be taken into account. It can be said that in the highly developed countries with lower levels of satisfaction, such as Germany, France and England, expectations are greater for historical or cultural reasons.

Discussion and conclusions

In this paper we used the quality of life approach in order to evaluate the objective and subjective aspects of welfare. Theoretically, a person's quality of life is determined by two factors: objective level of living and subjective perception about well-being. Hypothetically, the objective and subjective assessments should be equal or if this is not the case, some policy measures could be applied to equalize them.

Based on the theoretical considerations we created a framework for analyzing objective and subjective determinants of welfare and their mutual relationships. According to the used framework we differentiated four aspects of welfare and found both objective and subjective indicators for measuring all these aspects. Economic aspect of welfare supposes the analysis of economic wealth, income distribution and inequality from the objective side and satisfaction with the individual wealth and income from the subjective side. Human capital aspect of welfare indicates the state of health and education and access to them from the objective point of view and satisfaction with the latter expressed as a subjective assessment. Social capital aspect of welfare indicates to the social conditions by

which individuals are enclosed and influenced. Thus, objectively we could investigate this by governance quality and subjectively by trust towards other people and institutions. Besides the mentioned aspects there is also the emotional aspect of welfare as happiness has been considered one of the essential reflections of welfare. It was a challenge for the authors to find indicators that would measure the emotional aspect of welfare in objective terms, but we have used some proxy variables to measure the absence of social exclusion. As measures for subjective perception of welfare, happiness and satisfaction with life assessments have been employed.

As far as the economic aspect of welfare is concerned, our results indicate that there is a strong relationship between economic wealth and satisfaction with level of living in observed European countries. Thus there is a relatively clear consistency in objective level of living and subjective perception about well-being. Nevertheless, some interesting deviations can be observed where countries which stay in the similar position in objective terms differ considerably regarding subjective assessments (for instance, Romania and Bulgaria, Estonia and Latvia, Denmark and Netherlands). Here the differences could probably be explained by culture, social norms, future expectations of the people etc. Regarding income distribution and satisfaction with level of living, the observed countries differ considerably in terms of the differences in objective and subjective assessments. These findings indicate a clear role for absolute income (wealth) and more limited role for income distribution in determining happiness. This is in line with the work of Stevenson and Wolfers (2008) who found in their comprehensive cross-country study that absolute levels of income were important in shaping happiness while there was a lesser role for relative income comparisons than was previously thought.

In case of the human capital aspect of welfare, the differences between objective and subjective estimates for the observed countries turned out to be relatively big. Although there were 14 countries out of 24 where the satisfaction with education and health and subjective health assessment have exceeded the objective level of education and health, on the average the subjective overvaluation in these countries was much lower than the subjective undervaluation in case of remaining ten countries.

Regarding the social capital aspect of welfare, our results show that generally the objective and subjective estimates are quite strongly correlated. The biggest deviation from the equilibrium point (where objective and subjective assessments are equal) implies for Russia where trust towards institutions and other people is considerably higher than the actually low governance quality would presume. Surprisingly, Ukraine and Romania are in the similar situation. At the other end of the line are Denmark and Finland whose overvalued assessments on trust can be better understood as in these countries also the governance quality is the highest in the sample.

Despite the use of indirect proxy variables to investigate the emotional aspect of welfare we obtained much better results than anticipated. There was a strong

relationship between objective and subjective indicators, although also some essential deviations from the equilibrium point could be seen. Nevertheless, there are slightly more countries overvaluing their happiness and satisfaction with life compared to the indicator reflecting the absence of social exclusion.

As an important result of our analysis it was possible to compose the generalized indicators of objective level of living and subjective well-being based on various aspects of welfare and the corresponding objective and subjective indicators reflecting them. The comparison of these final indicators brought us to the conclusion that as a general tendency, in countries with objectively lower positions the subjective assessments on welfare tend to be higher. Although an ideal situation could be imagined where objective and subjective assessments were equal, our results indicated deviations from the equilibrium to both directions. Approximately half of the countries showed overvaluation of subjective assessments and the other half reflected the opposite result. Subjective assessments were the most undervalued in case of Portugal and Germany, while the highest overvaluation existed in countries such as Russian Federation and Finland. At the same time, roughly in one third of the countries objective and subjective estimates on welfare varied only marginally.

An essential conclusion of the study affirms that the available resources and capabilities which reflect the objective side of welfare should be exploited by people in the best possible way in order to guarantee the high perception of subjective well-being. Employment of the available resources and capabilities in the society depends on several factors, but some of them such as individual characteristics or cultural background are quite complicated to change. However, while determining policy goals the better access to information and direction of social norms should be taken as an important task to facilitate better usage of resources and capabilities.

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Appendix 1. Indicators of welfare

Generalized indicator	Initial indicator	Source
Economic wealth	GDP per capita PPP US$	HDR 2007/2008
	GNP per capita PPP current international $	WDI
Income distribution	Gini index	HDR 2007/2008
	Share of income: richest 10% to poorest 10%	
	Share of income: richest 20% to poorest 20%	
Satisfaction with the level of living	How satisfied with present state of economy in country (average on scale 0-10)	ESS 3 2006
	Satisfied with standard of living (average on scale 0-10)	
	Feeling about household's income nowadays (average on scale 1-4)	
Health and education	Life expectancy at birth (years)	HDR 2007/2008
	Public expenditure on health (% of GDP)	
	Public expenditure on education (% of GDP)	
Satisfaction with education and health	State of education in country nowadays (average on scale 0-10)	ESS 3 2006
	State of health services in country nowadays (average on scale 0-10)	
	Subjective general health (average on scale 1-5)	
Governance quality	Voice and accountability (average 0)	Kaufmann *et al*. 2007
	Political stability and absence of violence (average 0)	
	Government effectiveness (average 0)	
	Regulatory quality (average 0)	
	Rule of law (average 0)	
	Control of corruption (average 0)	
Trust	Most people can be trusted or you can't be too careful (average on scale 0-10)	ESS 3 2006
	Trust in country's parliament (average on scale 0-10)	
	Trust in the legal system (average on scale 0-10)	
	Trust in the police (average on scale 0-10)	
	Trust in politicians (average on scale 0-10)	
	Trust in political parties (average on scale 0-10)	
State of social exclusion	Unemployment rate (% of labor force)	HDR 2007/2008
	Probability at birth of not surviving to age 60+ (% of cohort 2000-2005)	
	Government should reduce differences in income levels (average on scale 1-5)	ESS 3 2006
Happiness and satisfaction with life	How satisfied with life as a whole (average on scale 0-10)	ESS 3 2006
	How happy are you (average on scale 0-10)	

Appendix 2. Generalized indicators of welfare in observed countries

Country	Economic wealth	Income distribution	Satisfaction with level of living	Education and health	Satisfaction with education and health	Governance quality	Trust	Absence of social exclusion	Happiness, satisfaction with life	Objective level of living	Subjective well-being
Austria	0.848	0.589	0.775	0.778	0.948	0.716	0.295	0.694	0.685	0.805	0.707
Belgium	0.695	-0.003	0.539	0.641	1.214	0.389	0.435	0.292	0.648	0.536	0.740
Bulgaria	-1.403	0.569	-1.924	-1.066	-1.450	-1.126	-1.741	-1.346	-1.985	-1.309	-1.809
Denmark	0.870	0.789	1.580	1.261	1.412	1.032	2.018	1.788	1.535	1.306	1.688
Estonia	-0.814	-0.953	-0.159	-1.071	-0.591	-0.052	0.127	-0.669	-0.359	-0.689	-0.242
Finland	0.634	1.083	0.815	0.433	1.443	1.214	1.628	0.136	1.117	0.643	1.291
France	0.562	-0.287	-0.008	1.070	0.257	0.173	-0.160	-0.333	-0.047	0.392	0.024
Germany	0.505	0.676	0.044	0.615	-0.526	0.578	0.013	0.584	0.017	0.604	-0.104
Hungary	-0.690	1.095	-0.977	-0.397	-1.226	-0.212	-0.675	-0.848	-1.022	-0.569	-0.989
Ireland	1.013	-0.444	0.869	-0.074	0.672	0.729	0.347	0.960	0.773	0.699	0.697
Latvia	-1.026	-1.305	-1.083	-0.996	-0.740	-0.468	-0.966	-1.052	-0.732	-0.938	-0.890
Netherlands	0.848	-0.030	0.847	0.163	0.492	0.846	1.015	1.402	0.745	0.863	0.806
Norway	1.830	1.073	1.215	1.493	0.941	0.949	1.234	1.314	0.968	1.482	1.129
Poland	-1.014	-0.382	-0.448	-0.590	-0.520	-0.723	-1.101	-1.203	-0.110	-0.935	-0.543
Portugal	-0.419	-2.127	-0.760	0.457	-1.184	0.150	-0.714	-0.302	-0.892	-0.033	-0.898
Romania	-1.416	0.235	-0.989	-1.683	-0.842	-1.463	-0.807	-0.346	-0.985	-1.303	-0.917
Russian Federation	-1.221	-1.827	-1.410	-2.190	-1.389	-2.501	-1.012	-1.546	-1.344	-1.971	-1.311
Slovakia	-0.820	0.969	-0.367	-0.709	-0.287	-0.316	-0.304	-1.022	-0.652	-0.758	-0.402
Slovenia	-0.204	0.906	0.290	0.402	-0.199	-0.173	-0.434	0.143	0.191	0.041	-0.024
Spain	0.231	-0.698	0.409	-0.014	0.093	0.050	0.190	-0.152	0.648	0.033	0.357
Sweden	0.712	1.092	0.993	1.368	0.646	0.890	1.050	0.658	0.974	0.959	0.951
Switzerland	1.208	-0.321	1.085	0.792	1.171	0.991	1.129	1.079	1.234	1.079	1.196
Ukraine	-1.679	0.873	-1.885	-1.180	-1.860	-2.161	-1.663	-1.400	-1.895	-1.703	-1.861
United Kingdom	0.751	-1.570	0.546	0.497	0.395	0.487	0.095	1.171	0.488	0.768	0.404