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Developing and testing a new measure of social climate

Analysis of the annual surveys on social climate and trends



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Introduction

To explore how people perceive the current social situation and trends a new Eurobarometer questionnaire was developed to examine people's satisfaction with the following domains: (1) their personal situation, (2) the national economic situation and the socio-economic environment in their country, and (3) the social policy situation. The questions in each domain refer to an evaluation of the current situation, past experiences and future expectations. The first survey to contain the newly developed questions was carried out in 2009 (EB 71.2),² and this was followed by a second wave in 2010 (EB 73.5), though previous Eurobarometer surveys also contained some questions that appear in the new set. Henceforth, the same set of questions will be asked every year in order to monitor social climate.

In this research note, our aim is to work out subjective indicators that are suited to the measurement of the social climate. The term 'social climate' is used to refer to the aggregated 'mood' within a society (by analogy with weather and temperature). We are interested in what social concerns are on the minds of most people, as well as in what they think about their own country's economy and policy efficiency, and about the position of their household. In this essay, in addition to examining aggregated country-level data, we take steps to analyse the micro data and to formulate suggestions for measuring and reporting social climate.

Arguing in favour of the importance of a favourable social climate in a country, we might cite Hirschman (1970), who describes the options facing people who find themselves in a failing organization. Aside from displaying loyalty (doing nothing), they can exit (withdraw from the relationship) or find their voice (vote to bring about reform). As Hirschman explains, if they exit, people leave no opportunity for change, and the organization may not realize their dissatisfaction. A learning organization finds it more constructive to encourage people to express their dissatisfaction than to let them exit. The organization, however, should use this feedback to halt the decline in the mood of the people. As far as our research question is concerned, if the social climate in a country is favourable, people have greater trust in the institutions and the political leaders. Instead of quitting, it is good if citizens try to bring about reform within the relationship. Otherwise, they will be close to exiting. This is probably more likely to occur in countries with an unfavourable social climate.

The structure of this research note is as follows. The first section raises the issue of the importance of work undertaken with subjective indices. In section two, we explain ways of measuring social climate. A methodological description is followed by the testing of a possible new measure of social climate. In section three we test the social climate index at a country level. We also compare the actual level of and change in some macro data with the level of and change in the social climate index using country averages. In section four we deal with some (micro) socio-economic correlates of social climate. In section five, a multivariate micro model of social climate is introduced. The sixth section discusses our results in the light of previous findings in the literature.

² See the Eurostat publication: European Commission (2010a).



I. Some theoretical remarks

In this research note, our aim is to develop a good measure of social climate, defined as people's satisfaction with various domains. We assume that the (subjective) social climate in a country is shaped by the (objective) circumstances of citizens (both on average and individually). We are aware, however, that the relationship could also work the other way round: it may be that people's (subjective) satisfaction influences the objective situation in a country both now and in the future. The latter hypothesis, however, is difficult to test with our data on a full European sample, since insufficient time has elapsed for us to observe the effects of subjective changes in mood on objective (macro) conditions (the questions we use to measure public opinion only started to be a regular full European Eurobarometer (EB) block in 2008). In this section we attempt to highlight the importance of measuring social climate. We start with a brief overview of the literature on satisfaction and happiness, and then go on to review some previous satisfaction indicators.

I.1. Satisfaction and happiness: a brief overview of the literature

In recent years, the development of satisfaction measures has become central not only to social but also to business and (most recently) economic research. While the fundamentals of neoclassical economics placed an emphasis on the utility function, it was realized only recently (Kahneman, 2000) that people's satisfaction is a useful empirical proxy for this. We should note at the outset that, although life satisfaction is sometimes used as a synonym for subjective happiness (or subjective well-being), questions that probe life satisfaction and happiness are slightly different. While satisfaction is more a cognitively driven evaluation of various circumstances, happiness refers to positive moods or feelings (Delhey, 2004: 2). Later on in this research note we measure social climate using satisfaction in various domains. However, our theoretical framework is strongly influenced by the happiness research, and particularly by the 'Easterlin paradox'.

The Easterlin paradox is named after Richard Easterlin, who found (Easterlin, 1974) that, while people (micro level) with higher incomes do report more happiness in a given country, an increase in aggregate income does not correlate with a rise in happiness. He proved his statement at the country level, too, and found, for example, that in Japan whereas there had been a fivefold increase in real per capita income between 1958 and 1987, there had been no increase in subjective well-being (Easterlin, 1995: 39–40). While the Easterlin paradox has been reassessed many times over (Hagerty and Veenhoven, 2003; Stevenson and Wolfers, 2008) it remains a puzzle to scholars. Contributing partly to the Easterlin paradox, Zagórski *et al.* (2010) argue that educational and material differences certainly influence personal happiness, but when many people attain higher education or wealth in a society the relative differences between the educated and the non-educated or between the affluent and the poor shrink. In other words, the results mean that with economic development the relative gain associated with education and income gets smaller, but being better educated and having more money *per se* increase personal satisfaction (and to a greater extent in poorer countries).

We believe the importance of the Easterlin paradox to be as follows. The finding that countries with higher living standards have a more favourable social climate can be interpreted as a consequence of the higher living standards. However, there are many contributions that throw new light on the Easterlin paradox: Brickman and Campbell (1971), for example, used the term 'hedonic treadmill' to refer to the phenomenon whereby people become accustomed to their improved living circumstances and then



go on to seek more (changing aspiration level).³ Richard Layard (2005) points out that if incomes are low, they are very important in terms of satisfaction. If income begins to grow, then, instead of absolute income, the relative income is more important for satisfaction. Kahneman *et al.* (2006) emphasize measurement problems and suggest calculating objective happiness, which is the sum of average happiness derived from an activity, weighted by the frequency with which the activity is performed. Suh *et al.* (1998) found that cultural differences (based on the research of Hofstede (2008) and Triandis (1994)) have a significant influence on life satisfaction. 'Individualistic' nations tend to be more satisfied than 'collectivist' cultures. The fact that people in individualistic countries report greater satisfaction can also be attributed to the fact that they tend to change their own circumstances more often than do people from collectivist countries, who tend to remain in bad conditions more often (Diener, 1996). Regarding the cultural impact on satisfaction Veenhoven (1994) found that satisfaction is not shaped by socialization within a particular country's culture, since the happiness of migrants is closer to that of the native population of their new country than to the inhabitants of the former homeland, hence early childhood socialization could be overwritten by a more recent socialization.

The direction between objective material situation and satisfaction could, however, be analysed the other way round, too. In other words we may also assume that greater satisfaction could have contributed to economic development in the past. As the results of micro analysis of panel data show, satisfaction can also have a positive impact on income (Graham and Fitzpatrick, 2002; Keller, 2008). Moreover, a set of measurements of consumer satisfaction has been applied in market research, inspired by research findings indicating that consumer satisfaction tends to improve the productivity of a firm and its long-term growth prospects (Fornell *et al.*, 2006). Consumer satisfaction often forecasts inflation better than economists can manage (Thomas, 1999). Several consumer satisfaction indices have been created to forecast market turbulence: the Michigan Consumer Sentiment Index, for example, uses five questions to establish consumer satisfaction.⁴ The American Customer Satisfaction Index (ACSI) measures customer satisfaction annually for more than 200 companies, interviewing some 80,000 Americans and asking about their satisfaction with the goods and services. As Fornell *et al.* (2006) pointed out, ACSI predicts stock-market performance, both for market indices and for individually traded companies. As we mentioned earlier, though, this direction of causation is not the focus of our analysis.

1.2. Previous cross-country indices measuring satisfaction

GDP is often treated as a measure of economic well-being, but the index is primarily constructed as a standardized measure of economic activity. GDP captures a country's overall economic output – in other words, all the final goods in the economy, regardless of whether they are consumed by households, firms or government. Since consumption and income are not the same, GDP is not an aggregated measure of households' wealth or income. As an alternative to GDP, several subjective well-being measures have been designed to make cross-country comparisons possible. Recently the French President Nicolas Sarkozy commissioned researchers to provide an overview of the weaknesses of GDP and to suggest more relevant indicators of social progress (Stiglitz *et al.*, 2009).

³ For instance, Brickman *et al.* (1978) found that lottery winners are not much happier than the average person.

⁴ Two questions about the change in personal financial situation at the household level, two questions focusing on the outlook for the economy over the short and longer terms, and one question about the buying conditions for household durables (Curtin, 2002).



Many new-generation indices focus on sustainable development, though the methodological grounding of these attempts varies:

- The Index of Economic Well-being places greater emphasis on inequality and insecurity than does GDP (Osberg, 2003).⁵
- The Happy Planet Index⁶ (HPI) was developed in 2006 by the New Economics Foundation⁷ to measure human well-being at a country level. The HPI index is a function of average subjective life satisfaction, life expectancy at birth and per capita ecological footprint (human consumption compared to natural resources).
- The Satisfaction with Life Index (constructed by Adrian G. White) extracts the life satisfaction (most of the data are from the World Values Survey) from the HPI. Based on this indicator, a World Map of Happiness is constructed.⁸
- The Economist Intelligence Unit has also created a quality-of-life index.⁹ This is the predicted value of country-level life-satisfaction scores. In the explanatory model, the following independent variables were used: GDP per capita, life expectancy, an index of political freedom, the divorce rate, an indicator of climate and geography, the unemployment rate, a measure of political freedom and the ratio of average male and female earnings.¹⁰
- The World Health Organization Quality of Life (WHOQOL) group also worked out an index for quality-of-life assessment that would be applicable cross-culturally and would measure the following domains: physical health, psychological health, social relationships and environment.¹¹

⁵ The index contains the following items: the current effective per capita consumption flows; net societal accumulation of stocks of productive resources; income distribution; and economic security.

⁶ <http://www.happyplanetindex.org/>

⁷ <http://www.neweconomics.org/>

⁸ <http://www.physorg.com/news73321785.html>

⁹ <http://www.eiu.com/>

¹⁰ http://www.economist.com/media/pdf/QUALITY_OF_LIFE.pdf

¹¹ Questionnaire may be accessed at: http://www.who.int/substance_abuse/research_tools/whoqolbref/en/



II. Developing a measure of social climate

In the development of a social climate measure we also deal with the questionnaire formulated by the European Commission in 2009. The questions were asked in all 27 member states of the European Union, within the framework of Eurobarometer (EB 71.2). Since previous Eurobarometer surveys also contained some questions from the new question set, we will also use Eurobarometer data 2008 (EB 70.1) in developing our social climate measure. The entire questionnaire from 2009 was asked in the 2010 survey (EB 73.5), but since the data were published only in early July 2010, we could not use them in the development of our social climate measure, though later in this paper we do use the data from 2010 (and the data from the other two datasets as well) to test the newly developed subjective indicator.

There are three types of questions (see Annex 1): (1) judgements about the current situation, (2) future expectation and (3) past experience. Each type of question contained 15 items, and so altogether there are 45 possible items. Working with so many items is complicated, partly because it is hard to interpret the results and partly because many of the indices are redundant – it is very possible that they measure the same phenomenon. Therefore, to simplify the set of variables used without risking a loss of significant information, we had to work out ways of reducing the number of possible indices. We have to (1) test which time (past/current/future) gives the best proxy for the phenomenon we want to measure, and (2) develop appropriate aggregation procedures to create the indices.

In order to develop social climate indices, we work with country-level data, since the aggregated mood of society is, by definition, a country-level phenomenon. Later in the paper we turn to individual-level determinants and correlates.

II.1. The three types of subjective indices

Driven by theoretical considerations and based on previous EB publications (European Commission, 2010) we first measure three types of phenomenon. We call these 'current satisfaction', 'long-run (dis)satisfaction' and 'expectation'.

In the (current) *satisfaction indices* we used people's assessments of the current status of their personal situation, the situation of their country and the situation in some social policy areas, with values ranging from -10 (not at all satisfied), through -5 (not very satisfied) and +5 (fairly satisfied), to +10 (very satisfied). The index can, therefore, theoretically range from -10 (all respondents saying they are not at all satisfied) to +10 (all respondents saying they are satisfied). We used country averages for the analysis. In Table 1, Pearson correlation coefficients are presented for various kinds of *satisfaction indices* measured in different years. Since the correlation coefficients are calculated at a country level, high coefficients mean a stable country ranking across the EU, while low coefficients mean the opposite. Since the correlation coefficients are high (even higher than 0.8), we can conclude that the positions of countries in a 'European perspective' are quite stable in terms of current satisfaction. We can observe, however, a small decline over time in the correlation coefficient *general satisfaction with life* (which is the only question for which we had a longer time series).



Table 1: The Pearson correlation coefficient between various kinds of *satisfaction indices* measured in different years (country averages, N=28)¹²

Domains	2009 ×2008	2009 ×2007	2009 ×2006	2009 ×2005	2009 ×2004
Your life in general	0.978	0.970	0.944	0.941	0.922
The area you live in	0.911	no data	no data	no data	no data
The healthcare system	0.973	no data	no data	no data	no data
The provision of pensions	0.977	no data	no data	no data	no data
Unemployment benefits	0.971	no data	no data	no data	no data
The cost of living	0.929	no data	no data	no data	no data
Relations between people from different cultural or religious backgrounds or nationalities	0.850	no data	no data	no data	no data
The way inequalities and poverty are addressed	no data	no data	no data	no data	no data
The way public administration operates	0.925	no data	no data	no data	no data
The affordability of energy	0.892	no data	no data	no data	no data
The affordability of housing	0.908	no data	no data	no data	no data
The economic situation	0.813	no data	no data	no data	no data
The personal job situation	0.932	no data	no data	no data	no data
The financial situation of your household	0.930	no data	no data	no data	no data
The employment situation	0.843	no data	no data	no data	no data

Notes: Satisfaction indices are calculated from the questions referring to the current situation by taking the arithmetic country averages, excluding the answer category 'Don't know' (DK) and assigning the value -10 to the response 'not at all satisfied', -5 to 'not very satisfied', +5 to 'fairly satisfied' and +10 to 'very satisfied'.

We assume that *satisfaction* and *long-run satisfaction* are different. The former evaluates the current situation, while to calculate the *long-run (dis)satisfaction* we consider both past experiences and future expectations. Long-run (dis)satisfaction is defined as the percentage of people who report that their situation 'got worse' in the last five years and who expect that the situation will be 'worse' or the 'same' in the next 12 months (for a certain area of concern). Since long-run (dis)satisfaction combines experience and expectation, the indicator expresses the proportion of totally pessimistic people in a society: those who do not expect things to improve and who have had bad experiences. A large value for this index indicates that the social climate is unfavourable in a society. (Unfortunately the questions to do with long-run expectation were first asked in 2009, and hence the stability of indices cannot be tested with time series data.)

To calculate *expectation indices* we used the questions referring to people's future expectations. For the expected changes in the next 12 months, respondents had the choice of 'better', 'worse' or 'the same' to articulate their expectations. A score was obtained by calculating the difference at the country level between those who said that things were getting better and those who said that they were getting worse (without using the 'same' or 'don't know' answers in the calculations). The resulting score can thus vary between -100 (all respondents saying that things are getting worse) and +100 (all respondents saying that things are getting better). The advantage of the expectation indices (over the other two types of index) is that questions were asked in previous Eurobarometer surveys, so we are able to see trends in some cases.

As is summarized in Table 2, future expectations are less stable over time than is current satisfaction. In the cases of economic situation and employment situation, the correlation

¹² The 27 member states and the EU average, in data 2006 N = 26 (25 member states and the EU average).



coefficient between the country means is medium or low, showing that, on average, people change their future expectations more rapidly. In other cases (financial situation of household), the extent of the correlation falls drastically as the time period increases.

Table 2: The Pearson correlation coefficients for various kinds of expectation indices measured in different years (country averages, N=28)¹³

	2009 ×2008	2009 ×2007	2009 ×2006	2009 ×2005	2009 ×2004
Life in general	0.797	0.777	0.670	0.602	0.675
The economic situation	0.433	0.546	0.276	0.250	0.255
Personal job situation	0.823	0.612	0.569	0.645	0.614
Financial situation of household	0.813	0.762	0.656	0.511	0.514
The employment situation	0.292	0.377	0.169	0.140	0.149

Notes: Expectation indices are calculated from the questions referring to the next 12 months. A score was obtained by calculating the difference at country level between those who said that things are getting better and those who said that they are getting worse (without including 'same' or 'don't know' answers in the calculation).

II.2. Guiding principles for testing the robustness of various subjective indices

Based on our theoretical and empirical knowledge, we worked out two guiding principles and tested the subjective indices against these conditions. The guiding principles help to find the appropriate type of subjective index for us to use later in our analysis.

1. Uniqueness

By *uniqueness* we mean that subjective indices created to measure different phenomena should be relatively independent of one another (otherwise they do not measure exclusively the phenomenon for which they were created). Uniqueness is measured using the correlation coefficient between different subjective indices at the European level. We are looking for a subjective measure that is relatively independent of other subjective measures. Independence is meant in relative terms. Our aim is not to create indices where the correlation is zero, because that is not possible with questions that are fairly similar. But we did want to minimize the correlation between the indices and to choose the most unique one. In other words, we wanted to use correlation coefficients to determine whether different indices really measure different things, or whether they are related. If the connection between different indices is large, then we can conclude that they are measuring the same phenomenon.

2. Predictability

We assumed that when people express an opinion about their personal situation, the situation of their country or the policy situation, they are considering the real status of their household or country. Good subjective indices therefore should *not* be independent of macroeconomic statistics or (in the case of an opinion poll) aggregated household characteristics. We should note that this criterion does not mean that subjective indices should be correlated with one particular macro dataset. We used macro data only as benchmarks, and tried to find the best correlated indicators from a set of macro data. Note that, from our point of view, people use past events to project their expectations,

¹³ The 27 member states and the EU average, in data 2006 N = 26 (25 member states and the EU average).



rather than simply guessing future events in advance. Consequently, we tested the correlation of subjective indices using macro data measured in previous years.¹⁴

Note that in developing social climate indices we worked only with country-level data, since our aim was to create a country-level indicator. The criteria we work with may not be suited to testing the goodness of the indicators at the individual level. Later in this analysis we work with micro data to reflect this problem so far as is possible.

II.2.1. Testing the uniqueness of the three kinds of indices

A good index measures unambiguously the phenomenon for which it is created. Since we defined three different types of indices, theoretically the correlation between them should be minimal. Otherwise (if the correlation of the three indices were relatively high) they would be measuring nearly the same content. It would then not make very much sense to use different indices. As Table 3 highlights, of the pairwise empirical correlation coefficients, the lowest is found between the satisfaction and expectation indices. So satisfaction indices are relatively independent of expectation indices, while the expectation and long-run (dis)satisfaction indices are quite similar.

Table 3: The Pearson correlation between the three types of indices in 2009 (country averages, N=28)¹⁵

	Satisfaction × Expectation	Satisfaction × Long-run (dis)satisfaction	Expectation × Long-run (dis)satisfaction
Your life in general	0.743	-0.881	-0.806
The area you live in	0.437	-0.782	-0.677
The healthcare system	0.460	-0.666	-0.864
The provision of pensions	0.175	-0.417	-0.779
Unemployment benefits	0.268	-0.526	-0.598
The cost of living	0.412	-0.644	-0.807
Relations between people from different cultural or religious backgrounds or nationalities	0.536	-0.707	-0.792
The way inequalities and poverty are addressed	0.455	-0.656	-0.829
The way public administration operates	0.069	-0.037	-0.924
The affordability of energy	0.579	-0.724	-0.828
The affordability of housing	0.086	-0.191	-0.776
The economic situation	0.460	-0.736	-0.838
The personal job situation	0.746	-0.827	-0.901
The financial situation of your household	0.804	-0.917	-0.931
The employment situation	0.006	-0.597	-0.647
Average (the average of the coefficients in the column)	0.416	-0.621	-0.800

A coefficient greater than 0.4 is statistically significant at least at the 0.05 level.

Notes: Satisfaction is calculated from the questions referring to the current situation by taking the arithmetic country averages, excluding the answer category DK and assigning the value -10 to the response 'not at all satisfied', -5 to 'not very satisfied', +5 to 'fairly satisfied' and +10 to 'very satisfied'.

¹⁴ More precisely, we used the latest available macro data, but in the majority of cases these data came from 2008 (which was the date of the latest available data at the time). In Table 4 the exact data of the macro statistics are indicated after the name of the macro-data. After we finished the development of our social climate measure, more recent macro statistics (even from 2009) were published by Eurostat. Since the within-country variation in these statistics is not large, it is not necessary to check the correlation with the newly published data.

¹⁵ The 27 member states and the EU average.



Expectation is calculated from the questions referring to the next 12 months. A score was obtained by calculating the difference at the country level between those who said that things are getting better and those who said that they are getting worse, without including 'same' or 'don't know' answers in the calculations.

Long-run (dis)satisfaction combines questions that refer to past experiences and future expectations. It is defined as the percentage of people who report that their situation 'got worse' in the last five years and who expect that the situation will be 'worse' or the 'same' in the next 12 months (for a certain area of concern).

II.2.2. Testing the predictability of the three kinds of indices

Since it may reasonably be assumed that public opinion (at least to some extent) reflects economic and policy events, we collected macroeconomic indicators (using the data of the Eurostat New Cronos database) in each field to which subjective indicators refer. From the set of macro indicators we chose those indices that correlated best with the particular subjective index.

Table 4 summarizes the Pearson correlation coefficients of subjective indices and some macro data. Of the three subjective indices, satisfaction indices show the highest correlation with the observed macro data. In the majority of cases, the strength of correlation is high (higher than 0.4, which also means that the parameter is significant at the 0.05 level, due to the small sample); but we can also find small correlation coefficients in some instances. The magnitude of the correlation coefficient is different for the various macro data (sometimes significantly so). As an example, consider the differences between correlations of opinion about personal job situation with the aggregate employment rate (on the one hand) and with the aggregate unemployment rate (on the other hand). The former seems to correlate more than the latter:¹⁶ it may be that the employment rate indicates a higher probability of being employed. It is interesting to speculate why this should be so. Perhaps the employment rate is, in practice, referred to less by the media, which tend to focus on unemployment. But we should add that the employment situation of the country (which is different from the personal job situation, by definition) is more a function of unemployment.

Another interesting finding of this analysis is that the aggregate household material deprivation index seems to perform better than GDP in terms of correlation with the financial situation of the household and with satisfaction with the economic situation of the country. It is widely known that GDP is not the same as aggregated household income, and it is reasonable to assume that people's satisfaction is more a function of their personal material position than of aggregate consumption in the country. A household's consumption might be shaped by a set of preferences and values, and it is hard to speculate on the influence that these factors have on satisfaction. For example, in households where saving is more valued than consumption, people may (or may not) be more satisfied than they are in households where the emphasis is on consumption. The material deprivation index performs relatively well in the analysis, since it correlates with many of the potential social climate indices.

We may reasonably assume that different indices behave differently in relation to macro data. As we saw in Table 3, the correlation between satisfaction indices and expectation indices is low. These two indices, however, should be different in terms of predictability as well. Consequently, the chosen macroeconomic benchmarks should be different in their

¹⁶ This is an interesting tendency, since the employment rate and the unemployment rate are not necessarily the opposite of one another. The employment rate represents people in employment as a percentage of the population of working age (15–64 years). Unemployed people are, however, according to the definition of Eurostat, those persons aged 15–74 who are not working, have looked for work in the last four weeks, and are ready to start work within two weeks (see Annex 6). In Sweden, for example, a very high level of the employment rate is accompanied by a medium level of the unemployment rate, while in Spain a medium level of the employment rate is accompanied by a very high level of the unemployment rate.



effects when we test attitudes about the current situation and when we examine attitudes about the future. As Table 4 shows, satisfaction indices fit relatively well with macro data measured in the same (or previous) years. If the expectation indices really differ from people's satisfaction, they should probably correlate with other kinds of macro data. People might use changes in past circumstances to project their expectations, and so we tested the correlation between expectation indices and the *change* (not the level) in macro data. Our results are summarized in Table 5. In general, expectation indices correlate very weakly with the change in macro economic data (but the other two indices – satisfaction indices and long-run (dis)satisfaction also perform relatively wrong). The relatively weak correlation coefficient reflects the fact that people build their expectations on the anticipated change in their personal situation in relation to some reference group.



Table 4: The Pearson correlation coefficient between the three types of subjective indices and the macro data (correlation between country-level data)

	Macro-data	Satisfaction indices (2009)	Expectation indices (2009)	Long-run (dis)satisfaction (2009)
Personal situation		Life in general		
	GDP PPP, 2008	0.786	0.588	-0.717
	HDI, 2007	0.725	0.489	-0.625
	Life expectancy of men at birth, 2007	0.650	0.557	-0.592
		Personal job situation		
	Employment rate, 2008	0.626	0.410	-0.394
	Unemployment rate, 2008	-0.443	-0.059	0.172
	People between 18 and 59 years living in jobless households, 2008	-0.302	-0.039	0.176
		Financial situation of household		
	Material deprivation for the 'Economic strain' and 'Durables' dimensions, 2008	0.922	0.681	-0.800
GDP PPP 2008	0.676	0.459	-0.578	
General situation in the country		The cost of living		
	Harmonized Indices of Consumer Prices, 2009	-0.475	-0.122	0.105
		The way public administration operates		
	Corruption Perceptions Index, 2009	0.716	0.094	0.004
		The affordability of energy		
	Material deprivation for the 'Economic strain' and 'Durables' dimensions, 2008	0.499	0.360	-0.288
	Harmonized index of energy prices, 2009	0.154	0.118	-0.278
	Gas prices, without taxes, 2009	0.155	0.054	-0.035
	Electricity prices, without taxes, 2009	0.071	0.132	-0.049
		The affordability of housing		
	Material deprivation for the 'Economic strain' and 'Durables' dimensions, 2008	0.535	0.206	-0.326
	Material deprivation for the 'Housing' dimension, 2008	0.354	0.004	-0.160
		The economic situation		
	Material deprivation for the 'Economic strain' and 'Durables' dimensions, 2008	0.629	0.481	-0.432
	GDP PPP 2008	0.480	0.369	-0.269
		The employment situation		
	Employment rate, 2008	0.501	-0.142	-0.114
Unemployment rate, 2008	-0.684	0.185	0.239	
Social protection and social inclusion		Healthcare provision		
	Self-reported unmet need for medical examination or treatment below 20% of median equivalized income, 2008	-0.651	-0.149	0.317
	Sickness/healthcare function in % of GDP, 2007	0.589	0.043	-0.029
	The provision of pensions			



Median pensions relative to median earnings, 2005	-0.158	-0.384	0.469
Old age function in % of GDP, 2007	0.165	-0.013	0.249
	Unemployment benefits		
Unemployment function in % of GDP, 2007	0.546	0.267	-0.363
	Relations between people		
Demand for right-wing extremism (DEREX)	-0.108	0.083	-0.068
	The way inequalities and poverty are addressed		
Income quintile share ratio, 2008	-0.578	0.161	-0.014

Appropriate macro data for the question on satisfaction with the area in which you live could not be found.

A coefficient greater than 0.4 is statistically significant at least at the 0.05 level.

For a detailed description of the macro indicators, see Annex 6.

Notes: Satisfaction is calculated from the questions referring to the current situation by taking the arithmetic country averages, excluding the answer category DK, and giving the value -10 to the response 'not at all satisfied', -5 to 'not very satisfied', +5 to 'fairly satisfied' and +10 to 'very satisfied'.

Expectation is calculated from the questions referring to the next 12 months. A score was obtained by calculating the difference at the country level between those who said that things are getting better and those who said that they are getting worse, without including 'same' or 'don't know' answers in the calculations.

Long-run (dis)satisfaction combines questions referring to past experiences and future expectations. It is defined as the percentage of people who report that their situation 'got worse' in the last five years and who expect that the situation will be 'worse' or the 'same' in the next 12 months (for a certain area of concern).



Table 5: The Pearson correlation coefficient between the three types of subjective indices and the change in macro data (correlation between country-level data)

		Satisfaction indices (2009)	Expectation indices (2009)	Long-run (dis)satisfaction (2009)
Personal situation		Life in general		
	Change in GDP, (2006–08)	0.518	0.446	-0.401
	Change in HDI, (2005–07)	0.163	0.272	-0.133
	Change in life expectancy of men at birth, (2005–07)	0.066	0.072	-0.028
		Personal job situation		
	Change in employment rate, (2006–08)	-0.051	-0.010	0.109
	Change in unemployment rate, (2006–08)	0.137	0.026	-0.172
	Change in the number of people living in jobless households, (2006–08)	0.286	0.191	-0.356
		Financial situation of household		
	Change in material deprivation for the 'Economic strain' and 'Durables' dimensions, (2006–08)	0.109	-0.065	0.053
	Change in GDP, (2006–08)	0.452	0.358	-0.369
General situation in the country		The cost of living		
	Change in Harmonized Indices of Consumer Prices, (2006–08)	0.461	0.153	-0.150
		The way public administration operates		
	Change in Corruption Perceptions Index, (2006–08)	0.258	0.024	-0.093
		The affordability of energy		
	Change in material deprivation for the 'Economic strain' and 'Durables' dimensions, (2006–08)	-0.363	-0.322	0.358
		The affordability of housing		
	Change in material deprivation for the 'Economic strain' and 'Durables' dimensions, (2006–08)	0.082	-0.351	0.172
	Change in material deprivation of 'Housing' dimension, (2006–08)	-0.169	-0.450	0.292
		The economic situation		
	Change in material deprivation for the 'Economic strain' and 'Durables' dimensions, (2006–08)	0.122	0.316	-0.126
	Change in GDP, (2006–08)	0.034	-0.006	0.083
		The employment situation		
	Change in employment rate, (2006–08)	-0.144	-0.041	0.338
	Change in unemployment rate, (2006–08)	0.306	0.001	-0.452



Social protection and social inclusion		Healthcare provision		
	Change in unmet need for medical examination or treatment, (2006–08)	-0.222	-0.079	0.058
	Change in sickness/healthcare function, (2006–08)	-0.168	0.090	0.074
		The provision of pensions		
	Change in old age function, (2006–08)	0.005	0.062	-0.085
		Unemployment benefits		
	Change in unemployment function, (2006–08)	0.164	0.092	-0.167
		The way inequalities and poverty are addressed		
Change in S80/S20, (2006–08)	-0.251	-0.581	0.515	

We were not able to find appropriate macro data for the question on satisfaction with the area in which you live. Due to lack of data, we could not calculate the change in macro data referring to the subjective index relations between people.

A coefficient greater than 0.4 is statistically significant at least at the 0.05 level.

For a detailed description of the macro indicators see Annex 6.

Notes: Satisfaction is calculated from the questions referring to the current situation by taking the arithmetic country averages, excluding the answer category DK, and giving the value -10 to the response 'not at all satisfied', -5 to 'not very satisfied', +5 to 'fairly satisfied' and +10 to 'very satisfied'.

Expectation is calculated from the questions referring to the next 12 months. A score was obtained by calculating the difference at the country level between those who said that things are getting better and those who said that they are getting worse, not including 'same' or 'don't know' answers in the calculations.

Long-run (dis)satisfaction combines questions referring to past experiences and future expectations. It is defined as the percentage of people who report that their situation 'got worse' in the last five years and expect that the situation will be 'worse' or the 'same' in the next 12 months (for a certain area of concern).

II.2.3. Choosing the appropriate subjective index

To summarize the research over the previous pages, we can conclude that satisfaction indices (questions about people's current situation) generally meet the criteria on which we wanted to choose the appropriate subjective measure. The index is relatively (not in absolute terms) independent of the other two indices (expectation, long-run satisfaction) and it fits reasonably well with the macro data. In what follows, we work only with satisfaction indices. By working with satisfaction indices, we consider only the current situation and do not have the forward and backward dimensions. To distinguish between these dimensions is very useful when we work with individual-level data; but when we work with aggregate country-level statistics it is less important or meaningful to ask the same question for past and future events. In other words, our data show that if social climate is the aggregated mood of society, it makes no difference whether this reflects the past, the future or the current situation. Across Europe, if people in a society are generally disappointed with their current situation, they are likely to have had bad experiences in the past and to have little hope of future change. Hence the ranking of countries in the EU will be very similar whether we use current satisfaction, past experiences or future hopes. However, these correspondences do not hold at the individual level. Dissatisfied people may be very optimistic about the future if they are anticipating upward mobility or if they expect a positive change relative to their reference group. The next section is devoted to an attempt to identify a proper measurement of satisfaction and to determine ways of reducing the number of indices.



II.3. Alternatives to average scores: choosing the appropriate aggregate measure of social climate

Up until now we have analysed the country averages for answers to various questions. Now we move on and try to find other, distribution-sensitive measures. We employed the following techniques to calculate the indices:

- Taking the within-country average, without DK.
- (Percentage of 'very good' + 'rather good') – (Percentage of 'very bad' + 'rather bad').
- Percentage of 'very good'.
- (Percentage of 'very good' + 'rather good') / (Percentage of 'very bad' + 'rather bad').
- (Percentage of 'very good') / (Percentage of 'very bad').

The correlations between the various kinds of measures are fairly high (tables are shown in Annex 2). Note that these are country-level correlations as (naturally) some of the measures cannot be calculated at the individual level. In Annex 2 we can see very high correlation coefficients between the differently calculated indicators. Hence, the ranking of any given country relative to other European countries is fairly independent of the way in which the satisfaction indices are measured. In other words, the distribution of answers across the answer categories does not have any significant impact on the relative position of countries within the EU (at least not at the country level). It seems reasonable to work with the simplest measurement: country averages. On the other hand, country averages are not sensitive enough to the distribution, and it could be problematic to measure the within-country change over time. Testing the problem requires more data points for each country (not just three) and a longer time period than we have, but the problem really does need to be tested more carefully.

One exercise remains: we have to find out ways of reducing the number of satisfaction indices (15) and of calculating cumulative indices. Since the 15 satisfaction indices refer to three areas: personal situation, the situation of the country and the policy situation, we created one cumulative index for each area.¹⁷ In the following sections we will work with the average of items,¹⁸ listed under the three different domains (personal satisfaction, satisfaction with the country, satisfaction with policy) as follows:

I. Personal satisfaction:

On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead? (Very satisfied, fairly satisfied, not very satisfied, not at all satisfied).

- How would you judge the current situation in each of the following (very good, rather good, rather bad, very bad):

¹⁷ Using Cronbach's Alpha, we tested the internal consistency of the questions referring to one area. The reliability of questions is high, and Cronbach's Alpha is around 0.75 for the various indices. We also created a weighted composite index using principal component analysis, applying different weights for different items. We performed this analysis for the years 2008, 2009 and 2010. According to the findings, there are no differences between the principal components calculated in the different years. The results (see Annex 3) highlight the fact that the internal relationship of the questions used to construct the three cumulative indices is stable over time. Furthermore, the results from the principal component analysis highlight the fact that the way measurement is carried out has no influence either at the individual level or at the country level (the correlation coefficients are around 0.95 in both cases).

¹⁸ Simply calculating the average of items (without DK) and taking the country average.



- the area you live in
- your personal job situation
- the financial situation of your household

II. Satisfaction with the country's situation/satisfaction with the socio-economic environment:¹⁹

- How would you judge the current situation in each of the following (very good, rather good, rather bad, very bad):
 - the cost of living
 - the affordability of energy
 - the affordability of housing
 - the way public administration operates
 - the economic situation
 - the employment situation

III. Policy satisfaction

- How would you judge the current situation in each of the following (very good, rather good, rather bad, very bad):
 - healthcare provision
 - the provision of pensions
 - unemployment benefits
 - relations between people from different cultural or religious backgrounds or nationalities
 - the way inequalities and poverty are addressed²⁰

III. Measuring social climate – a country-level analysis

In previous sections we decided that:

We use the subjective questions referring to a respondent's judgements about the current situation.

We calculate social climate indices simply by taking the average of the answers to the relevant questions.

We use three social climate indices: personal satisfaction, satisfaction with the country's situation (satisfaction with the socio-economic environment) and satisfaction with policy (as regrouped from the above items).

In this section we analyse these indices at the country level. We describe (1) the actual level of the indices (simply by taking the country averages), followed by (2) the internal correlation between the three indices, (3) the stability of the indices over time, (4) the relationship of the indices with country-level macro statistics, and finally (5) the time changes in the social climate indices.

¹⁹ We will use the two expressions interchangeably in the remainder of the analysis.

²⁰ The question was not asked in a similar way in 2008, so it is not included in satisfaction with policy for 2008.

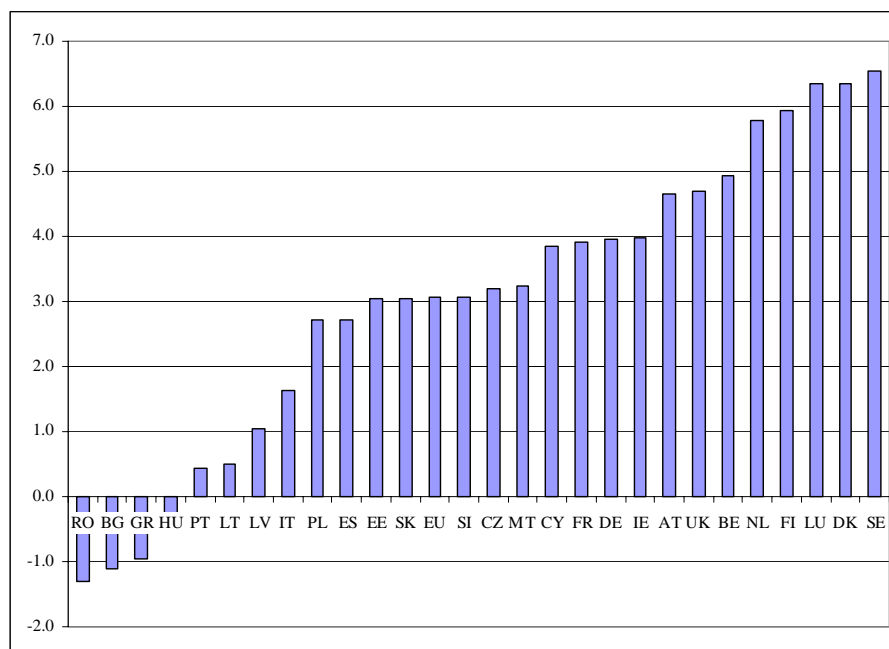


III.1. Social climate indices, 2010

Social climate indices could theoretically range from -10 to +10, where large negative numbers mean that the population is dissatisfied, and large positive numbers indicate general satisfaction in the country. Perhaps the most interesting feature of the indices is that their maximum and minimum values are very different, while their empirical range is similar. The majority of people in the EU are mostly satisfied with their personal situation (Figure 1), while they are dissatisfied with their country's situation (Figure 2). The satisfaction with policy (Figure 3) fluctuates around the average (zero).

The ranking of countries according to these three subjective measures is fairly stable. In terms of personal satisfaction and policy satisfaction, the four most dissatisfied European countries are the same: Romania, Bulgaria, Greece and Hungary. The ranking of countries is also stable in terms of satisfaction: Sweden, Denmark and Luxembourg are among the three most satisfied nations for two of the indices. The average difference between countries' rankings is five places. There are only two countries where the difference in rankings is more than 10 places: taking all European countries, the citizens of Estonia are in the middle of the 'league table' in terms of personal satisfaction, whereas they are relatively satisfied with their country's situation.²¹ Irish people, however, are in the middle in terms of personal satisfaction, whereas they are among the most dissatisfied nations when it comes to their country's position (further statistics on the rankings of countries and on the social climate indices are reported in Annex 4).

Figure 1: Personal satisfaction index (country means, 2010)



²¹ Though Estonia has a negative index value (as do most European countries), in terms of its ranking the country occupies quite a good position.



Figure 2: The satisfaction with the home country's situation, socio-economic environment (country means, 2010)

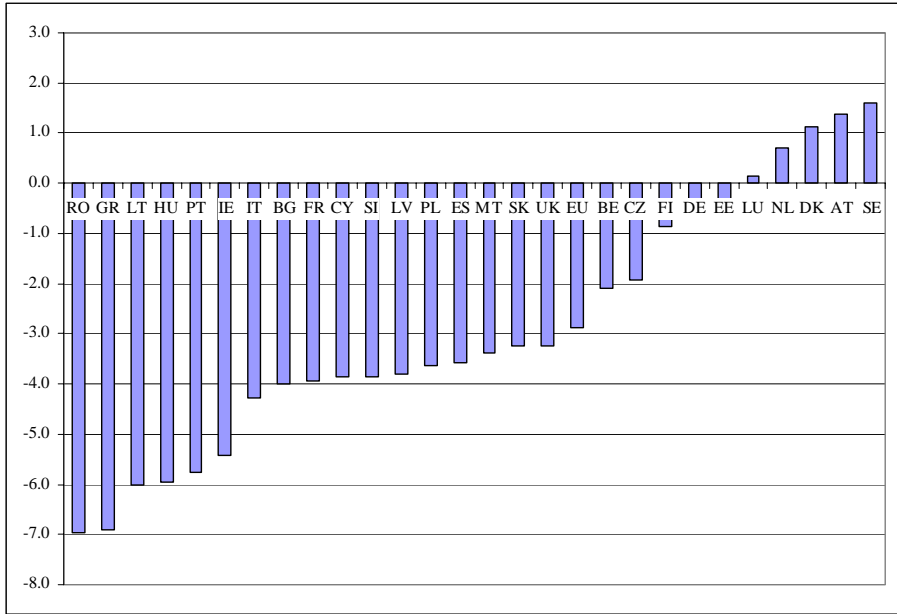
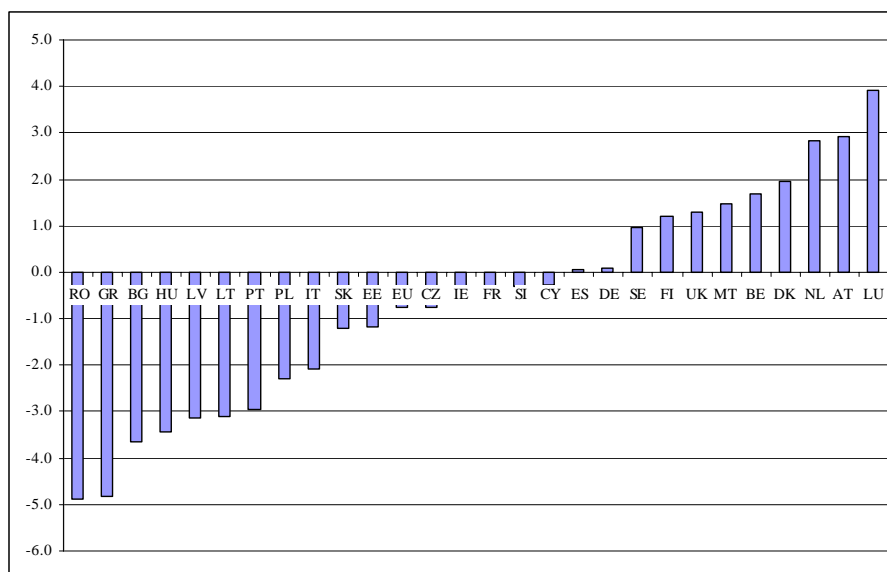




Figure 3: Satisfaction with social policy (country means, 2010)



III.2. The internal correlation between the three social climate indices at the country level

The pairwise correlations between the three social climate indices are fairly high – more than 0.6 – indicating a relatively strong relationship between country rankings across the three indices. It is, however, very important to emphasize that the relationship is relative, meaning that the satisfaction ranking on one domain corresponds more or less consistently to the average satisfaction ranking on another domain, but the level of the satisfaction itself – as we have seen – could be very different.

From Figure 4 we can conclude that – in general – in those countries where people are not satisfied with the situation of their country, the personal satisfaction level is even lower. Countries ranged in the middle in terms of satisfaction with the country’s circumstances usually enjoy a better position in the rankings based on personal satisfaction. While countries where the inhabitants are relatively satisfied with their national situation vary widely in terms of personal situation: we find them both above and below the regression line.

The relationship between policy satisfaction and personal satisfaction looks very different. The relative position of countries along the two axes corresponds very well, but the countries that are relatively high ranking in terms of satisfaction with policy vary in terms of personal satisfaction (Figure 5).

Countries with a medium level of satisfaction with policy, however, vary widely in terms of satisfaction with the general country-specific circumstances (Figure 6).



Figure 4: The relationship between personal satisfaction and satisfaction with the country's circumstances/socio-economic environment

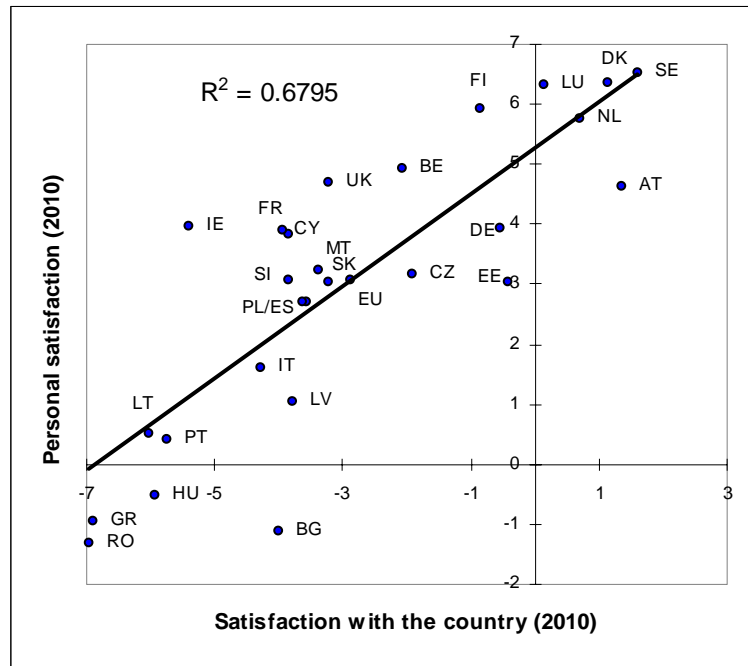


Figure 5: The relationship between personal satisfaction and satisfaction with policy

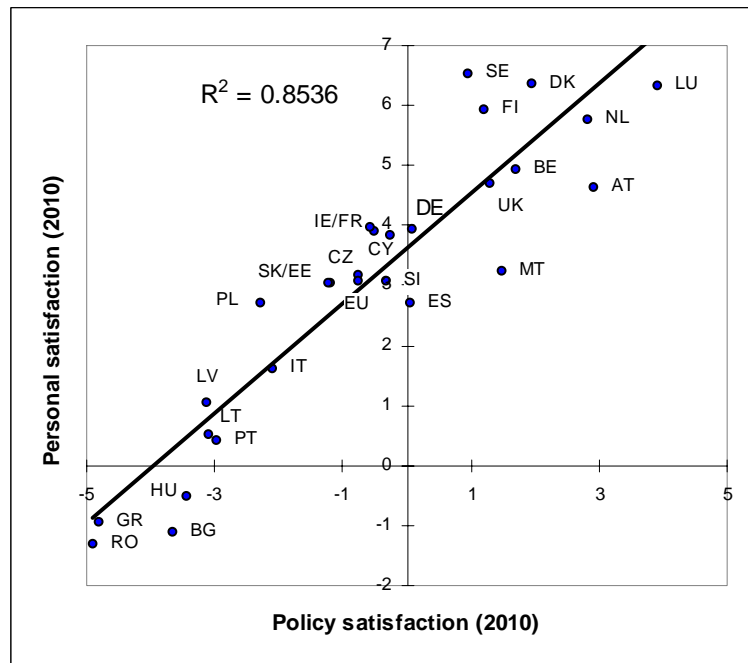
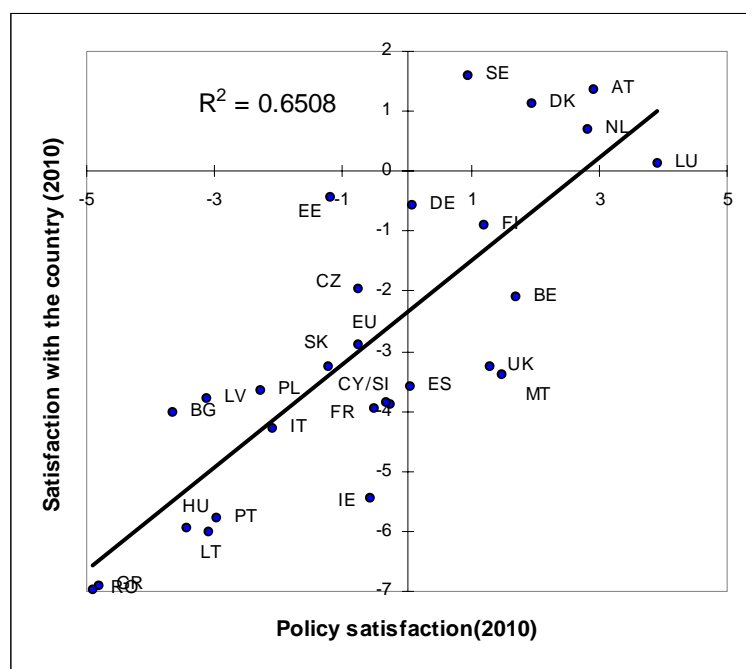




Figure 6: The relationship between satisfaction with the country/socio-economic environment and satisfaction with policy



III.3. The stability of social climate indices over time

As we can conclude from the figures presented in Annex 5, the three social climate indices at the country level are very stable over time. However, there are significant changes in some cases. When, in general, a significant change is present in the index value between 2008 and 2010,²² it is also combined with a large rise/fall in the ranking of the country relative to other European countries.²³ From Table 7, we can conclude that, between 2008 and 2010, people's satisfaction declined most in terms of their country's situation. There are 11 countries where the country means are significantly lower in 2010 than in 2008 (Greece, Lithuania, Romania, Bulgaria, Slovakia, Cyprus, Slovenia, the Czech Republic, Finland, the Netherlands, Denmark), while in seven countries there was a significant positive shift (Italy, France, the United Kingdom, Luxembourg, Germany, Sweden and Austria). The time pattern of people's personal satisfaction is very different (Table 6): usually when significant changes have occurred these are positive. In Hungary, Portugal, Italy, Spain, Slovakia, France, Ireland, the United Kingdom, Austria, Belgium and

²² We also analysed the direction and the significance of changes between 2008/09 and 2009/10 (see the table in Annex 5). In the majority of cases, if one of the one-year changes (regardless of whether between 2008/09 or 2009/10) was significant, the whole change in the two-year period showed the same direction (though the change itself was not necessarily significant). If the direction between the two one-year time periods was different, usually the whole change was not significant. For example, taking just personal satisfaction and the case of Denmark, there was a significant positive change between 2008/09 followed by a non-significant negative change between 2009/10, and the whole change between 2008 and 2010 was positive but not significant.

²³ We will compare the index values of 2008 and 2010 in more detail because the two-year time period is the longest available time series (but unfortunately not long enough to see the changes without time varying measurement error: analysing a very short time period – like one year – contains a higher risk in interpreting the measurement error). We should emphasize, however, that the policy satisfaction index in 2008 did not contain the question about inequalities and poverty (lack of data). Because the correlation between the 2008 and the 2010 policy satisfaction index is large enough (both at a country and an individual level) we decided to compare the change in these two indices, even though their content is not exactly the same.



Luxembourg, people reported on average a significant higher personal satisfaction in 2010 than they did in 2008, while there are only two countries (Romania, the Netherlands) where personal satisfaction declined at the country level in the time period under consideration. The balance between declining and increasing satisfaction with policy is equal: the number of countries with a positive and a negative significant change is the same (Table 8).

Table 6: The change in the personal satisfaction index

Country	Personal satisfaction (2008)	Personal satisfaction (2009)	Personal satisfaction (2010)	Change in the country mean (2008–10) ²⁴	Change in country's ranking (2008–10)
HU	-1.82	-1.47	-0.50	+*	3
BG	-1.33	-1.36	-1.11	+	0
PT	-1.13	1.49	0.43	+*	2
GR	-0.49	-0.07	-0.95	-	-1
IT	0.40	1.68	1.62	+*	3
RO	0.43	0.95	-1.30	-*	-5
LT	0.98	0.83	0.51	-	-1
LV	1.49	1.12	1.04	-	-1
ES	2.20	2.39	2.72	+*	1
PL	2.42	2.71	2.71	+	-1
SK	2.48	2.14	3.05	+*	1
EU	2.72	3.09	3.07	+*	1
EE	2.94	2.84	3.04	+	-2
SI	2.94	3.16	3.08	+	0
FR	3.21	3.80	3.92	+*	3
IE	3.30	3.46	3.98	+*	4
MT	3.39	3.35	3.25	-	-1
DE	3.53	3.95	3.96	+	1
CZ	3.57	3.18	3.19	-	-4
UK	3.73	4.53	4.70	+*	2
AT	4.01	4.07	4.65	+*	0
CY	4.03	3.66	3.84	-	-5
BE	4.36	5.09	4.93	+*	0
LU	5.29	5.74	6.34	+*	2
FI	5.92	5.91	5.93	+	0
DK	6.11	6.51	6.36	+	1
NL	6.19	6.12	5.78	-*	-3
SE	6.40	6.57	6.54	+	0

Notes: '+' indicates positive change between 2008 and 2010; '-' indicates negative change between 2008 and 2010; '*' indicates that the change between 2008 and 2010 was significant, which means that there is no overlap between the 95% confidence intervals around the means (2008 and 2010).

²⁴ In Tables 6 to 8 we calculated the change in the county mean simply by subtracting the country mean 2008 from the mean value 2010. If the 95% confidence intervals around the means do not overlap, we regarded the change significant and signed it with *.



Table 7: The change in the index on satisfaction with the country/satisfaction with socio-economic environment

Country	Satisfaction with country (2008)	Satisfaction with country (2009)	Satisfaction with country (2010)	Change in the country mean (2008–10)	Change in country's ranking (2008–10)
GR	-6.27	-6.13	-6.92	-*	1
HU	-6.27	-6.09	-5.95	+	2
PT	-6.11	-5.54	-5.76	+	2
IE	-5.34	-5.61	-5.43	-	2
IT	-5.24	-4.66	-4.28	+*	2
LT	-4.70	-5.14	-6.02	-*	-3
RO	-4.64	-5.28	-6.97	-*	-6
FR	-4.60	-3.98	-3.94	+*	1
UK	-4.16	-3.90	-3.23	+*	8
PL	-3.70	-3.69	-3.64	+	3
LV	-3.45	-3.85	-3.79	-	1
BG	-3.31	-5.87	-4.01	-*	-4
ES	-3.26	-3.68	-3.58	-	1
SK	-2.73	-4.00	-3.24	-*	2
MT	-2.72	-4.45	-3.38	-	0
EU	-2.71	-3.05	-2.88	-*	2
CY	-2.67	-3.33	-3.86	-*	-7
BE	-2.38	-2.54	-2.09	+	1
SI	-2.26	-2.88	-3.85	-*	-8
LU	-1.87	-0.17	0.14	+*	4
DE	-1.21	-1.54	-0.54	+*	1
CZ	-0.95	-2.01	-1.94	-*	-2
EE	-0.74	-1.20	-0.43	+	0
FI	-0.23	-1.31	-0.87	-*	-3
AT	0.11	-0.21	1.36	+*	2
SE	0.52	0.46	1.60	+*	2
NL	1.49	0.75	0.70	-*	-2
DK	2.23	1.78	1.12	-*	-2

Notes: '+' indicates positive change between 2008 and 2010; '-' indicates negative change between 2008 and 2010; '*' indicates that the change between 2008 and 2010 was significant, which means that there is no overlap between the 95% confidence intervals around the means (2008 and 2010).



Table 8: The change in the index of satisfaction with policy

Country	Satisfaction with policy (2008)	Satisfaction with policy (2009)	Satisfaction with policy (2010)	Change in the country mean (2008–10)	Change in country's ranking (2008–10)
GR	-4.78	-4.55	-4.82	-	1
PT	-4.01	-2.76	-2.96	+*	5
BG	-3.88	-3.95	-3.65	+	0
HU	-3.70	-3.58	-3.43	+	0
RO	-3.32	-3.10	-4.90	-*	-4
IT	-3.27	-1.96	-2.09	+*	3
PL	-3.12	-2.24	-2.30	+*	1
LV	-2.44	-2.80	-3.15	-*	-3
LT	-2.04	-2.23	-3.11	-*	-3
SK	-1.91	-2.08	-1.22	+*	0
IE	-1.51	-0.85	-0.56	+*	3
EE	-1.50	-1.26	-1.19	+	-1
CZ	-1.39	-1.11	-0.76	+*	0
ES	-0.77	-0.05	0.05	+*	4
EU	-0.76	-0.63	-0.76	+	-3
DE	-0.30	0.06	0.08	+	3
SI	0.05	-0.21	-0.32	-	-1
FR	0.27	-0.16	-0.51	-*	-3
CY	0.31	-0.40	-0.27	-	-2
UK	1.04	1.38	1.29	+	2
SE	1.15	0.70	0.95	-	-1
DK	1.32	1.87	1.95	+*	3
FI	1.81	1.72	1.21	-*	-2
MT	2.06	1.12	1.47	-	-1
AT	2.53	2.77	2.92	+	2
BE	2.74	2.01	1.69	-*	-2
LU	3.39	3.60	3.92	+	1
NL	4.04	3.28	2.83	-*	-2

Notes: '+' indicates positive change between 2008 and 2010; '-' indicates negative change between 2008 and 2010; '*' indicates that the change between 2008 and 2010 was significant, which means that there is no overlap between the 95% confidence intervals around the means (2008 and 2010).

III.4. Macro statistic correlates of social climate

Earlier (section II.2.2) we tested the correlation between macro statistics and various kinds of subjective indices. Now we also test the social climate indices for their correlation between subjective and objective country-level indicators. Since the latest social climate indices are from the year 2010, we test the correlation with 2009 macro data (unfortunately there are not many macro data available; the macro data are listed and described in Annex 6). Our results are summarized in Table 9.²⁵ As social climate indices are highly correlated, there are no large differences between the correlation coefficients of

²⁵ Since the focus of GDP is consumption, we checked the connection of indices with the material deprivation index (for the 'Economic strain' and 'Durables' dimensions), which concentrates more on a household's income/wealth. The data are only available for 2008, so we have not included the results in Table 9. The correlation coefficients are larger than measured with GDP in all three social climate indices. The largest correlation is between personal satisfaction and the material deprivation index (0.89).



the three different subjective indices and the macro statistics. In general, we can establish that the personal satisfaction index is higher in those countries where the GDP PPP per capita is larger or where corruption is not a very serious problem (in the case of the Corruption Perceptions Index, the larger the figure, the less serious the corruption). Furthermore, in those countries where the employment rate is high, people are more satisfied with the situation of their country. A high unemployment rate or high inflation correlates with relatively low satisfaction with policy.

Table 9: The correlation between the three social climate indices and some macro indicators

	GDP PPP (2009)	Employment rate (2009)	Unemployment rate (2009)	Corruption Perceptions Index (2009)	Harmonized Indices of Consumer Prices (2009)
Personal satisfaction (2010)	0.71	0.65	-0.33	0.86	-0.47
Satisfaction with country (2010)	0.48	0.70	-0.35	0.73	-0.31
Satisfaction with policy (2010)	0.68	0.59	-0.41	0.80	-0.49

Grey cells show the highest correlation among the three social climate indices with the macro indicator. The source and the explanation of the macro statistics are presented in Annex 6.

Looking at the correlations more closely, we observe that, compared to the GDP PPP in Hungary, Greece and Portugal, the level of personal satisfaction index is relatively low (Figure 7). In those same countries – and also in Bulgaria and Romania (whose GDP data were not available) – the value of the personal satisfaction index is also relatively low compared to the Corruption Perceptions Index (Figure 8). However, countries above the regression line show no similar pattern – they are different in the case of the two macroeconomic indicators.

Figure 7: The relationship between the personal satisfaction index and GDP PPP

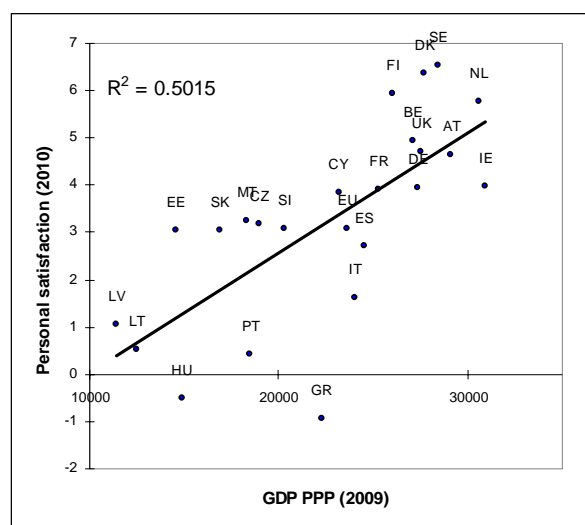
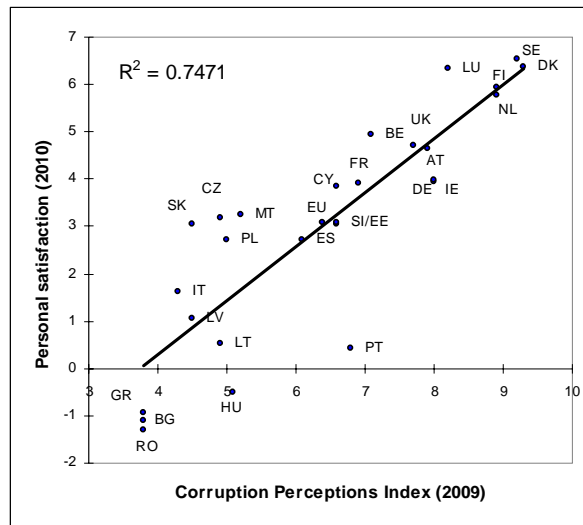




Figure 8: The relationship between the personal satisfaction index and the Corruption Perceptions Index



Countries below and above the regression line are also very similar in terms of satisfaction with policy. Compared both to the unemployment rate (Figure 9) and inflation (Figure 10), Luxembourg, the Netherlands, Austria, Denmark, Malta, the United Kingdom, Belgium and Sweden have higher satisfaction with policy, whereas in Greece, Bulgaria, Portugal and Hungary satisfaction is lower.

Figure 9: Satisfaction with policy and unemployment rate in %

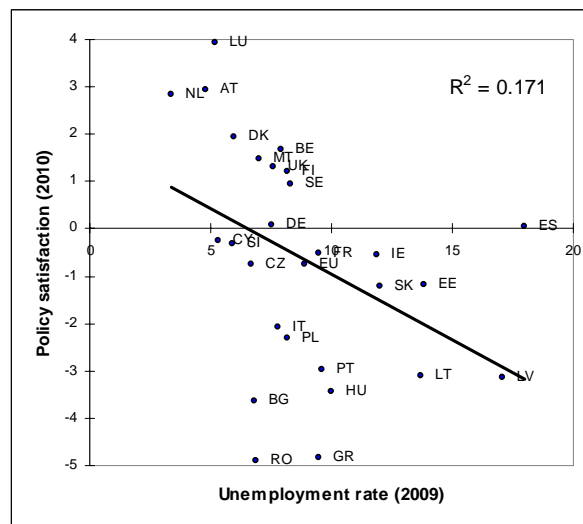
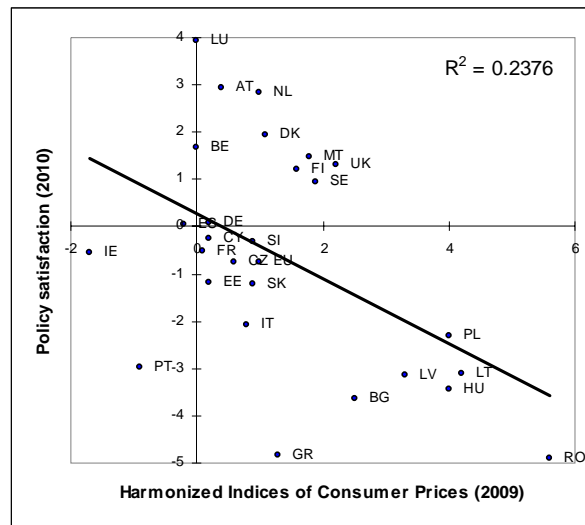


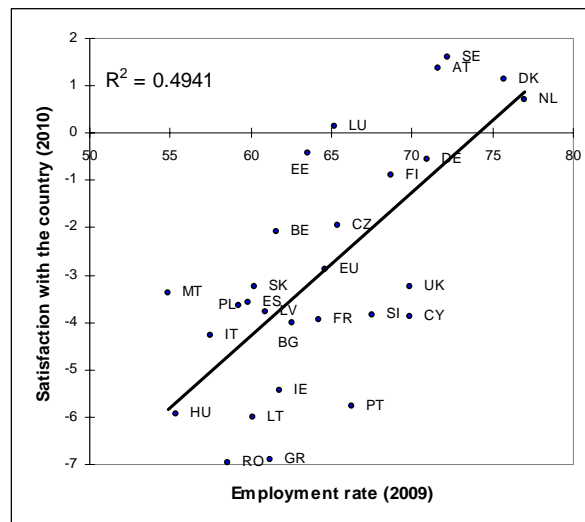


Figure 10: Satisfaction with policy and inflation



In Figure 11, we have plotted the relationship between the employment rate and satisfaction with the country. There is a relatively high correlation between these two indices. Where the employment rate is high, people are more satisfied with the situation of their country. Interestingly the relationship between the unemployment rate and satisfaction with the country is minimal. Our results even show that the unemployment rate has more influence on satisfaction with policy. We should re-emphasize on this point one of our previous remarks: because of the way the employment rate and the unemployment rate are calculated, the two indicators are not the mirror image of one another.

Figure 11: Satisfaction with the country and the employment rate in %

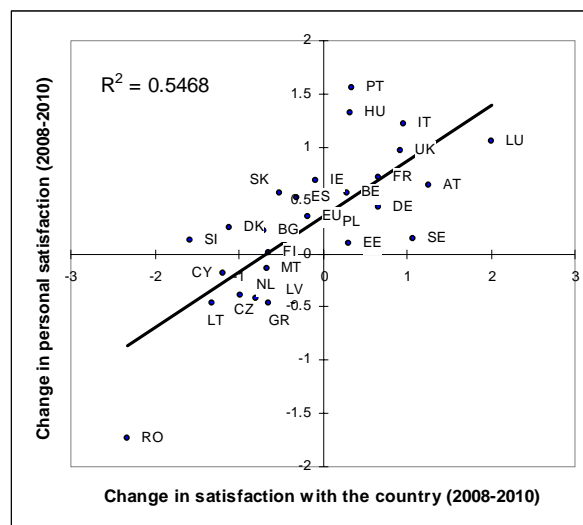




III.5. The change in social climate indices

In the majority of European countries, the three social climate indices changed in the same direction over the period observed. In France, the United Kingdom, Luxembourg, Italy, Hungary, Portugal, Estonia, Germany, Poland and Austria and, all three indices changed positively between 2008 and 2010 (the change itself is, however, not necessarily significant). These countries are in the top right quadrant in all three figures (Figures 13 to 15). On the other hand, in seven countries all three indicators changed in the negative direction (Romania, Latvia, Greece, Lithuania, the Netherlands, Cyprus and Malta – these countries fall in the bottom left quadrant).²⁶ As one can see from Figures 12 and 13, compared to the change in satisfaction with the country, the change in personal satisfaction was greater in Hungary, Portugal and Italy. By contrast, in Romania, Latvia, Lithuania, Estonia and Greece the decline in personal satisfaction was stronger than the drop in either satisfaction with the country or satisfaction with policy. We can also observe that the most dramatic decline occurred in the index values of Romania. Generally speaking, there is a weak to moderate correlation between satisfaction with policy and satisfaction with the country. This is the lowest pairwise correlation among the three index values (Figure 14).

Figure 12: The change in personal satisfaction and satisfaction with the country between 2008 and 2010



²⁶ In this section we deal only with the changes between 2008 and 2010. We are aware that year-to-year changes sometimes go in different directions, but (as one could check in Annex 5) the direction of significant changes is, in the majority of cases, identical.



Figure 13: The change in personal satisfaction and satisfaction with policy between 2008 and 2010

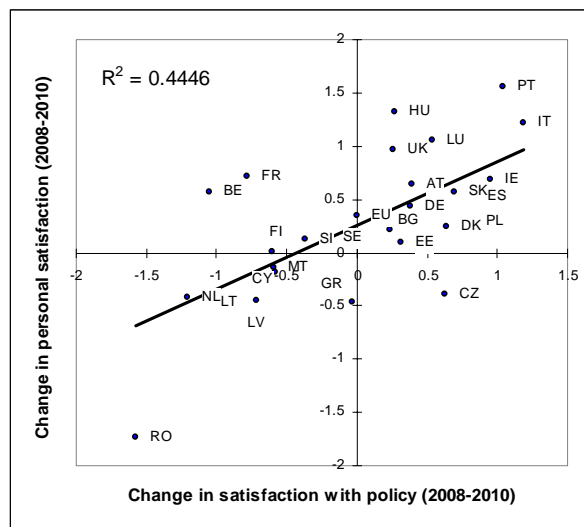
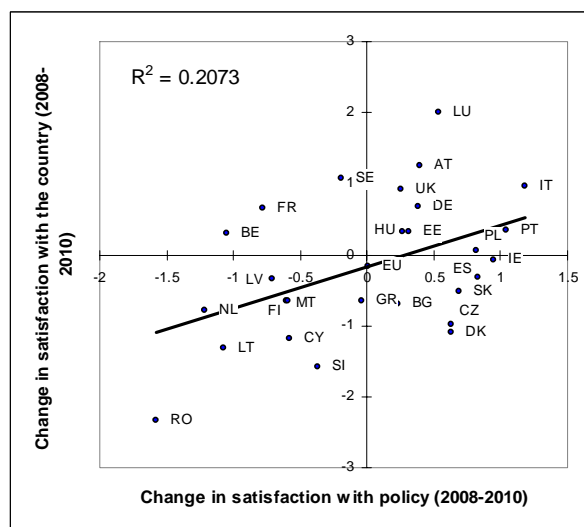


Figure 14: The change in satisfaction with the country and satisfaction with policy between 2008 and 2010



While the changes in the three social climate indices correspond to each other, the changes in the subjective indices and other macroeconomic statistics do not relate significantly. In other words, the changes in the social climate indicators are influenced by factors other than the macroeconomic. The results might be influenced by the fact that our social climate measure is not sensitive to the distribution of items. Before generalizing the statement about the lack of a relationship, it would be wise to check whether it could be attributed to the measurement technique. In any case, the changes in the macro data (both the subjective and the objective) are very small and go some way to explaining the lack of a relationship. Later in our analysis we move in the direction of micro analysis to examine the three social climate indices more closely.



Table 10: The change in social climate indices and some macro statistics (correlation coefficients)

	The change in GDP PPP (2007–09)	The change in employment rate (2007–09)	The change in unemployment rate (2007–09)	The change in Corruption Perceptions Index (2007–09)	The change in Harmonized Indices of Consumer Prices (2007–09)
The change in personal satisfaction (2008–10)	0.26	0.03	-0.12	-0.12	-0.18
The change in satisfaction with the country (2008–10)	0.13	0.07	-0.03	-0.19	-0.10
The change in satisfaction with policy (2008–10)	0.01	-0.07	-0.03	-0.07	-0.21

The coefficients are not significant on any ordinarily used significance level.

IV. Socio-economic correlates of social climate – towards a micro analysis

When working with country averages, we should not forget that expressing countries' social climate in a single number does not mean that social climate lacks an internal (within-country) variance. Just as average temperature in a country means the weighted average of maximum and minimum temperatures over a specific period of time (including summer and winter times and calculating with geographical differences), so the social climate of a country is a combination of groups or individuals with higher and lower levels of satisfaction. In this sense, the mean value for the country suppresses the within-country disparity. In this part of our analysis – and before going on to explain the micro-level differences – we compare the mean-differences between various kinds of social groups across the European countries.

We assumed that education has a strong influence on social climate, so we compared the country means for elementary and tertiary-educated people. The labour market position might also influence social climate, and therefore we compared the preferences of inactive people against those measured for the self-employed, because according to labour market position, in the majority of European countries the highest mean-difference in social climate indices is to be found between these two categories. Finally, material status might also correspond to people's satisfaction. According to the self-reported material situation, we compared those who placed themselves in the bottom 30 per cent to those who considered their position to be in the top 30 per cent.²⁷ Large differences between the country means according to social group indicate highly polarized public opinion. On the other hand, when group means in a particular country are close to each other, the selected socio-economic variable does not have a large influence on the social climate.

In Figure 15, educational differences are presented in terms of personal satisfaction. The highest educational differences are to be observed in Bulgaria, Lithuania and Hungary, while the United Kingdom and the Netherlands do not seem to be polarized in terms of

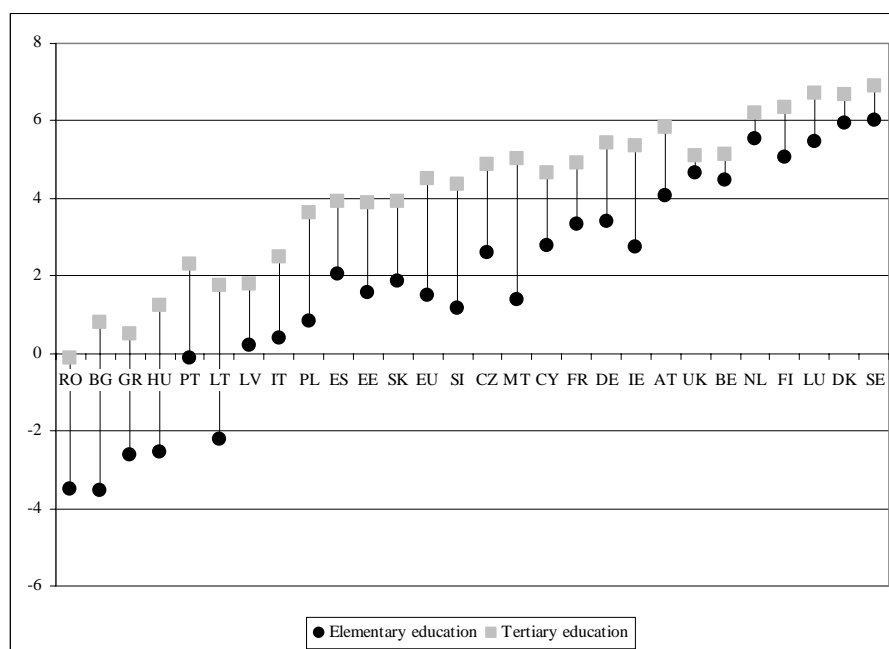
²⁷ There are, unfortunately, no good variables for the 'real' material position of the respondents in the EB, hence we had to use subjective self-evaluations. This is not without problems, we know: there may be a direct common root of these two variables, rather than a causal relationship between them. We cannot tackle this problem at this stage.



educational differences. While the mean-difference between tertiary-educated and elementary-educated people in Bulgaria is 4.34 points, the difference is only 0.44 in the United Kingdom. Since in the figure the ranking of countries follows the country hierarchy of personal satisfaction in the whole sample, we can observe that – as a tendency – there are big educational differences in those countries where personal satisfaction is low, whereas in countries with high personal satisfaction educational differences do not really count. The correlation coefficient between the educational mean-differences (between tertiary educated and elementary educated people) and the country-mean of personal satisfaction is -0.79, indicating an inverse relationship between the within country educational mean differences in personal satisfaction and the level (mean value) of the index itself.

Our findings on education and satisfaction are identical to those of Zagórski *et al.* (2010), who analysed the connection between happiness and education. Their results show: ‘that highly educated people are a good deal happier than their less educated peers in countries with low educational levels, but that, as the average educational attainment in a country rises, the smaller the gain in happiness associated with educational success’ (*ibid.*: 15). Of course, we analysed the bivariate connection: in terms of the impact of education on the social climate other attributes could be involved – for example, more low-educated people are unemployed or inactive, or higher-educated people have higher incomes. All these interrelated factors are considered in the micro-level analysis.

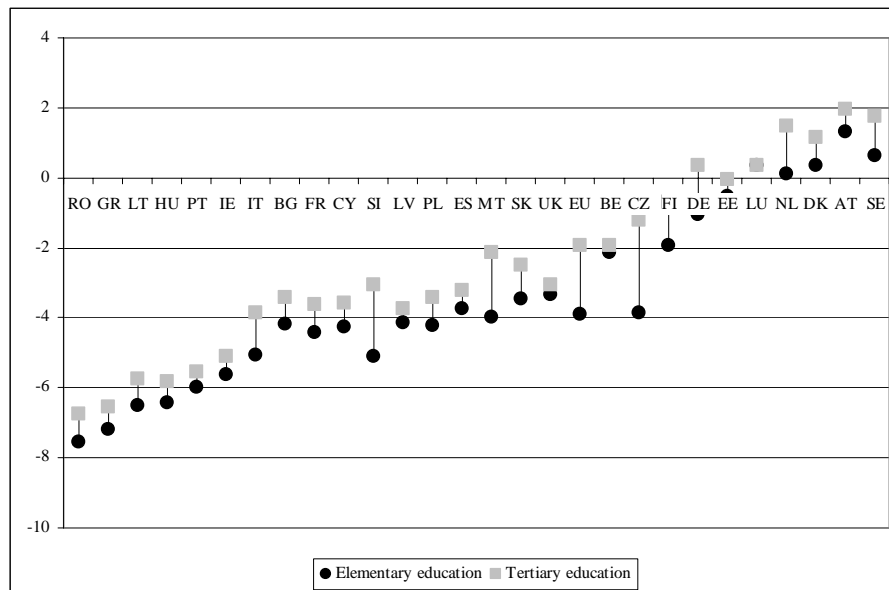
Figure 15: Educational differences in personal satisfaction



Educational differences do not influence the within-country disparity in satisfaction with the home country's situation (Figure 16). There are only eight countries out of the 27 where the mean-differences between poorly educated and well-educated people are greater than 1 point. The Czech Republic and Slovenia are the two countries where education has the largest influence on satisfaction with the country. The country-level mean value and the distances by educational difference do not correspond to each other. But – as we have seen previously – in every European country, better-educated people are more satisfied and lower-educated people are less satisfied.

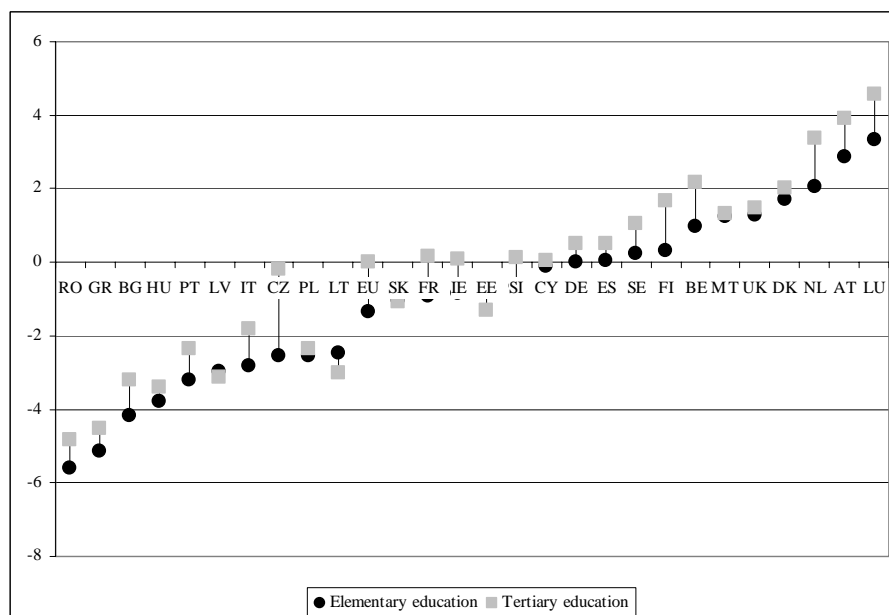


Figure 16: Educational differences in satisfaction with the home country's situation (socio-economic environment)



Basically, the same holds true for the relationship between differences in education and satisfaction with policy (Figure 17). In the majority of countries, education is not a good explanatory variable for within-country differences in satisfaction with policy. On this measure, the greatest differences are in the Czech Republic and the smallest in Estonia. Interestingly enough, in Latvia and Lithuania lower-educated people are more satisfied with policy than are their better-educated counterparts, though the difference is very small.

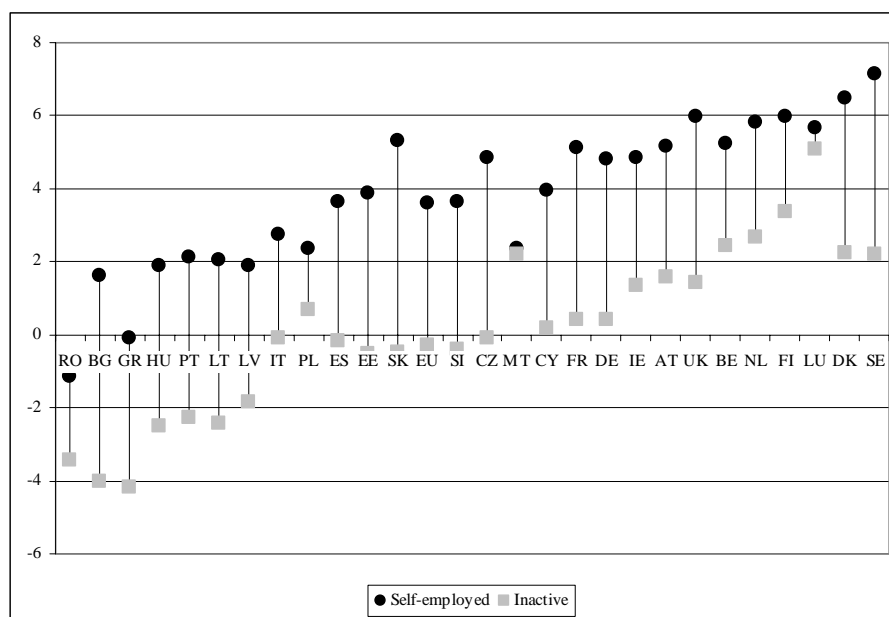
Figure 17: Educational differences in satisfaction with policy





Labour market participation also polarizes the level of social climate. Self-employed people are more satisfied with their personal situation than are inactive persons (Figure 18).²⁸ The difference between the mean values of these two groups is very high in the majority of countries. In Slovakia for example the mean-difference between self-employed and inactive people is 5.79 on average, which means the average personal satisfaction among the self-employed is 5.79 points higher than the personal satisfaction among their inactive counterparts. In Bulgaria the average mean-difference is 5.65. However, some countries depart from this trend: the average difference between the two groups is only 0.19 in Malta and 0.58 in Luxembourg (these two countries are, to some extent, exceptions to the rule).

Figure 18: Difference in personal satisfaction according to labour market participation



Satisfaction with the country's situation (Figure 19) and with policy (Figure 20) are less sensitive to labour market participation, as the mean values are relatively close to one another. In both cases, big satisfaction differences are present in the Czech Republic, France and Denmark. In some countries (Cyprus and Malta in both cases) inactive people are even more satisfied than are the self-employed – but the difference is very small and within the range of statistical margin of error.

²⁸ Since in the majority of European countries the highest mean-difference was present between self-employed and inactive people, it did not make sense to compare the differences between other social groups according to labour market participation (such as inactive vs. unemployed).



Figure 19: Difference in satisfaction with the home country's situation (socio-economic environment) according to labour market participation

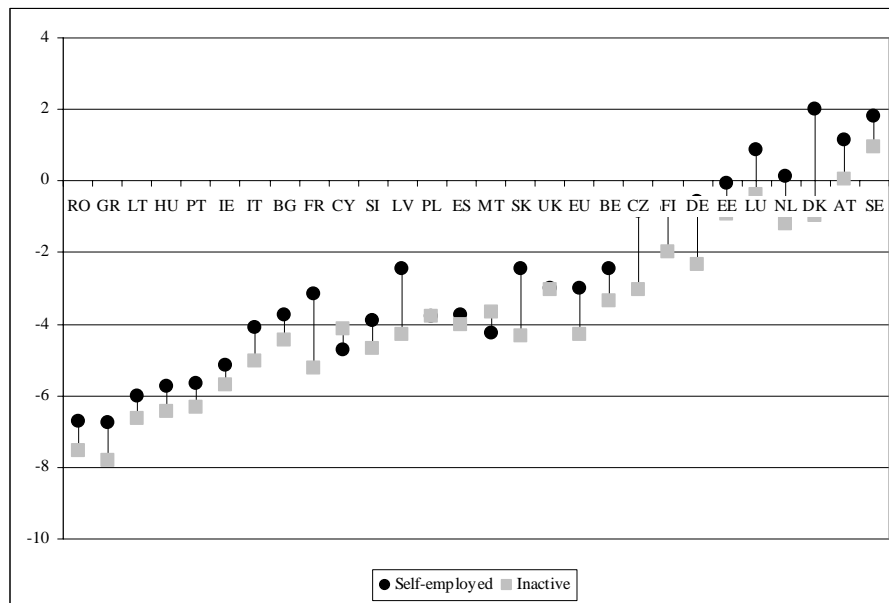
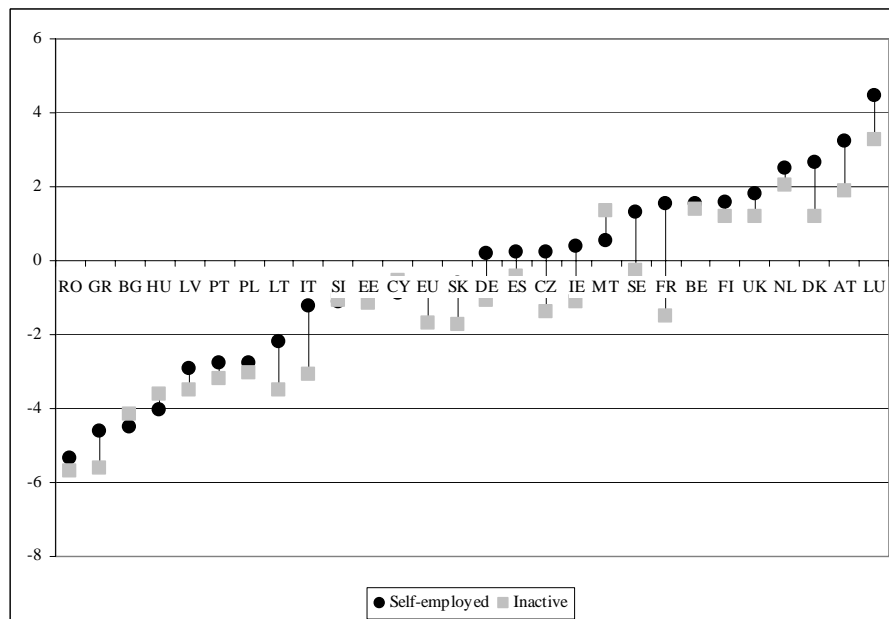


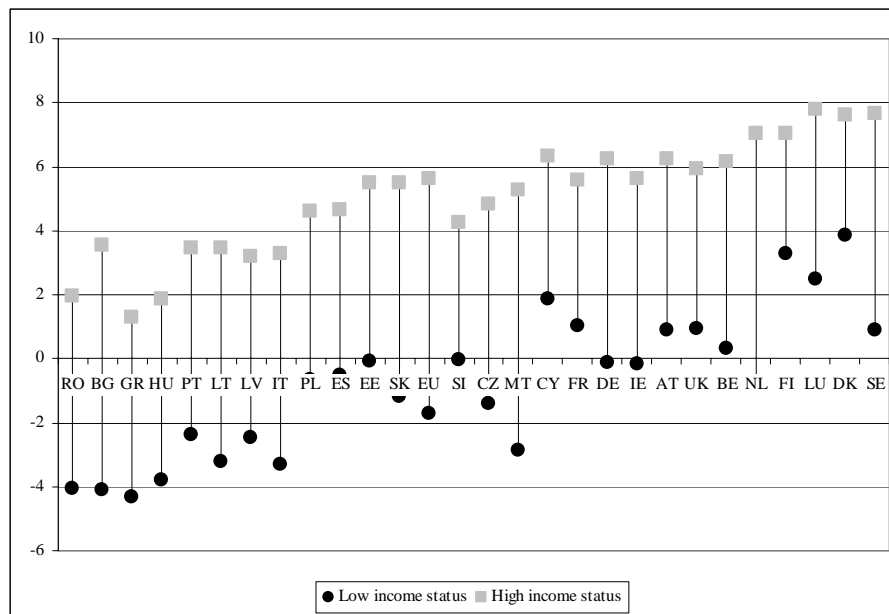
Figure 20: Difference in satisfaction with policy according to labour market participation



Self-reported material position seems to be a good explanatory variable of social climate differences (in all three indices). There are big differences between poor and well-off citizens in every European country. On average, the personal satisfaction of people in a good material position is some 5.77 points more than among their worse-off counterparts (Figure 21). This is the highest average 'mean-gap' among the three explanatory variables (education, labour market participation and self-reported material position). In Malta, the Netherlands and Bulgaria, the mean-difference is 30–40 per cent higher than average, while in Slovenia, Finland and Denmark the divergence between the means is 30–40 per cent lower than average (though still very high).

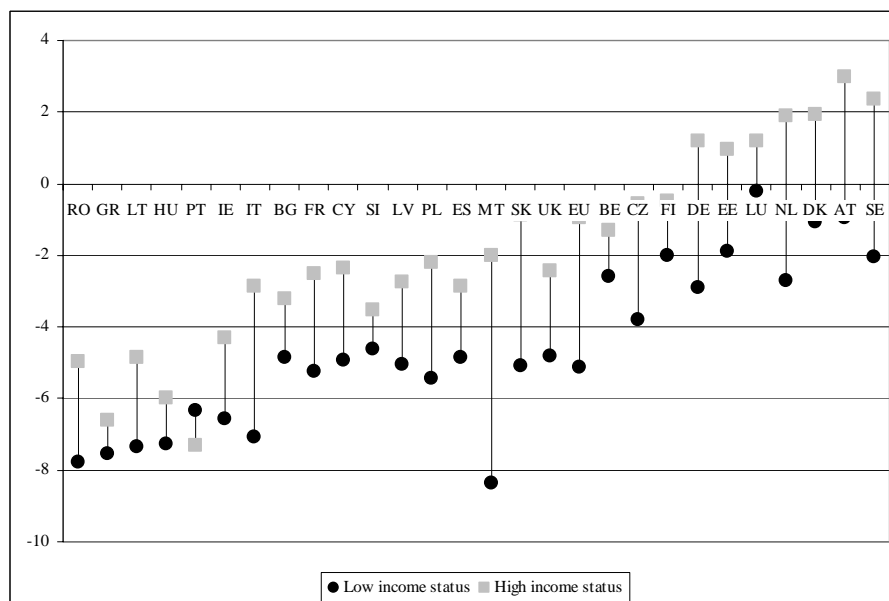


Figure 21: Difference in personal satisfaction according to self-reported material position



Satisfaction with the country's situation is also sensitive to material position (Figure 22). As with personal satisfaction, the biggest mean-differences for satisfaction with the country are to be found in Malta and the Netherlands. In Portugal, however, low-income people are slightly more satisfied than are people in a good material position. Affluence also has an influence on policy satisfaction (Figure 23). The differences are highest in Malta and the Netherlands and lowest in Hungary and Lithuania. In every European country, a better material position means greater satisfaction with policy.²⁹

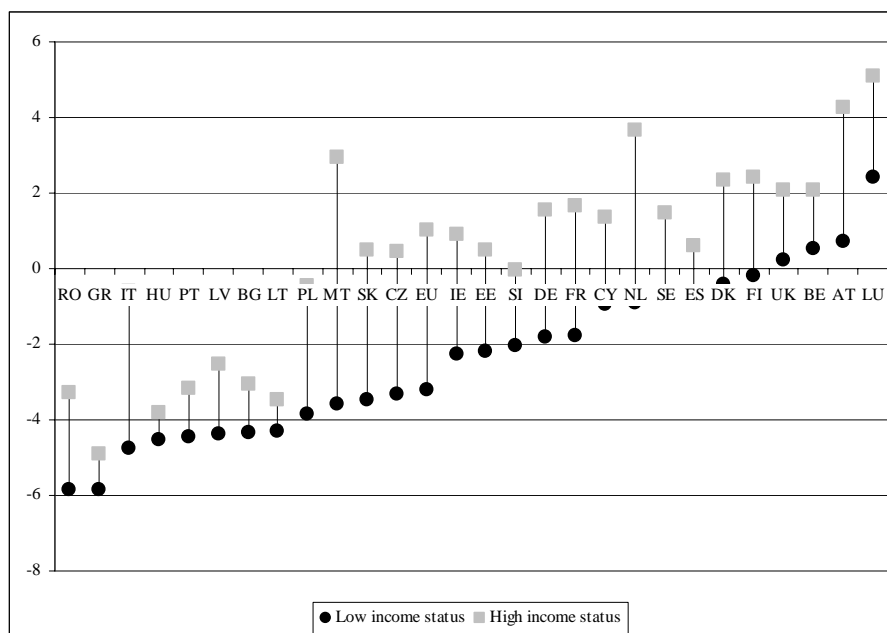
Figure 22: Difference in the satisfaction with the home country's situation (socio-economic environment) according to self-reported material position



²⁹ Again, we should underline that there might be some endogeneity that cannot be treated at this stage.



Figure 23: Difference in satisfaction with policy according to self-reported material position



V. Multivariate model of social climate – a micro-level analysis

In the previous section, we compared the mean values of three social climate indices in different social groups. In reality, however, different explanatory variables appear simultaneously and influence the impact on one another. So, in order to calculate more precisely the impact of a single explanatory variable, we need to control for all the other independent variables. In this section, we analyse our dependent variables, using multivariate statistical models. We ran seven models on each social climate index. Table 11 contains the list of explanatory variables in each model.

Table 11: Explanatory variables in the multivariate analysis

Model I	Country effects	Country dummies, (Germany)
Model II	Demographic differences	male, (female), age, age squared, village, (small town), large town
Model III	Schooling	at least elementary, (secondary), tertiary
Model IV	Labour market participation	Student, retired, inactive, self-employed, (employed), material status, square of material status
Model V	Change 2009/10	year dummy
Model VI	Change in material position	year dummy × material position
Model VII	Change in country effect	year dummy × country dummies

Variables in brackets are the reference variable.



Box 1: The methodology of the regression

In our multivariate analysis we calculated pooled ordinary least squares (OLS) regressions by pooling the surveys of 2009 and 2010 in one dataset (we should note that the two surveys were independent, asking different people). This meant merging and restructuring the two datasets. In the columns of the new dataset are the variables (regardless of whether they come from 2009 or 2010). Data from different years are differentiated with a dummy variable (the rows of the new dataset contain the observations, as usual). Using this method, we were able to calculate the changes in the impact of an explanatory variable on the dependent variable over time (simply calculating the product of the year dummy and the explanatory variable, and including it in the regression).

We ran seven models on each social climate index. The basic model contained only the dummy variables of countries, with Germany as the reference category.³⁰ In the second model, we controlled for demographic differences (gender, age and location). The third model took into account the impact of schooling. In the fourth model we controlled for labour market participation (student, retired, inactive, self-employed, with the reference of employed). We also included self-reported material position, which is on a scale of 1 to 10, depending on the decile position that the respondent assigns him/herself in society. Since we considered non-linearity in the impact of material position, we included its square in the analysis as well. In models 5–7 we examined the changes in the dependent variables over time. In model five only a binary year dummy was included (as an additional variable), so that we could examine the changes between 2009 and 2010. In model six the impact of changing material self-position was tested. In our final model, the change in country fixed effects (country dummies) was added.

The decision to analyse only the changes over one year (instead of observing the changes between 2008 and 2010) was necessitated by the fact that, in the 2008 dataset, the important variable of material status was missing. As we saw previously, self-reported material position is a powerful explanatory variable, so the omission of this variable from the multivariate analysis might have led to biased results.

V.1. Explaining the three social climate indices: pooled OLS results

In seeking to explain personal satisfaction (Table 12) we can observe that simply by introducing country fixed effects we can explain 17 per cent of the total variance. The total explained variance in the full model is 37 per cent, so the explanatory power of all the other variables included is 20 percentage points. In other words, the predictive power of demographic differences, schooling, labour market participation and changes over time contribute account for that amount in the explanation. This indicates remarkable between-country differences.

Looking at the results more closely, males seem to be more satisfied than females, but if we control for the labour market variables, then females become more satisfied. Age has a negative impact on personal satisfaction with a slight positive curve (since the impact of age squared is also significant, but very close to zero). Rural dwellers are less satisfied than people living in small towns, while people from larger towns have greater personal satisfaction. Tertiary-educated people are more satisfied than are people with secondary education, who, in turn, are more satisfied than their elementary-educated counterparts. Interestingly, only students are more satisfied than employed people (except when we look at personal satisfaction, when students, too, are less satisfied), and even the self-employed are significantly less satisfied. Increasing material status leads to a rise in the

³⁰ The choice of reference categories is always subjective. We chose Germany as the reference category since it is a continental Central European country, and Germany's social climate indices are approximately in the middle of the European distribution.



level of personal satisfaction, but the square component is also significant, which might indicate the diminishing marginal utility of income.

As for the impact of the year dummy (changes over time), we established that it is low (but still significant). However, if we introduce interaction between the year and material status, the year dummy loses its significance. Finally in the case of some countries, a change in the country fixed effect (compared to Germany) is significant. Overall the importance is marginal: the R-square statistic does not change when we introduce variables that capture the change between 2009 and 2010 (we will come back to this problem later, see Box 2 for the methodology).

Table 13 shows the models for satisfaction with the home country's situation: from it we can conclude that only country fixed effects have much explanatory power on the dependent variable, since the total explained variance increases by only 4 percentage points once all the other explanatory variables are introduced. It is not the case, however, that the country fixed effects draw explanatory power from any other variables, since without country dummies the explained variance is 8 per cent. That means robust between-country differences. However, we should add that the number of explanatory mechanisms was limited in the models, and we were unable to work with such important mechanisms as the prospect of upwards mobility or values and attitude-related mechanisms.

The direction and significance of explanatory variables in the case of satisfaction with the country are very similar to personal satisfaction. But there are small differences: males are more satisfied than females in every model; there are no differences between employed and self-employed people. The year dummy is significant, showing an increase in satisfaction between 2009 and 2010. However, introducing a change in material position (which itself has a positive impact) turns the sign of impact negative; while adding a change in country fixed effects to the model again turns the direction of the year dummy's impact positive.

In seeking to explain satisfaction with policy (Table 14), we can only repeat what we said about satisfaction with the country's situation. The explanatory power of the models does not increase dramatically after more explanatory variables are added to the country fixed effects. Between 2009 and 2010, the level of satisfaction with policy significantly dropped in European countries, and changing material position shifts satisfaction with policy in a positive direction.



Table 12: Explaining personal satisfaction in 2009 and 2010 – pooled OLS (unstandardized coefficients)

	Model I Country effects	Model II Demographic differences	Model III Schooling	Model IV Labour market participation	Model V Change 2009–10	Model VI Change in material position	Model VII Change in country effect
Constant	4.07***	5.83***	6.13***	0.45**	0.5**	0.51**	0.35
AT	0.31**	0.28*	0.49***	-0.09	-0.09	-0.09	-0.01
BE	0.94***	0.9***	0.62***	0.47***	0.47***	0.47***	1.32***
BG	-5.32***	-5.3***	-5.35***	-3.96***	-3.96***	-3.96***	-4.31***
CY	-0.28	-0.26	-0.27	-0.54	-0.54	-0.54	-0.61
CZ	-0.88***	-0.87***	-0.88***	-1.2***	-1.2***	-1.2***	-0.78**
DK	2.37***	2.38***	1.77***	1.29***	1.29***	1.29***	2.19***
EE	-1.06**	-1.02**	-1.35***	-1.3***	-1.3***	-1.3***	-0.97
ES	-1.5***	-1.53***	-1.35***	-1.08***	-1.08***	-1.08***	-1.24***
FI	1.87***	1.87***	1.34***	1***	1***	1***	1.8***
FR	-0.21***	-0.23***	-0.5***	-0.13*	-0.12*	-0.12*	0.52**
GR	-4.57***	-4.55***	-4.52***	-4.79***	-4.79***	-4.79***	-2.99***
HU	-5.05***	-5.02***	-4.83***	-4.02***	-4.02***	-4.02***	-4.62***
IE	-0.29	-0.32	-0.35	-0.54***	-0.54***	-0.54***	-0.64
IT	-2.38***	-2.35***	-2.09***	-2.5***	-2.5***	-2.5***	-1.22***
LT	-3.39***	-3.38***	-3.61***	-2.7***	-2.7***	-2.7***	-1.46**
LU	2.02***	1.99***	1.69***	1.23**	1.24**	1.24**	1.02
LV	-3***	-3.01***	-3.11***	-2.54***	-2.54***	-2.54***	-1.98**
MT	-0.71	-0.78	-0.7	-1.01*	-1*	-1.01*	-0.12
NL	1.9***	1.9***	1.5***	0.5***	0.5***	0.5***	1.63***
PL	-1.35***	-1.38***	-1.52***	-1.35***	-1.35***	-1.35***	-0.7***
PT	-3.12***	-3.16***	-2.67***	-2.27***	-2.26***	-2.26***	-1.03**
RO	-4.24***	-4.27***	-4.42***	-4.27***	-4.27***	-4.27***	-1.21***
SE	2.47***	2.47***	1.94***	1.22***	1.22***	1.22***	1.93***
SI	-0.94***	-0.98***	-1.05***	-1.28***	-1.28***	-1.28***	-0.5
SK	-1.47***	-1.48***	-1.54***	-1.94***	-1.94***	-1.94***	-2.93***
UK	0.4***	0.4***	0.49***	0.14**	0.14**	0.14**	1.32***
Male		0.27***	0.24***	-0.14***	-0.14***	-0.14***	-0.14***
Age		-0.09***	-0.12***	-0.13***	-0.13***	-0.13***	-0.13***
Age squared		0***	0***	0***	0***	0***	0***
Village		0.17***	0.3***	0.33***	0.33***	0.33***	0.32***
Large town		-0.01	-0.14***	-0.12***	-0.12***	-0.12***	-0.13***
Elementary			-1.14***	-0.31***	-0.31***	-0.31***	-0.32***
Tertiary			1.3***	0.65***	0.65***	0.65***	0.66***
Student				-0.3***	-0.29***	-0.29***	-0.32***
Self-emp.				-0.22***	-0.22***	-0.22***	-0.22***
Inactive				-3.12***	-3.11***	-3.11***	-3.11***
Retired				-1.05***	-1.04***	-1.04***	-1.04***
Mat. status				1.67***	1.68***	1.68***	1.68***
Mat. status squared				-0.08***	-0.08***	-0.08***	-0.08***
Year (09/10)					-0.15***	-0.17	0.1
Year × Mat. status						0	0.04



Year × AT							-0.05
Year × BE							-0.57**
Year × BG							0.24
Year × CY							0.05
Year × CZ							-0.28
Year × DK							-0.59*
Year × EE							-0.22
Year × ES							0.1
Year × FI							-0.54*
Year × FR							-0.43***
Year × GR							-1.18***
Year × HU							0.39
Year × IE							0.07
Year × IT							-0.85***
Year × LT							-0.82**
Year × LU							0.12
Year × LV							-0.37
Year × MT							-0.59
Year × NL							-0.75***
Year × PL							-0.43***
Year × PT							-0.81***
Year × RO							-2.02***
Year × SE							-0.47*
Year × SI							-0.52
Year × SK							0.64*
Year × UK							-0.79***
R-square	0.17	0.17	0.20	0.37	0.37	0.37	0.37
N	40818	40818	40818	40818	40818	40818	40818

Table 13: Explaining satisfaction with the home country's situation (socio-economic environment) in 2009 and 2010 – pooled OLS (unstandardized coefficients)

	Model I Country effects	Model II Demographic differences	Model III Schooling	Model IV Labour market participation	Model V Change 2009–10	Model VI Change in material position	Model VII Change in country effect
Constant	-0.95***	1.66***	1.79***	-1.7***	-1.79***	-1.54***	-1.96***
AT	1.51***	1.56***	1.66***	1.47***	1.46***	1.45***	1.05***
BE	-1.36***	-1.35***	-1.48***	-1.58***	-1.57***	-1.58***	-0.54
BG	-3.97***	-3.95***	-3.98***	-3.38***	-3.39***	-3.39***	-4.91***
CY	-2.63***	-2.63***	-2.61***	-2.63***	-2.64***	-2.63***	-0.33
CZ	-0.98***	-0.97***	-0.98***	-1.01***	-1.01***	-1.01***	0.45
DK	2.41***	2.38***	2.07***	1.81***	1.81***	1.8***	4.71***
EE	0.16	0.13	-0.02	0.1	0.09	0.09	0.62
ES	-2.68***	-2.67***	-2.56***	-2.54***	-2.54***	-2.54***	-1.03***
FI	-0.13	-0.14	-0.4**	-0.6***	-0.6***	-0.61***	0.67
FR	-3.01***	-3***	-3.11***	-2.84***	-2.85***	-2.85***	-1.24***
GR	-5.57***	-5.64***	-5.58***	-5.71***	-5.71***	-5.71***	-2.76***
HU	-5.07***	-5.05***	-4.96***	-4.59***	-4.59***	-4.6***	-3.19***
IE	-4.61***	-4.59***	-4.6***	-4.8***	-4.8***	-4.8***	-3.23***
IT	-3.52***	-3.49***	-3.36***	-3.59***	-3.59***	-3.61***	-2.18***
LT	-4.64***	-4.67***	-4.79***	-4.48***	-4.49***	-4.49***	-1.43**
LU	0.99*	1.06*	0.9	0.72	0.71	0.71	2.04
LV	-2.86***	-2.91***	-2.96***	-2.73***	-2.74***	-2.74***	-1.14
MT	-2.94***	-2.93***	-2.89***	-3.1***	-3.1***	-3.11***	-2.86
NL	1.67***	1.7***	1.5***	1***	1***	0.99***	3.09***
PL	-2.77***	-2.8***	-2.86***	-2.79***	-2.8***	-2.8***	-1.19***
PT	-4.74***	-4.74***	-4.51***	-4.29***	-4.3***	-4.29***	-2.93***
RO	-5.21***	-5.23***	-5.28***	-5.16***	-5.17***	-5.17***	-1.09***
SE	1.97***	1.97***	1.96***	1.36***	1.36***	1.35***	1.62***
SI	-2.44***	-2.43***	-2.46***	-2.64***	-2.65***	-2.65***	0.64
SK	-2.64***	-2.62***	-2.65***	-2.74***	-2.75***	-2.76***	-2.23***
UK	-2.5***	-2.54***	-2.49***	-2.68***	-2.68***	-2.69***	-1.69***



Male	0.5***	0.47***	0.39***	0.39***	0.39***	0.39***
Age	-0.13***	-0.14***	-0.11***	-0.11***	-0.11***	-0.11***
Age squared	0***	0***	0***	0***	0***	0***
Village	-0.15***	-0.09**	-0.07*	-0.07*	-0.07*	-0.07*
Large town	0.05	-0.01	-0.02	-0.03	-0.02	-0.03
Elementary		-0.54***	-0.24***	-0.24***	-0.24***	-0.25***
Tertiary		0.64***	0.46***	0.46***	0.46***	0.47***
Student			0.65***	0.63***	0.63***	0.63***
Self-emp.			-0.02	-0.02	-0.02	-0.01
Inactive			-0.36***	-0.37***	-0.36***	-0.36***
Retired			-0.24***	-0.24***	-0.24***	-0.24***
Mat. status			0.61***	0.6***	0.56***	0.57***
Mat. status squared			-0.02***	-0.02***	-0.02***	-0.02***
Year (09/10)				0.26***	-0.3**	0.52***
Year × Mat. status					0.1***	0.11***
Year × AT						0.27
Year × BE						-0.7***
Year × BG						0.98***
Year × CY						-1.54*
Year × CZ						-0.98***
Year × DK						-1.95***
Year × EE						-0.36
Year × ES						-1.02***
Year × FI						-0.86***
Year × FR						-1.08***
Year × GR						-1.98***
Year × HU						-0.95***
Year × IE						-1.05***
Year × IT						-0.95***
Year × LT						-2.03***
Year × LU						-0.9
Year × LV						-1.07**
Year × MT						-0.18
Year × NL						-1.4***
Year × PL						-1.08***
Year × PT						-0.91***
Year × RO						-2.71***
Year × SE						-0.19
Year × SI						-2.19***
Year × SK						-0.36
Year × UK						-0.67***
R-square	0.22	0.24	0.25	0.28	0.28	0.28
N	44181	44181	44181	44181	44181	44181



Table 14: Explaining satisfaction with policy in 2009 and 2010 – pooled OLS (unstandardized coefficients)

	Model I Country effects	Model II Demographic differences	Model III Schooling	Model IV Labour market participation	Model V Change 2009–10	Model VI Change in material position	Model VII Change in country effect
Constant	0.15***	2.1***	2.22***	-0.86***	-0.78***	-0.62**	-0.74***
AT	2.72***	2.76***	2.85***	2.69***	2.69***	2.68***	2.8***
BE	1.72***	1.73***	1.62***	1.52***	1.52***	1.52***	2.21***
BG	-3.96***	-3.92***	-3.94***	-3.34***	-3.34***	-3.34***	-4***
CY	-0.45	-0.42	-0.41	-0.42	-0.41	-0.41	-0.73
CZ	-1.07***	-1.03***	-1.04***	-1.05***	-1.05***	-1.05***	-1.52***
DK	1.76***	1.76***	1.5***	1.28***	1.28***	1.28***	1.52***
EE	-1.36***	-1.36***	-1.48***	-1.35***	-1.35***	-1.35***	-1.26
ES	-0.13*	-0.12	-0.02	0.02	0.03	0.03	0.11
FI	1.33***	1.34***	1.11***	0.97***	0.97***	0.96***	2.12***
FR	-0.5***	-0.5***	-0.6***	-0.34***	-0.34***	-0.34***	0.36
GR	-4.79***	-4.83***	-4.78***	-4.91***	-4.91***	-4.91***	-4.28***
HU	-3.65***	-3.62***	-3.54***	-3.18***	-3.17***	-3.17***	-3.28***
IE	-0.76***	-0.72***	-0.73***	-0.91***	-0.92***	-0.91***	-1.22
IT	-2.14***	-2.12***	-2.01***	-2.21***	-2.21***	-2.22***	-1.48***
LT	-2.88***	-2.87***	-2.97***	-2.67***	-2.66***	-2.66***	-1.08
LU	3.63***	3.66***	3.53***	3.36***	3.36***	3.36***	3.15
LV	-3.11***	-3.11***	-3.15***	-2.93***	-2.92***	-2.93***	-2.15**
MT	1.18	1.19	1.22	0.98	0.98	0.98	0.79
NL	2.89***	2.93***	2.76***	2.31***	2.31***	2.31***	3.48***
PL	-2.45***	-2.45***	-2.51***	-2.46***	-2.46***	-2.46***	-2.11***
PT	-3.05***	-3.04***	-2.85***	-2.63***	-2.62***	-2.62***	-2.73***
RO	-4.21***	-4.21***	-4.26***	-4.16***	-4.15***	-4.14***	-1.38***
SE	0.66***	0.68***	0.44***	0.18	0.19	0.18	0.3
SI	-0.39	-0.39	-0.41	-0.55*	-0.55*	-0.55**	-0.09
SK	-1.75***	-1.71***	-1.73***	-1.8***	-1.79***	-1.8***	-3***
UK	1.31***	1.31***	1.36***	1.21***	1.22***	1.21***	1.97***
Male		0.42***	0.4***	0.32***	0.32***	0.32***	0.32***
Age		-0.1***	-0.12***	-0.09***	-0.09***	-0.09***	-0.09***
Age squared		0***	0***	0***	0***	0***	0***
Village		-0.07	-0.02	-0.01	-0.01	-0.01	-0.02
Large town		-0.01	-0.06	-0.08	-0.08	-0.07	-0.07
Elementary			-0.43***	-0.17***	-0.17***	-0.17***	-0.18***
Tertiary			0.55***	0.36***	0.36***	0.36***	0.36***
Student				0.42***	0.43***	0.43***	0.42***
Self-emp.				0.16**	0.16**	0.16**	0.17**
Inactive				-0.28***	-0.28***	-0.27***	-0.27***
Retired				-0.11	-0.11	-0.11	-0.1
Mat. status				0.58***	0.58***	0.55***	0.56***
Mat. status squared				-0.02***	-0.02***	-0.02***	-0.02***
Year (09/10)					-0.21***	-0.56***	-0.35**
Year × Mat. status						0.06**	0.08***



Year × AT							-0.08
Year × BE							-0.46*
Year × BG							0.45
Year × CY							0.2
Year × CZ							0.3
Year × DK							-0.17
Year × EE							-0.07
Year × ES							-0.06
Year × FI							-0.78**
Year × FR							-0.46***
Year × GR							-0.43*
Year × HU							0.07
Year × IE							0.21
Year × IT							-0.49***
Year × LT							-1.03**
Year × LU							0.15
Year × LV							-0.52
Year × MT							0.12
Year × NL							-0.77***
Year × PL							-0.24
Year × PT							0.07
Year × RO							-1.81***
Year × SE							-0.09
Year × SI							-0.31
Year × SK							0.77**
Year × UK							-0.51***
R-square	0.20	0.20	0.21	0.23	0.23	0.23	0.23
N	37343	37343	37343	37343	37343	37343	37343

V.2. Analysing the contextual country effects

In the previous section, we concluded that between-country differences (country fixed effects) provide considerable explanatory power when we analyse the dispersion in social climate indices. In this section, we examine between-country differences more closely. In doing so, we include additional country-level variables into our regression model, which means that instead of the country dummies we employ new macro variables. The point of this analysis is to compare the explanatory power of the new country-level variables to the explanatory power of the country dummies (which capture all between-country differences).

Box 2: The methodology of the R-square statistic

The R-square statistic measures how successfully a regression line approximates to real data points. In other words, the statistic is the proportion of variability in a dataset that is accounted for by a statistical model. In this part of the analysis, we calculate the difference in the R-square statistic using different sets of explanatory variables. For example, in order to explain Y, if we calculate first R-square using the set of explanatory variables X, and then perform the same calculation using the set of explanatory variables X+Z, then by taking the difference between the second figure for R-square and the first we get a number that equals the improvement in the fit of the model accounted for by the set of explanatory variables Z, keeping the whole impact of other variables constant.

In Table 15 we express the R-square change in the explanatory model of personal satisfaction compared to the entire set of the previously reviewed control variables (demographic differences, schooling, labour market participation, change between 2009 and 2010, change in material position), but without the country dummies (and their changes over time). The first row of the table shows the R-square change when we introduce the country dummies, which capture all the country differences. For example, compared to all the explanatory variables, when we introduce the country dummies



(country fixed effects) the R-square figure changes by 11.26 percentage points. Since all the between-country differences are captured in the country dummies, it is natural that when, instead of the country fixed effects, we use another country-level indicator, the R-square statistic should change to a lesser extent (by 4.24 percentage points when we introduce GDP instead of the country dummies). But we should note that Transparency International's Corruption Perceptions Index is a fairly good explanatory (increases the R-square statistic by 9 percentage points), and inclusion of the employment rate also significantly increases the model's explanatory power (by more than 6 percentage points).

Regarding the change of macro-level variables (the second row of the table) we see very small numbers. For example, compared to all the control variables and the country fixed effects (country dummies), a change in the country fixed effects increases the total R-square figure by 0.34 percentage points. But if we substitute country fixed effects with GDP, the change in GDP over time adds an extra 0.2 percentage points to the total explained variance. The very small increase in the R-square statistics here is due to the limited within-country variance of the macro indicators. We will therefore look more carefully at the direction, size and significance of the macro statistics and their change later in our analysis.

Table 15: The R-square change in the personal satisfaction model, introducing different kinds of country-level variables (percentage points)

	Country fixed effects	GDP	Employment rate	Unemployment rate	Corruption Perceptions Index	Harmonized Indices of Consumer Prices
I. R-square change compared to all control variables (demographic differences, schooling, labour market participation, change between 2009 and 2010, change in material position)	11.26	4.24	6.28	0.00	9.05	3.09
	The change in country fixed effects	The change in GDP	The change in employment rate	The change in unemployment rate	The change in Corruption Perceptions Index	The change in Harmonized Indices of Consumer Prices
II. R-square change compared to all control variables and the country level contextual variable (above)	0.34	0.20	0.00	0.17	0.01	0.00

Controlling for: male, age, age squared, at least elementary, (secondary), tertiary, student, retired, inactive, self-employed, (employed), material status, square of material status, year dummy, year dummy × material position. All models are significant at 0.001 level.



In Tables 16 and 17, we carry out a similar analysis in the case of satisfaction with the home country's situation and satisfaction with policy, respectively. The results are very similar to those we have already seen in the case of personal satisfaction. The Corruption Perceptions Index and the employment rate are very good explanatory factors. In the case of satisfaction with policy, GDP also performs fairly well. Our results are similar to the findings at the macro level (section III.4). There is a relatively high correlation between the CPI/employment rate and the country averages of social climate indices. The high correlation between personal satisfaction and the GDP at the macro level is not visible at the micro level.

Table 16: The R-square change in the model describing satisfaction with the country's situation, introducing different kinds of country-level variables (percentage points)

	Country fixed effects	GDP	Employment rate	Unemployment rate	Corruption Perceptions Index	Harmonized Indices of Consumer Prices
I. R-square change compared to all control variables (demographic differences, schooling, labour market participation, change between 2009 and 2010, change in material position)	19.04	4.70	11.22	0.41	11.40	3.07
	The change in country fixed effects	The change in GDP	The change in employment rate	The change in unemployment rate	The change in Corruption Perceptions Index	The change in Harmonized Indices of Consumer Prices
II. R-square change compared to all control variables and the country-level contextual variable (above)	0.66	0.49	0.10	0.00	0.06	0.10

Controlling for: male, age, age squared, at least elementary, (secondary), tertiary, student, retired, inactive, self-employed, (employed), material status, square of material status, year dummy, year dummy × material position.

All models are significant at 0.001 level.



Table 17: The R-square change in the policy satisfaction model, introducing different kinds of country-level variables (percentage points)

	Country fixed effects	GDP	Employment rate	Unemployment rate	Corruption Perceptions Index	Harmonized Indices of Consumer Prices
I. R-square change compared to all control variables (demographic differences, schooling, labour market participation, change between 2009 and 2010, change in material position)	17.12	7.55	9.12	0.00	12.75	4.40
	The change in country fixed effects	The change in GDP	The change in employment rate	The change in unemployment rate	The change in Corruption Perceptions Index	The change in Harmonized Indices of Consumer Prices
II. R-square change compared to all control variables and the country-level contextual variable (above)	0.26	0.10	0.01	0.18	0.00	0.10

Controlling for: male, age, age squared, at least elementary (secondary), tertiary, student, retired, inactive, self-employed, (employed), material status, square of material status, year dummy, year dummy × material position.

All models are significant at 0.001 level.

As we noted previously, the change in the aggregate country-level variables contributes only a little to the total explained variance in the case of all three social climate indices. From the R-square statistics alone, we cannot necessarily conclude that the change in macro-level variables has no importance in the relationship to social climate, since the within-country variance of the examined macro statistics is limited. To gauge more precisely the impact of the country-level variables examined, we looked at the standardized regression coefficients, which are, by definition, independent of the variable's standard deviation (Bring, 1994: 210). We report these statistics in Table 18, where we summarize only the coefficients of the (contextual) macro variables and change between 2009 and 2010, controlling for all the variables included in the previous models.

Box 3: The methodology of regression parameters

The regression coefficient (β) represents the net effect of one of the explanatory variables on the dependent variable, keeping all the remaining explanatory variables in the equation constant. In other words, the regression coefficient is the constant that represents the average change in the dependent variable if the explanatory variable changes one unit. It could also be interpreted as the slope of the regression line. Regression parameters are not independent of the variation in the variables. Therefore, to compare the effects of different explanatory variables based on the β -coefficient is difficult, because the size of change is measured in different units. To overcome this problem, a standardized regression parameter (B) is used, which measures in the same unit, namely the standard deviation. B is calculated by using the following equation: $B_i = \beta_i \times (s_i/s_y)$, where s is the standard deviation, i stands for the explanatory variable and y is the dependent variable.



Interpreting the results, we can establish that large GDP PPP or a high employment rate has a positive impact on social climate even at the individual level. The impact of less corruption (measured by the CPI) is also positive (note that large numbers mean less corruption, hence the negative sign in the output). The influence of inflation, keeping all other effects constant, is negative. The coefficient of the unemployment rate is quite ambiguous, because a negative effect is present in the case of personal satisfaction and satisfaction with policy, whereas the coefficient is positive in terms of satisfaction with the country's situation.

Regarding the change in macro statistics (the second row in the case of each model), we can see that, with the exception of the unemployment rate, a change in the macro statistics has the largest effect on satisfaction with the socio-economic environment (the home country's situation). The changes in the macro indicators are sometimes (for example in Model A, with the exception of policy satisfaction) even larger than the impact maintained by the indicator itself (0.27 versus 0.18 in case of personal satisfaction and Model A). Our results show that the changes in the macro statistics do have an influence on people's satisfaction. It is a very important finding and underlines the role of public policy on satisfaction.

Table 18: Standardized regression coefficients of some country-level variables and the effect on social climate indices

		Dependent variable		
		Personal satisfaction	Satisfaction with the home country's situation	Policy satisfaction
Model A	GDP	0.18***	0.17***	0.26***
	Change in GDP	0.27***	0.42***	0.19***
Model B	Employment rate	0.25***	0.31***	0.32***
	Change in employment rate	0.04	0.36***	-0.11**
Model C	Unemployment rate	-0.05***	0.06***	-0.05***
	Change in unemployment rate	0.12***	0.01	0.13***
Model D	Corruption Perceptions Index	0.29***	0.32***	0.37***
	Change in CPI	0.05***	0.11***	-0.02
Model E	Harmonized Indices of Consumer Prices	-0.22***	-0.19***	-0.24***
	Change in HICP	-0.01	-0.05***	-0.05***

Coefficients with *** are different from zero at the significance level of 0.01, coefficients with ** are different from zero at the significance level of 0.05, coefficients with * are different from zero at the significance level of 0.1. Control variables: male, age, age squared, at least elementary, (secondary), tertiary, student, retired, inactive, self-employed, (employed), material status, square of material status, year dummy, year dummy × material position. All models are significant at 0.001 level.



VI. Discussion

In this research note we have worked out a new measure of social climate, based on the responses to questions about satisfaction. We are, however, not the first to have constructed such an indicator, and it is therefore necessary to compare our findings with those of previous researchers, and to check the relevance of some theoretical implications regarding satisfaction as a measure in general.

VI.1. Social climate and previous satisfaction indices

As we mentioned at the very beginning of this note, a set of satisfaction-based social indicators exists and is widely used. Therefore, it is important to know the connection between our social climate measure and the previous indicators. There is a very high correlation between social climate indices and the Satisfaction with Life Index, and we find a moderate correlation between social climate indices and the Economist Intelligence Unit's quality-of-life index (Annex 7). Of our three social climate indices, personal satisfaction correlates best with previous indicators, and satisfaction with the country's situation worst. We should note, however, that compared to both the Satisfaction with Life Index and the quality-of-life index our personal satisfaction measure is much lower in Romania, Bulgaria, Greece and Hungary (Figures 24 and 25). We do not, however, know to what extent this is attributable to the fact that the data were not measured in the same year.

Figure 24: The relationship between personal satisfaction and the quality-of-life index

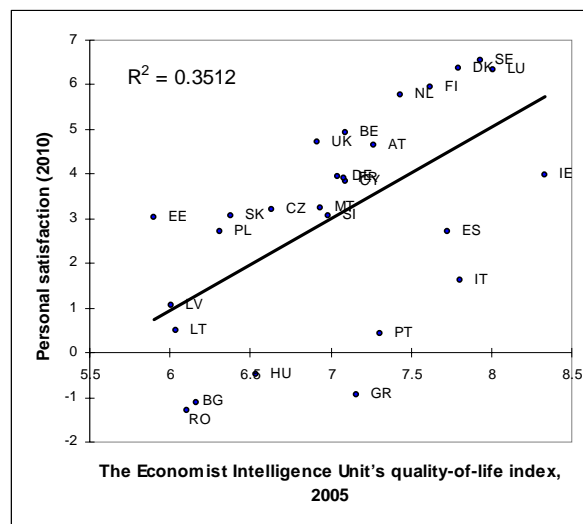
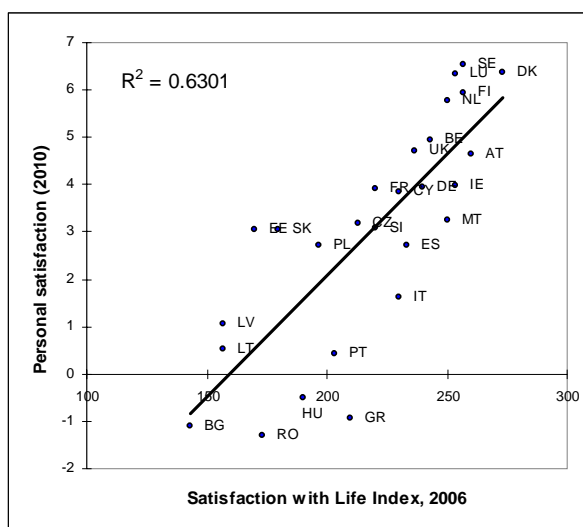




Figure 25: The relationship between personal satisfaction and the Satisfaction with Life Index



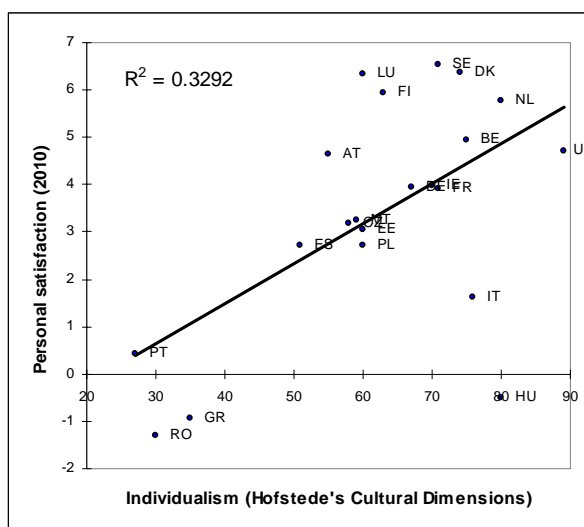
VI.2. Some cultural explanations

As we pointed out before, Suh *et al.* (1998) found that cultural differences may explain why people from different countries report different levels of satisfaction. In individualistic cultures, people may feel more responsible for their own fate, which might bring them greater happiness, and consequently they report greater satisfaction. On the other hand, in collectivistic cultures, satisfaction might be more sensitive to the relationship between people, and consequently the sense of satisfaction has higher aspirations/standards (and a lower level).

To look more closely into this idea, we calculated the correlation coefficients between Hofstede's cultural dimensions and the social climate indices (Annex 7). As we can see, there is a significant correlation between individualism (as defined by Hofstede) and social climate indices, showing that people in individualistic cultures are more satisfied. In the case of Hungary, we can conclude that, although there is an individualistic culture according to Hofstede, personal satisfaction is fairly low (Figure 26). However, Hofstede's other cultural characteristics – such as uncertainty avoidance – have a greater connection with the social climate indices. This means that, in cultures where people are less afraid of changing circumstances, inhabitants are more satisfied. These findings are very important, and we should take cultural consequences into consideration when we analyse countries' satisfaction levels.



Figure 26: The connection between individualism and personal satisfaction



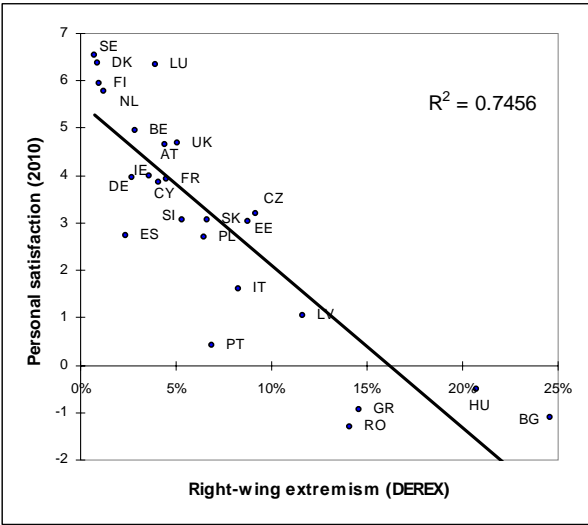
VI.3. The importance of good social climate

What is the relevance/importance of our findings? At the beginning of our research note we cited Hirschman (1970), pointing out that in countries with a favourable social climate citizens try to bring about reform from inside, rather than exit from the relationship when the going gets tough. In other words, if people vote, they are open to internal reforms; if they *exit*, they try to find the solution outside the system. It is, however, hard to find good proxies for exit. One possible indicator might be right-wing extremism (the DEREK Index).³¹ This is a composite indicator measuring trust/mistrust, anti-establishment attitudes, right-wing value orientation, xenophobia and pessimism. 'High demand for right-wing extremism poses broad array of risks for governments: Low levels of trust can render the democratic system unable to function. Anti-elitism and economic protectionism can destroy the investment climate. Xenophobia and aggressive nationalism can endanger both domestic and regional peace. A prejudicial, nationalist and anti-establishment public can push political leaders toward greater radicalism' (HVG, 2010). In other words, these are indicators for finding the solution to social problems outside the existing social and political structures. These symptoms might correspond to a bad social climate. As our results show, the correlation coefficients are high (at least -0.6) in the case of all three social climate indices. The highest correlation (-0.86) is between personal satisfaction and the DEREK Index. Figure 27 shows that in countries where people are dissatisfied with their personal situation, inhabitants are open to right-wing extremism. This is a very serious social problem and should inspire social and policy responses in some EU member states.

³¹ Devised by the Political Capital Institute: <http://www.politicalcapital.hu/>



Figure 27: The connection between personal satisfaction and right-wing extremism





VII. Concluding remarks

In this research note we developed and tested a new measure of social climate, based on existing questionnaire batteries of the Standard Eurobarometer Surveys. From the many (3x15) possible subjective indicators, we chose those indices that are relatively independent of other possible indices and that fit changes in macro data relatively well. After testing various options, we decided to work with the available satisfaction questions (referring to the current situation) and developed three different social climate indices (for the domains, using the same groupings used in the European Commission (2010b)): personal satisfaction (with job, household finances, life in general and neighbourhood quality), satisfaction with the home country's situation (i.e. with cost of living in general, economic situation in general, affordability of energy and housing, employment situation, operation of public administration) and, finally, satisfaction with policy (i.e. with healthcare provision, pensions and unemployment benefits, as well as inequality and poverty-reducing measures and the management of intercultural relations between people). We constructed these indices in such a way as to have theoretically the same minimum and maximum values and range for each of them. We found that people in the EU are mostly satisfied with their personal situation (positive index values), while the majority of EU inhabitants are more dissatisfied with their country's situation (i.e. the indices about the general economic environment of their households). As might be expected, the policy indices vary considerably, in line with the pursuit of social policies in the respective countries.

Social climate is fairly stable (as indeed is natural climate – weather and temperature). However, we need to stress here that, for any further analysis of trends, a longer time series is necessary (currently we have data only for 2008, 2009 and 2010). Social climate corresponds well to the selected country-level macro variables. We found that the three different social climate indices change together (a move in one corresponds to similar shifts in the other two), whereas there is no such relationship between social climate indices and country-level macro variables.

Our analysis has shown that compressing a country's social climate into a single number hides the variation in social climate between various social groups. This is especially true of the personal satisfaction index, which shows a high variation between social groups (defined, most notably, by material position, education and labour market participation). There are no big social distances either in satisfaction with the various policy areas, or in satisfaction with the country's situation. The one exception to this rule is self-reported material position, which accounts for large differences in social climate on all three indices.

The micro analysis confirmed that there are large country effects in social climate. While other explanatory variables also have significant impacts on social climate, their importance – especially in terms of satisfaction with policy and satisfaction with the country's situation – remains marginal. To explain country differences, we experimented with various country-specific macro variables and found that the employment rate and the Corruption Perceptions Index contribute very substantially to the explanation of cross-country differences in social climate (more employment and less corruption mean greater satisfaction). The change in macro parameters (like GDP, for example) have the largest effect on satisfaction with the country's situation (but much less on personal satisfaction and on satisfaction with policy).



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Annex 1: The questions used to measure the social climate

Eurobarometer surveys used in the analysis (EB 70.1; EB 72.2; EB 73.5)

Q1	On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead?				
	Very satisfied	Fairly satisfied	Not very satisfied	Not at all satisfied	DK
	1	2	3	4	5

Q2	How would you judge the current situation in each of the following?					
		Very good	Rather good	Rather bad	Very bad	DK
1	The area you live in	1	2	3	4	5
2	Healthcare provision in (OUR COUNTRY)	1	2	3	4	5
3	The provision of pensions in (OUR COUNTRY)	1	2	3	4	5
4	Unemployment benefits in (OUR COUNTRY)	1	2	3	4	5
5	The cost of living in (OUR COUNTRY)	1	2	3	4	5
6	Relations in (OUR COUNTRY) between people from different cultural or religious backgrounds or nationalities	1	2	3	4	5
7	The way inequalities and poverty are addressed in (OUR COUNTRY)	1	2	3	4	5
8	The affordability of energy in (OUR COUNTRY)	1	2	3	4	5
9	The affordability of housing in (OUR COUNTRY)	1	2	3	4	5
10	The way public administration operates in (OUR COUNTRY)	1	2	3	4	5
11	The economic situation in (OUR COUNTRY)	1	2	3	4	5
12	Your personal job situation	1	2	3	4	5
13	The financial situation of your household	1	2	3	4	5
14	The employment situation in (OUR COUNTRY)	1	2	3	4	5

Q3	What are your expectations for the next 12 months: will the next 12 months be better, worse or the same, when it comes to...?				
		Better	Worse	Same	DK
1	your life in general	1	2	3	4
2	the area you live in	1	2	3	4
3	the healthcare system in (OUR COUNTRY)	1	2	3	4
4	the provision of pensions in (OUR COUNTRY)	1	2	3	4
5	unemployment benefits in (OUR COUNTRY)	1	2	3	4
6	the cost of living in (OUR COUNTRY)	1	2	3	4
7	relations in (OUR COUNTRY) between people from different cultural or religious backgrounds or nationalities	1	2	3	4
8	the way inequalities which might lead to poverty are addressed in (OUR COUNTRY)	1	2	3	4
9	the way public administration operates in (OUR COUNTRY)	1	2	3	4
10	how affordable energy is in (OUR COUNTRY)	1	2	3	4
11	how affordable housing is in (OUR COUNTRY)	1	2	3	4
12	the economic situation in (OUR COUNTRY)	1	2	3	4
13	your personal job situation	1	2	3	4
14	the financial situation of your household	1	2	3	4
15	the employment situation in (OUR COUNTRY)	1	2	3	4



Q4 Compared with five years ago, would you say things have improved, got worse or stayed about the same when it comes to...?		Improved	Got worse	Stayed about the same	DK/NA
1	your life in general	1	2	3	4
2	the area you live in	1	2	3	4
3	the healthcare system in (OUR COUNTRY)	1	2	3	4
4	the provision of pensions in (OUR COUNTRY)	1	2	3	4
5	unemployment benefits in (OUR COUNTRY)	1	2	3	4
6	the cost of living in (OUR COUNTRY)	1	2	3	4
7	relations in (OUR COUNTRY) between people from different cultural or religious backgrounds or nationalities	1	2	3	4
8	the way inequalities which might lead to poverty are addressed in (OUR COUNTRY)	1	2	3	4
9	the way public administration operates in (OUR COUNTRY)	1	2	3	4
10	how affordable energy is in (OUR COUNTRY)	1	2	3	4
11	how affordable housing is in (OUR COUNTRY)	1	2	3	4
12	the economic situation in (OUR COUNTRY)	1	2	3	4
13	your personal job situation	1	2	3	4
14	the financial situation of your household	1	2	3	4
15	the employment situation in (OUR COUNTRY)	1	2	3	4



Annex 2: Correlation coefficient among the differently measured satisfaction indices

- A. Taking the average, without DK.
- B. $(\text{Percentage of 'very good' + 'rather good'}) - (\text{Percentage of 'very bad' + 'rather bad'})$.
- C. Percentage of 'very good'.
- D. $(\text{Percentage of 'very good' + 'rather good'}) / (\text{Percentage of 'very bad' + 'rather bad'})$.
- E. $(\text{Percentage of 'very good'}) / (\text{Percentage of 'very bad'})$.

Correlation coefficients between various kinds of satisfaction indices, based on the question 'Satisfaction with *life in general*'

	B	C	D	E
A	0.98	0.98	0.70	0.63
B		1.00	0.55	0.52
C			0.56	0.52
D				0.94

Correlation coefficients between various kinds of satisfaction indices based on the question 'Satisfaction with *the area you live in*'

	B	C	D	E
A	0.96	0.96	-0.82	-0.82
B		1.00	-0.80	-0.64
C			-0.79	-0.61
D				0.84

Correlation coefficients between various kinds of satisfaction indices based on the question 'Satisfaction with *the healthcare provision*'

	B	C	D	E
A	1.00	1.00	0.83	0.68
B		1.00	0.72	0.58
C			0.72	0.58
D				0.94

Correlation coefficients between various kinds of satisfaction indices based on the question 'Satisfaction with *the provision of pension*'

	B	C	D	E
A	1.00	1.00	0.82	0.70
B		1.00	0.71	0.60
C			0.71	0.60
D				0.97



Correlation coefficients between various kinds of satisfaction indices based on the question 'Satisfaction with *the unemployment benefit*'

	B	C	D	E
A	1.00	1.00	0.89	0.77
B		1.00	0.78	0.66
C			0.78	0.67
D				0.96

Correlation coefficients between various kinds of satisfaction indices based on the question 'Satisfaction with *the cost of living*'

	B	C	D	E
A	0.99	0.99	0.92	0.85
B		1.00	0.83	0.78
C			0.83	0.78
D				0.95

Correlation coefficients between various kinds of satisfaction indices based on the question 'Satisfaction with *the relationship between people*'

	B	C	D	E
A	0.99	0.99	0.96	0.80
B		1.00	0.62	0.56
C			0.62	0.56
D				0.79

Correlation coefficients between various kinds of satisfaction indices based on the question 'Satisfaction with *the way inequalities and poverty are addressed*'

	B	C	D	E
A	0.99	0.99	0.95	0.77
B		1.00	0.85	0.72
C			0.85	0.72
D				0.87

Correlation coefficients between various kinds of satisfaction indices based on the question 'Satisfaction with *the way public administration operates*'

	B	C	D	E
A	0.99	0.99	0.95	0.83
B		1.00	0.81	0.76
C			0.82	0.76
D				0.91

Correlation coefficients between various kinds of satisfaction indices based on the question 'Satisfaction with *the affordability of energy*'

	B	C	D	E
A	1.00	1.00	0.88	0.71
B		1.00	0.78	0.63
C			0.78	0.63
D				0.92



Correlation coefficients between various kinds of satisfaction indices based on the question
 'Satisfaction with *the affordability of housing*'

	B	C	D	E
A	0.99	0.99	0.96	0.82
B		1.00	0.88	0.77
C			0.88	0.77
D				0.88

Correlation coefficients between various kinds of satisfaction indices based on the question
 'Satisfaction with *the economic situation*'

	B	C	D	E
A	0.99	0.99	0.91	0.67
B		1.00	0.84	0.60
C			0.84	0.60
D				0.88

Correlation coefficients between various kinds of satisfaction indices based on the question
 'Satisfaction with *the personal job situation*'

	B	C	D	E
A	0.99	0.99	0.90	0.85
B		1.00	0.72	0.67
C			0.72	0.67
D				0.87

Correlation coefficients between various kinds of satisfaction indices based on the question
 'Satisfaction with *the financial situation of household*'

	B	C	D	E
A	0.99	0.99	0.87	0.79
B		1.00	0.73	0.64
C			0.73	0.65
D				0.97

Correlation coefficients between various kinds of satisfaction indices based on the question
 'Satisfaction with *the employment situation*'

	B	C	D	E
A	0.99	0.99	0.92	0.81
B		1.00	0.87	0.80
C			0.87	0.80
D				0.97



Annex 3: The stability of the questions used to construct cumulated indices (principal component analysis)

Questions about personal satisfaction

	Correlation with the first principal component (2008)	Correlation with the first principal component (2009)	Correlation with the first principal component (2010)
Life in general	0.79	0.80	0.80
The area you live in	0.60	0.62	0.59
Personal job situation	0.83	0.81	0.81
Financial situation of household	0.85	0.85	0.85
Eigenvalue	2.41	2.40	2.38
Cumulative Sums of Squared Loadings	60.20	59.89	59.58

Questions about satisfaction with the home country (socio-economic environment)

	Correlation with the first principal component (2008)	Correlation with the first principal component (2009)	Correlation with the first principal component (2010)
The cost of living	0.76	0.77	0.77
The way public administration operates	0.68	0.66	0.68
The affordability of energy	0.66	0.67	0.65
The affordability of housing	0.72	0.72	0.71
The economic situation	0.71	0.75	0.77
The employment situation	0.73	0.71	0.72
Eigenvalue	3.03	2.40	3.08
Cumulative Sums of Squared Loadings	50.48	59.89	51.39



Questions about satisfaction with policy³²

	Correlation with the first principal component (2008)	Correlation with the first principal component (2009)	Correlation with the first principal component (2010)
Healthcare provision	0.79	0.78	0.79
Provision of pensions	0.84	0.85	0.86
Unemployment benefits	0.81	0.81	0.81
Relations between people	0.42	0.41	0.33
Eigenvalue	2.17	2.14	2.13
Cumulative Sums of Squared Loadings	54.27	53.61	53.13

³² The question about satisfaction with 'the way inequalities and poverty are addressed' was not asked in 2008 in the same way as it was in 2009 and 2010. After examining the relationship between the questions, we decided not to include this question in the principal component analysis. But the question was included to construct the policy satisfaction index in 2009 and 2010.

Annex 4: Social climate indices, 2010, and the ranking of countries (further statistics)

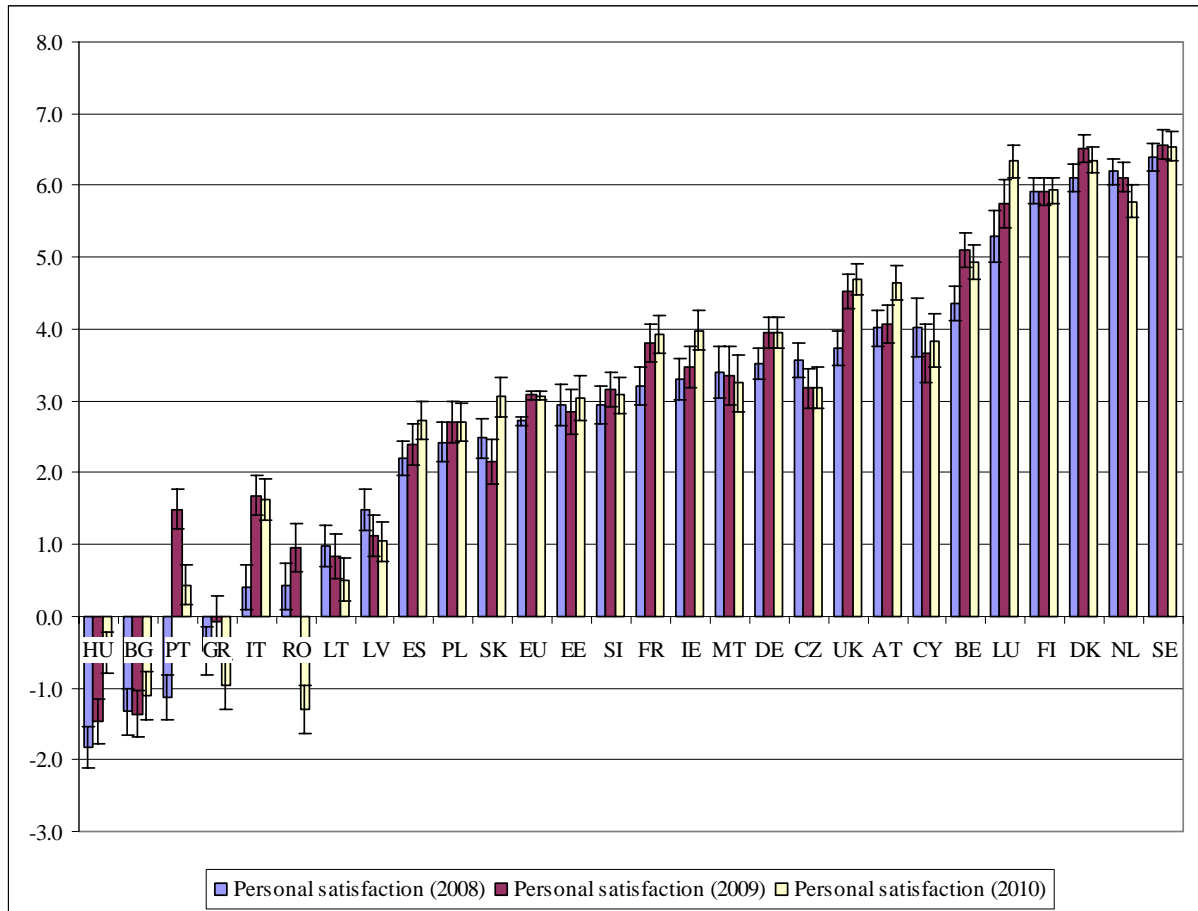
	Personal satisfaction (2010)	Satisfaction with the country's situation (2010)	Satisfaction with policy (2010)	Ranking: Personal satisfaction	Ranking: Satisfaction with the country's situation	Ranking: Satisfaction with policy	Difference between minimum and maximum ranking
RO	-1.30	-6.97	-4.90	1	1	1	0
BG	-1.11	-4.01	-3.65	2	8	3	6
GR	-0.95	-6.92	-4.82	3	2	2	1
HU	-0.50	-5.95	-3.43	4	4	4	0
PT	0.43	-5.76	-2.96	5	5	7	2
LT	0.51	-6.02	-3.11	6	3	6	3
LV	1.04	-3.79	-3.15	7	12	5	7
IT	1.62	-4.28	-2.09	8	7	9	2
PL	2.71	-3.64	-2.30	9	13	8	5
ES	2.72	-3.58	0.05	10	14	18	8
EE	3.04	-0.43	-1.19	11	23	11	12
SK	3.05	-3.24	-1.22	12	16	10	6
EU27	3.07	-2.88	-0.76	13	18	12	6
SI	3.08	-3.85	-0.32	14	11	16	5
CZ	3.19	-1.94	-0.76	15	20	13	7
MT	3.25	-3.38	1.47	16	15	23	8
CY	3.84	-3.86	-0.27	17	10	17	7
FR	3.92	-3.94	-0.51	18	9	15	9
DE	3.96	-0.54	0.08	19	22	19	3
IE	3.98	-5.43	-0.56	20	6	14	14
AT	4.65	1.36	2.92	21	27	27	6
UK	4.70	-3.23	1.29	22	17	22	5
BE	4.93	-2.09	1.69	23	19	24	5
NL	5.78	0.70	2.83	24	25	26	2
FI	5.93	-0.87	1.21	25	21	21	4
LU	6.34	0.14	3.92	26	24	28	4
DK	6.36	1.12	1.95	27	26	25	2
SE	6.54	1.60	0.95	28	28	20	8
Minimum	-1.30	-6.97	-4.90				0.00
Maximum	6.54	1.60	3.92				14.00
Range	7.84	8.57	8.82				14.00
Median	3.13	-3.48	-0.54				5.00
Mean	3.03	-2.92	-0.63				5.25
Std. dev.	2.33	2.50	2.35				3.33

Note: The smaller the index value, the rank position of the country is more forward.



Annex 5: The change in social climate indices over time

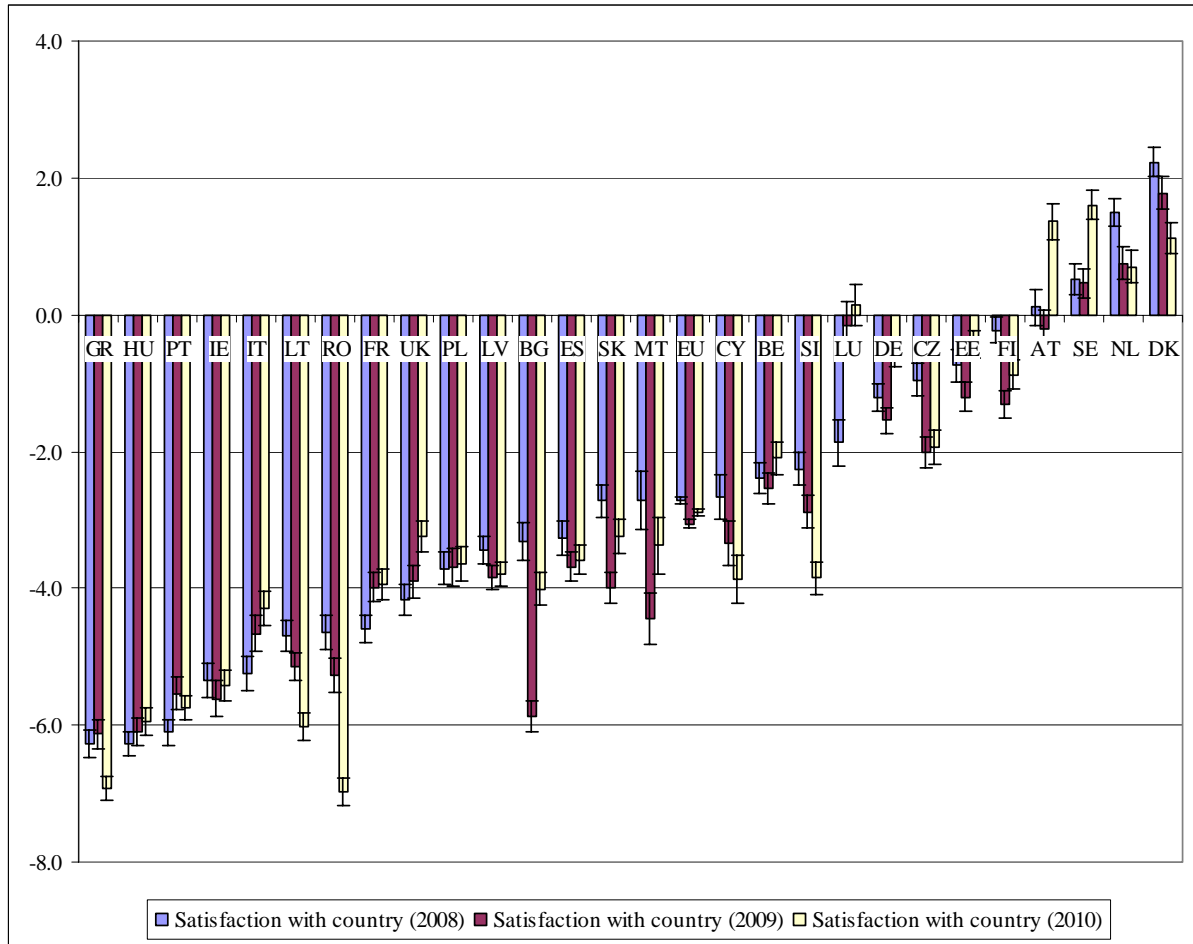
The change in personal satisfaction 2008–10 – mean values in 95% confidence interval



Countries are ranked according to their position in 2008.



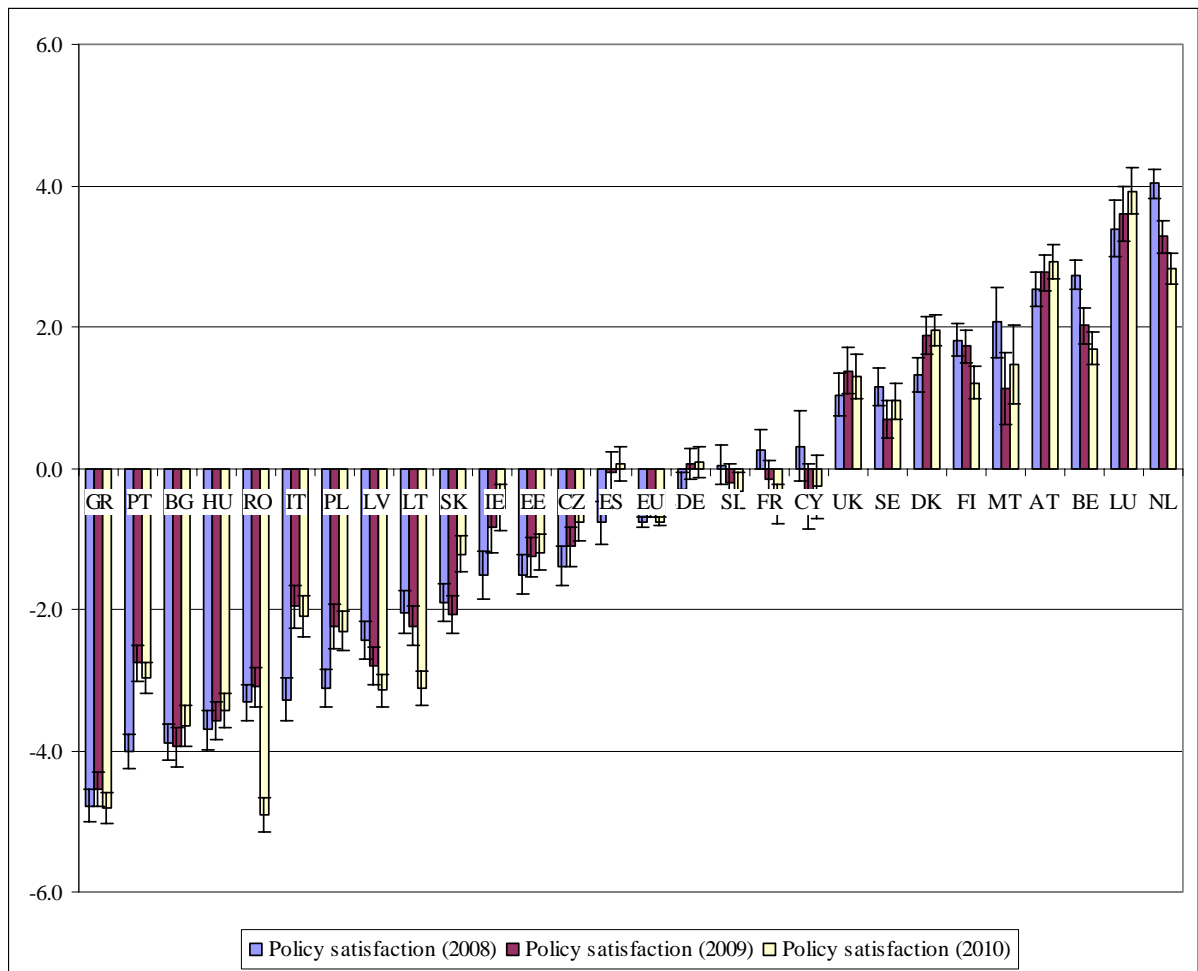
The change in satisfaction with the home country's situation 2008–10 – mean values in 95% confidence interval



Countries are ranked according to their position in 2008.



The change in satisfaction with policy 2008–10 – mean values in 95% confidence interval



Countries are ranked according to their position in 2008.



The direction and significance of year-to-year changes in the three kinds of social climate indices

	Personal satisfaction			Satisfaction with socio-economic environment			Satisfaction with policy		
	2008/2009	2009/2010	2008–2010	2008/2009	2009/2010	2008–2010	2008/2009	2009/2010	2008–2010
AT	+	+*	+*	–	+*	+*	+	+	+
BE	+*	–	+*	–	+	+	–*	–	–*
BG	–	+	+	–*	+*	–*	–	+	+
CY	–	+	–	–*	–	–*	–	+	–
CZ	–	+	–	–*	+	–*	+	+	+*
DE	+	+	+	–	+*	+*	+	+	+
DK	+*	–	+	–*	–*	–*	+*	+	+*
EE	–	+	+	–*	+*	+	+	+	+
ES	+	+	+*	–	+	–	+*	+	+*
FI	–	+	+	–*	+*	–*	–	–*	–*
FR	+*	+	+*	+*	+	+*	–	–	–*
GR	+	–*	–	+	–*	–*	+	–	–
HU	+	+*	+*	+	+	+	+	+	+
IE	+	+	+*	–	+	–	+	+	+*
IT	+*	–	+*	+*	+	+*	+*	–	+*
LT	–	–	–	–*	–*	–*	–	–*	–*
LU	+	+*	+*	+*	+	+*	+	+	+
LV	–	–	–	–*	+	–	–	–	–*
MT	–	–	–	–*	+*	–	–	+	–
NL	–	–	–*	–*	–	–*	–*	–*	–*
PL	+	+	+	+	+	+	+*	–	+*
PT	+*	–*	+*	+*	–	+	+*	–	+*
RO	+	–*	–*	–*	–*	–*	+	–*	–*
SE	+	–	+	–	+*	+*	–	+	–
SI	+	–	+	–*	–*	–*	–	–	–
SK	–	+*	+*	–*	+*	–*	–	+*	+*
UK	+*	+	+*	+	+*	+*	+	–	+
EU	+*	–	+*	–*	+*	–*	+*	–*	+

We calculated the change in the country mean simply by subtracting the country means from one another. If the difference was positive, we indicate it with '+', if it was negative we indicate it with '–'. If the 95% confidence intervals around the means do not overlap, we regard the change as significant and indicate it with '*'.



Annex 6: A description of some macro statistics used in the analysis

	Short description	Source of data
Employment rate	The employment rate is calculated by dividing the number of persons aged 15 to 64 in employment by the total population of the same age group. The indicator is based on the EU Labour Force Survey. The survey covers the entire population living in private households and excludes those in collective households, such as boarding houses, halls of residence and hospitals. Employed population consists of those persons who during the reference week did any work for pay or profit for at least one hour, or were not working but had jobs from which they were temporarily absent.	Eurostat New Cronos database
GDP PPP	Gross domestic product is a measure of economic activity. It is defined as the value of all goods and services produced, less the value of any goods or services used in their creation. Gross domestic product is calculated per capita and is measured at market prices in Purchasing Power Parity (PPP).	Eurostat New Cronos database
HICP	Harmonized Indices of Consumer Prices are designed for international comparisons of consumer price inflation. HICP is used, for example, by the European Central Bank for monitoring of inflation in the Economic and Monetary Union and for the assessment of inflation convergence.	Eurostat New Cronos database
Income quintile share ratio (S80/S20)	The ratio of total equivalized disposable income received by the 20% of the population with the highest income (top quintile) to that received by the 20% with the lowest income (lowest quintile).	Eurostat New Cronos database
Unemployment rate	The unemployment rate represents unemployed persons as a percentage of the labour force based on the International Labour Organization (ILO) definition. The labour force is the total number of people employed and unemployed. Unemployed persons comprise persons aged 15 to 74 who: are without work during the reference week; are available to start work within the next two weeks; and have been actively seeking work in the past four weeks or have already found a job to start within the next three months.	Eurostat New Cronos database
Material deprivation for the 'Economic strain' and 'Durables' dimensions	The percentage of people who lack no items from the list of durables (telephone, washing machine, computer, colour TV, personal car) or who have no financial constraints in several domains.	Eurostat New Cronos database, calculations from EU-SILC
Material deprivation for the 'Housing' dimension	The percentage of people in the total population lacking no items on a list containing shortages in housing.	Eurostat New Cronos database, calculations from EU-SILC
Median pensions relative to median earnings	Median individual pension income of retirees aged 65–74 in relation to median earnings of employed persons aged 50–59, excluding social benefits other than pensions.	http://ec.europa.eu/social/BlobServlet?docId=5385&langId=en
HDI	Human Development Index (HDI) is a composite statistic used to rank countries by level of 'human development'. The statistic is composed of data on life expectancy, education and per capita GDP (as an indicator of standard of living) collected at the national level.	Human Development Report published by UNDP



DEREX	Demand for Right-Wing Extremism Index measures and compares people's predisposition to far right-wing politics in 32 countries, using data from the European Social Survey.	Political Capital Institute
CPI	Corruption Perceptions Index (CPI) introduced by Transparency International, which focuses on corruption in the public sector. The CPI draws on the results of corruption surveys carried out by various independent institutions. The index measures corruption on an 11-point scale, from 0 (highly corrupt) to 10 (corruption free).	Transparency International



Annex 7: Data used in the chapter 'Discussion'

Country	Personal satisfaction (2010)	Satisfaction with the home country's situation (2010)	Satisfaction with policy (2010)	Individualism (Hofstede's cultural dimensions) ³³	Uncertainty avoidance (Hofstede's cultural dimensions) ³⁴	The Economist Intelligence Unit's quality-of-life index, 2005 ³⁵	Satisfaction with Life Index, 2006 ³⁶
AT	4.65	1.36	2.92	55	70	7.27	260.00
BE	4.93	-2.09	1.69	75	94	7.10	243.33
BG	-1.11	-4.01	-3.65			6.16	143.33
CY	3.84	-3.86	-0.27			7.10	230.00
CZ	3.19	-1.94	-0.76	58	74	6.63	213.33
DE	3.96	-0.54	0.08	67	65	7.05	240.00
DK	6.36	1.12	1.95	74	23	7.80	273.40
EE	3.04	-0.43	-1.19	60	60	5.91	170.00
ES	2.72	-3.58	0.05	51	86	7.73	233.33
FI	5.93	-0.87	1.21	63	59	7.62	256.67
FR	3.92	-3.94	-0.51	71	86	7.08	220.00
GR	-0.95	-6.92	-4.82	35	112	7.16	210.00
HU	-0.50	-5.95	-3.43	80	82	6.53	190.00
IE	3.98	-5.43	-0.56	70	35	8.33	253.33
IT	1.62	-4.28	-2.09	76	75	7.81	230.00
LT	0.51	-6.02	-3.11			6.03	156.67
LU	6.34	0.14	3.92	60	70	8.02	253.33
LV	1.04	-3.79	-3.15			6.01	156.67
MT	3.25	-3.38	1.47	59	96	6.93	250.00
NL	5.78	0.70	2.83	80	53	7.43	250.00
PL	2.71	-3.64	-2.30	60	93	6.31	196.67
PT	0.43	-5.76	-2.96	27	104	7.31	203.33
RO	-1.30	-6.97	-4.90	30	90	6.11	173.33
SE	6.54	1.60	0.95	71	29	7.94	256.67
SI	3.08	-3.85	-0.32			6.99	220.00
SK	3.05	-3.24	-1.22			6.38	180.00
UK	4.70	-3.23	1.29	89	35	6.92	236.67
Correlation with personal satisfaction	-	-	-	0.57	-0.68	0.59	0.79
Correlation with the country satisfaction	-	-	-	0.41	-0.59	0.34	0.57
Correlation with policy satisfaction	-	-	-	0.51	-0.51	0.58	0.80

³³ Source of data: http://www.geert-hofstede.com/hofstede_dimensions.php

³⁴ Source of data: http://www.geert-hofstede.com/hofstede_dimensions.php

³⁵ Source of data: http://www.economist.com/media/pdf/QUALITY_OF_LIFE.pdf

³⁶ Source of data: http://en.wikipedia.org/wiki/Satisfaction_with_Life_Index