THE WILLIAM DAVIDSON INSTITUTE
AT THE UNIVERSITY OF MICHIGAN

The Emerging Aversion to Inequality: Evidence from Poland 1992-2005

By: Irena Grosfeld and Claudia Senik

The Emerging Aversion to Inequality: Evidence from Poland 1992-2005

Irena Grosfeld* and Claudia Senik**

April 5, 2008

Abstract

This paper provides an illustration of the changing tolerance for inequality in a context of radical political and economic transformation and rapid economic growth. We focus on the Polish experience of transition and explore self-declared attitudes of the citizens. Using monthly representative surveys of the population, realized by the Polish poll institute (CBOS) from 1992 to 2005, we identify a structural break in the relation between income inequality and subjective evaluation of well-being. The downturn in the tolerance for inequality (1997) coincides with the increasing distrust of political elites.

Key words: inequality, subjective satisfaction, breakpoint, transition.

JEL: C25, D31, I30, P20, P26

* Paris School of Economics (CNRS), e-mail : grosfeld@pse.ens.fr

**Paris School of Economics (University Paris-Sorbonne, IZA and Institut Universitaire de France), e-mail : senik@pse.ens.fr

"The rulers are not necessarily given any advance notice about (…) the time at which they ought to be on the lookout for a drastically different climate of public and popular opinion; on the contrary, they are lulled into complacency by the easy early stage when everybody seems to be enjoying the very process that will later be vehemently denounced and damned as one consisting essentially in "the rich becoming richer" (Hirschman and Rothschild , 1973, p.552).

Introduction

Does inequality spoil welfare benefits of growth? And if so, can it reduce popular support for economic reforms? In this paper, we show that during a period of rapid economic growth accompanied by important income differentiation, the tolerance for inequality can evolve over time and become a factor of unhappiness and dissatisfaction De facto, in Central and Eastern European countries, which engaged at the beginning of the 1990s in a process of profound political and economic transformation, "reform fatigue" and disenchantment (Kornai, 2006; Desai et Olofsgärd, 2006) appeared after a couple of years of significant achievements. Despite important successes in building democratic and market institutions, despite continuous economic growth and increasing level of prosperity, despite joining NATO and the European Union, the mood of public opinion changed at the end of the last century. Growing tensions between democracy and liberalism and the rise of populist parties was observed in several countries of the region (Krastev, 2007). Popular discontent was fueled by increasing public distrust of political elites viewed as corrupt and self-interested.

We focus on the experience of Poland, which, after 45 years of communism, has engaged, since 1989, in a process of radical transformation (Sachs, 1993). This peaceful and negotiated "refolution" [1] consisting in the twin transition towards democracy and a market economy brought about radical changes of attitudes and expectations. Initially, the process relied on high expectations and massive support from the population. Immense hopes were entrusted in the mere abandon of socialism. In the middle of the 1990s, however, this consensual period started to close down and the initial enthusiasm gave way to disappointment: expectations

---

[1] This is a term used by Garton Ash (1989) to describe the combination of gradual reforms and revolutionary change.

began to be confronted with experience. Progressively, criticisms of some outcomes of transition, including corruption, growing inequality [2] and the high price paid by the losers of transition, became the dominant theme of public discourse.

In a premonitory paper, Hirschman and Rothschild (1973) suggested that societies experiencing rapid development may initially show tolerance for higher inequality, because it is interpreted in terms of greater opportunities. Even the increase in other people's income is then seen as encouraging information about each person's prospects. However, the authors also argued that the tolerance for inequality may wither away with time: if their expectations are not met, supporters of the process of development may become enemies. This may also happen when people acquire a more precise vision of their place and destiny in society. After such a "turning point", the side-effects of development, in particular the increase in inequality, may overcompensate subjective benefits of growth.

Most of the existing literature has documented the relation between income inequality and satisfaction in given environments, sometimes in a comparative static approach, contrasting Europe and the United-States (Alesina et al., 2004) or the Old Europe versus the New Europe and the United States (Senik, 2005). The experience of eighteen years of transition now makes it possible to investigate how the relation between inequality and satisfaction evolved over time.

Taking advantage of a long Polish dataset with high frequency (bi-monthly), covering the period 1992 - 2005, we explore the evolution of subjective attitudes of the Polish citizens during the initial and later stages of transition. We hinge on the self-declared satisfaction with the state of the Polish economy (henceforth "country satisfaction"), which is both a satisfaction category and a political attitude. We also use two other self-declared satisfaction variables: 1/ "satisfaction with the living conditions of one's family (henceforth "private satisfaction"), and 2/ expectations concerning the living conditions of one's family in the near future ("private expectations").

---

[2] The rise of income inequality in transition countries has been documented and explained by, for instance, Brainerd (1998), Milanovic (1998, 1999) or Kornai (2006).

The main objective of this paper is to test whether the scenario sketched by Hirschman and Rothschild can explain the surprising hump shape of average satisfaction in Poland, in a context of strong and permanent national income growth. As shown by Figure 1 (section 3), individual satisfaction, especially satisfaction with the economic situation of the country, initially follows the rise in GDP, but at a certain point located around 1996-1997, dissociates from GDP and even starts declining.

If this evolution is explained by Hirschman and Rothschild's conjecture, we should be able to identify a structural break in the relationship between satisfaction and inequality over time: in the first period, country satisfaction and private expectations should increase with inequality because the latter is essentially interpreted as an increase in the scope of opportunities. However in a second stage, the impact of income inequality should become negative. We thus test for the existence of such a breakpoint. We do not impose the date of this possible discontinuity: instead, we look over the entire series and use the *sup-Wald* test (Andrews 1993) to identify the existence and the location of the breakpoint.

The result of the test indicates that the point of break is situated at the end of year 1996. Consequently, we look at the relationship between income inequality and satisfaction before and after the time of change. It turns out that popular satisfaction with the country's economic situation initially improves with the rise in income inequality but is negatively affected by inequality later on. The relationship between income inequality and individuals' expectations concerning the future situation of their households follows a similar pattern: in the first period, inequality is associated with higher expectations; in the second period, it ceases to affect expectations, suggesting that it looses its informational value in the eyes of the population. Finally, income inequality significantly reduces private satisfaction after 1996, whereas it does not exert a significant impact before that date.

 Dissatisfaction with the economic situation of the country is also reflected by other political attitudes. We find that the percentage of people who self-position themselves on the extremes of the political spectrum has significantly increased since 1996. More evidence on the evolution of public opinions suggests that the changing tolerance for inequality coincides with the increasingly widespread perception that high incomes are due to corruption and other unfair processes.

The next section reviews the related literature, section 2 summarizes the evolution of the political situation in Poland, section 3 presents the data, section 4 discusses the empirical strategy, section 5 presents the results and section 6 concludes.

1. Literature

This paper is situated at the cross-road of several strands of the literature. It takes its motivation from the political economy of development that focuses on income inequality. A frequent claim is that inequality and the demand for redistribution that it generates constitute an obstacle on the way to economic growth (Alesina and Rodrik, 1994, Persson and Tabellini, 1994): concerns for income distribution may hinder the adhesion of citizens to the deepening of market reforms or development policies, when growth is accompanied by income inequality, as suggested by the Kuznets curve (1955). Alesina and Perotti (1993) provide empirical evidence that income inequality fuels social discontent and instability. Acemoglu and Robinson (2000, 2002) argue that much of the historical evolutions in nineteen century's Europe, in particular the extension of voting rights that led to unprecedented redistributive programs, can be viewed as a strategy of the elite to avoid political unrest and revolution, which in turn was fed by rising inequalities due to economic development and industrialization.

We address this issue with the tools of the "happiness literature" that analyzes the self-declared satisfaction and attitudes of individuals. The paper first relates to an important body of literature which concentrates on the relationship between income distribution and self-rated happiness. Most of these studies find that the degree of individuals' inequality aversion depends on their perception of income mobility, i.e. on their beliefs concerning the factors of economic success and failure (Alesina et al. 2001; Fong 2001; Alesina and la Ferrara 2005; Alesina and Angeletos 2005). Alesina et al. (2004) show that inequality does not affect life satisfaction of American people, while it reduces self-declared happiness of Europeans; this is because « … *in the U.S., the poor see inequality as a ladder that, although steep, may be climbed, while in Europe the poor see that ladder as more difficult to ascend* ». Sanfey and Teksoz (2007) also find that in transition countries, income inequality has a positive impact on life satisfaction, whereas the impact is negative in other countries of the World Values Survey.

The nodal question of the happiness literature is the subjective welfare impact of income: own income as well as income distribution. This is because its first and foremost motivation comes from the so-called Easterlin paradox, i.e., the empirical observation that national average self-declared happiness does not increase during periods of national income growth (Easterlin 2001). The current paper shares this type of interrogation, as its objective is to explain why the satisfaction of Polish citizens fell in the late mid-1990's whereas GDP continued to increase.

With similar objectives and method, other articles situated at the intersection of the growing happiness literature and the vast transition literature, have analyzed the specific structure and evolution of satisfaction during the transition process. These include, inter alia, Sanfey et Teksoz (2007), Kornai (2006), Easterlin and Zimmermann (2006), Guriev and Zhuravskaia (2007), Easterlin (2008), etc. One of the principal issues addressed by these papers is the weaker relation, ceteris paribus, between income growth and life satisfaction in transition countries, as compared to non-transition countries. Other papers have used the experience of transition as a sort of giant « natural experiment » in order to study the welfare effects of more specific changes, such as increased household income (Graham and Pettinato 2002, Frijters, Haisken-de-New and Shields 2004), inequality (Ravallion and Lokshin 2000, Alesina and Fuchs-Schuendeln 2007) and income comparisons (Ferrer-i-Carbonnel 2004, Senik 2004, 2005).

Following the research direction opened by Hirschman and Rothschild (1973), this paper explores the dynamic aspect of the relation between development, income inequality and subjective welfare during some eighteen years of transition in Poland. Our main hypothesis is that the fall in self-declared satisfaction in the late 1990's is due to the rise in inequality and the way income differentiation is interpreted by Polish citizens.

2. The evolution of political attitudes in Poland

The evolution of public opinion in Poland is reflected to some extent in the results of parliamentary elections (Table 1). The constant reshuffling of the political supply notwithstanding, one clear trend is the growing influence of left-wing parties up to 2001 and the declining support to liberal pro-reform parties.

A particular inflexion in the voting behavior is visible after 1997. It coincides with the announcement by the newly appointed centre-right government of a wave of second-generation welfare state reforms (related to health, pensions and education), met with reluctance by the population. The spectacular upsurge in the votes for the left in the next elections in 2001, and the important increase in the support for an openly populist party Samoobrona, can both be interpreted as protest votes against the policy of the coalition government of AWS/UW, in power between 1997 and 2001. In the 2005 elections, the support to the left-wing parties, in power from 2001 to 2005, shrinks from 41% to 15%; this defeat is clearly a price paid for the budgetary discipline imposed during the process of accession to the European Union. It is also related to the outbreak of several corruption scandals (Freedom House, 2005). In the same time, two right-wing parties, the national-conservative *Law and Justice* (PiS) and the liberal-conservative *Civic Platform* (PO) triple and double their score. Law and Justice wins the election addressing its electoral campaign to the losers of transition and underlining the opposition between "Poland of Solidarity" and "liberal Poland". Negative outcomes of reforms, such as corruption and social stratification are in the center of electoral debates.

Several public opinion polls reflect the weakening of the political support for reforms after 1997. Figure 1 drawing on a Public Opinion Research Center survey (CBOS, 2003) shows that the tolerance for "large income inequality", as a counterpart of "future well-being" and "economic progress" increases until 1997, then falls. The same pattern is observed for the belief that "energetic entrepreneurs should be remunerated well in order to ensure the growth of the Polish economy", and to a lesser extent the belief that "future well-being in Poland requires remunerating well those who work hard". By contrast, the opinion that "the government should reduce differences between high and low wages" gains popularity after 1997 onwards. Finally, the number of citizens who declare that "inequalities of income are too large in Poland" increases after 1998. The same pattern is visible in the data collected by

the New Europe Barometer surveys[3]. These data show that in Poland, the proportion of individuals who declare that "incomes should be made equal so that there is no great difference in income" rather than "individual achievement should determine how much people are paid; more successful should be paid more" rises from 24% in 1992 to 32% in 1998 and 54% in 2004.

Figure 2, using another CBOS survey (CBOS, 2004), displays the proportion of the population which considers corruption as an important problem. Such feeling increased sharply and in 2004 reached 75 percent. More generally it seems that in Poland, the perception of the population concerning the fairness and efficiency of the process of income generation has deteriorated during the period under observation, with a visible turning point around 1997.

3. Data

The dataset we use was constructed from individual level surveys implemented by CBOS in Poland[4]. We exploit 84 surveys of randomly chosen representative samples of the Polish adult population, consisting of approximately 1,000-1,300 interviews, covering the period 1992-2005 (six surveys per year). Even though some variables were available for earlier years, we choose to start our study in 1992, i.e. when GDP growth resumes after two years of significant decline. A standard set of questions were regularly asked: gender, age, education, location of residence, labor market status, and socio-professional categories. In terms of income, the best documented and more complete notion available in the dataset is the net total monthly household income per capita declared by surveyed individuals. It includes all revenues from individuals' main job, including bonuses, rewards, various additional remunerations, revenues from other jobs, including sporadic contracts, disability and old-age pensions, fellowships and other revenues. People were asked to indicate their net monthly average income per capita over the last three months. We use this notion of income and

---

[3] Questionnaires and descriptive statistics are available at   http://www.abdn.ac.uk/cspp/nebo.shtml. These surveys were conducted by the Centre for the Study of Public Policy at the University of Aberdeen.

[4] The explanation of sample design can be found at http://www.cbos.pl/EN/About_us/design.shtml.

deflate it using monthly consumer price index published by the Polish Central Statistical Office (GUS). The evolution of the average income per capita is displayed in Figure 3.

The data also contain specific attitudinal questions; we use three questions (recoded in order to put the answers in ascending order of satisfaction): [5]

- Country satisfaction: *How do you evaluate the economic situation in Poland?* Respondents could tick one out of five possible answers: *very good/good/neither good nor bad /bad/ very bad*.

- Private satisfaction: *How are your life and your family's life?* Proposed answers: *Very good/ good /neither good nor bad/bad /very bad*.

- Private expectations: *Do you think that in the coming year, you and your family will live*: *much better than now/a little bit better/the same as now/a little bit worse/much worse.*

We complete the CBOS data with macroeconomic data taken from official sources (GUS): yearly GDP, yearly GDP deflator, and monthly unemployment rate.

We compute the Gini coefficient of income inequality using the successive surveys of the dataset. This measure of inequality is of "high quality" as defined by Deininger and Squire (1996): it is calculated on the basis of successive representative samples of the population and takes into account all sources of revenues[6].

Descriptive statistics of all variables are presented in Tables A1 - A3 in the Appendix. During the period 1992-2005, the economy grew at an average rate of 3.5 percent. More precisely, the average GDP growth rate reached 6 percent between 1992 and 1997; it then slightly fell to 4.8 percent between 1997 and 2005. In the meanwhile, other processes unfold such as the rise of unemployment and of inequality. Income inequality as measured by the Gini coefficient was

---

[5] The correlation between the three questions is around 0.3.

[6] Our measure of income inequality turns out to be slightly higher than the Gini coefficient for Poland calculated, for instance, by UNICEFF (see table A3 in the appendix): the difference may be due to the fact that 1/ UNICEFF gives yearly measures while our data allows estimating Gini per month, and 2/ we use monthly CPI.

0.32 at the beginning of 1992 and reached 0.38 at the end of 2005. See Table A1 in the Appendix.

Figure 3 displays yearly averages of the main variables of interest, i.e. country satisfaction, private expectations, private satisfaction, real GDP and the Gini coefficient. The data suggest that although real GDP has been continuously increasing since 1992, satisfaction with the country's economic situation improved only up to 1997, and then declined substantially until 2002, with a slight improvement after this date. The curves of private satisfaction and expectations have a similar shape, but with a smaller amplitude. Private satisfaction and private expectations have a tendency to adapt to shocks and return to a baseline level of happiness (Clark et al., forthcoming). By contrast, country satisfaction is a more political variable; it expresses citizens' judgments about the economic policy of the government. As such, it is more volatile and less subject to adaptation effects.

4. Empirical strategy

Looking for a possible structural break in the relationship between individuals' subjective satisfaction and inequality we neither make a priori assumption about the existence of the break, nor impose the date of a possible discontinuity. Instead, we take the breakpoint as endogenous. As Wald tests constructed with breaks treated as a parameter do not possess their standard large sample asymptotic distributions, we use *sup-Wald* test based on the maximum of a sequence of Wald statistics and use critical values coming from Andrews (1993) [7].

The basic regression we want to estimate is:

$$S_{it} = a_T \, Gini_t + a_1 \, \mathbf{X}_{it} + a_2 \, \gamma_T + a_3 \, trend + a_4 \, \mathbf{v}_j + e_{it} \qquad (1)$$

where S_{it} denotes the satisfaction of individual i in date t (alternatively: satisfaction with the economic situation of the country, private satisfaction and private expectations); $Gini_t$ is a measure of inequality calculated for each representative cross-section; $\mathbf{X}_{it}$ is a vector of socio-

---

[7] The critical values from Andrews (1993) are widely used in formal tests of parameter stability. Also see Bai and Perron (1998).

economic characteristics of individual i in date t consisting of age, age squared, gender, education, occupation, labor market status and other professional categories, household income per capita and location of residence; γ_T denotes yearly dummies capturing the general macroeconomic and other circumstances that affect all individuals in a given year; $\mathbf{v}_j$ denotes region dummies controlling for unequal territorial developments, and e_{it} is the error term. As satisfaction variables are ordinal, we estimate equation (1) using an ordered logit model. We pool the individual observations of various surveys, and cluster by cross-section so as to adjust standard errors for intra-survey correlations[8].

We test the hypothesis that the parameter on the Gini (a_t) remains the same over the entire period. Consequently, we use a partial structural change model constraining the coefficients of the other explanatory variables to be the same for all the periods. In other words, some parameters are taken as constant under H0 and H1. If the null hypothesis is rejected, we want to find the location of the break point. Specifically,

H0: $a_T = a^*$ for all T

H1: $a_T = a_1$ for T = 1992 , …, T^B

$\quad a_T = a_2$ for T = T^B+1,…, 2005

We move T^B from 1993 to 2004 trimming the sample for about 15% (i.e. leaving at least 15% of the sample before the break, and, symmetrically, after the break) and compute the Wald statistic for each value of T^B in order to test whether the regression coefficient on the Gini estimated over the sub-period [1992, T^B] is equal to the coefficient estimated over the sub-period [T^B+1, 2005]. We calculate the Wald statistic over all possible breakpoints and compare the maximal value with the relevant critical value (taken from Andrews 1993). If the *sup Wald* statistic is lower than the critical value, the test does not reject the null hypothesis of zero breaks. If the maximal Wald statistic exceeds the critical value, the test rejects the null hypothesis of equal coefficients. We then divide the sample into two parts at the estimated breakpoint and perform a parameter constancy test for each sub sample. If the hypothesis of

---

[8] Clustering is important to make sure that we do not exaggerate the statistical significance of those RHS variables which have a higher level of aggregation than the LHS variable.

no break in the sub-samples cannot be rejected, we regress equation (1) separately on each sub-sample.

5. Results

We first check whether regressing satisfaction variables on the usual individual level characteristics provides results consistent with the literature (see for example Di Tella, MacCulloch and Oswald 2003, Blanchflower 2008). As expected (Table A4 in the Annex), we find a U shaped relationship between age and satisfaction, a positive impact of income, education, and higher occupations. Men are happier than women, a frequent observation in Central and Eastern Europe and in Latin America, as opposed to Western Europe and the United States (Graham and Pettinato 2002; di Tella et al., 2003, Guriev and Zhuravskaya, 2007, Blanchflower, 2008, Easterlin, 2008, Georgellis et al., forthcoming). People who live in rural areas are more satisfied and optimistic about their future standard of living than inhabitants of urban agglomerations, who, in turn, are more satisfied than those who live in large cities. By contrast, individuals who live in the countryside view the situation of the country in a more pessimistic way.

In order to identify a discontinuity in the relation between income inequality and subjective attitudes, we test the existence and the location of a possible breakpoint, as explained in section 4. For country satisfaction, the highest value of the Wald test is 16.93 and it corresponds to $T^B = 1996$ (the critical value is 8.85 at 5% level). Concerning the relationship between private expectations and inequality, the *sup-Wald* test is 9.86 and it is also obtained for $T^B = 1996$.

Concerning the relation between private satisfaction and inequality, the tests do not allow identifying a breakpoint endogenously[9]. However, if we impose 1996 as a point of break, a simple Wald test of equality of the parameters on the Gini index leads to the rejection of the null hypothesis of the equality of parameters in the two periods [1992, 1996] and [1997, 2005]. This test based on an exogenously given date is less powerful than the previous Wald

---

[9] We believe that the reason why the relationship between private satisfaction and inequality is different from that between country satisfaction and inequality is because private satisfaction mainly depends on personal circumstances and specific dynamics such as adaptation or homeostatic mechanisms of return to a baseline level, which partly isolate it from external circumstances such as income distribution.

test. We thus treat the results pertaining to private satisfaction with some caution. Finally, we perform a parameter constancy test for each sub sample obtained[10] and do not find additional breaks.

Table 2 displays the estimation of equation (1) for the three different satisfaction variables on the two sub-periods: 1992-1996 and 1997-2005. The impact of the Gini coefficient on the evaluation of the country's situation is significantly positive before 1997 (column 1) and becomes significantly negative afterwards (column 2). Columns 3 and 4 show individuals' expectations concerning their living conditions. Our measure of inequality exerts a significantly positive impact on expectations up to 1997, and then stops exerting any influence. This suggests that inequality is initially associated with an opening of new opportunities, but loses this signification in the eyes of the population in the later stage of transition. Finally, private satisfaction is initially weakly influenced by inequality. In the second period however, the coefficient on the Gini becomes significantly negative (columns 5 and 6). Obviously, the interpretation of income inequality has changed during the period under observation, with a visible inflexion in 1997.

As we already stressed, the subjective assessment of the country's situation is a political variable as much as a satisfaction variable. A natural question is thus whether the negative impact of the Gini coefficient on the country's satisfaction is reflected in political attitudes. In Section 2, we reported evidence about the changing attitudes towards income differentiation and the perception of corruption. In order to go further, we explore another question included in the CBOS survey: "*Can you describe your political opinions? Please, use the scale 1 to 7, 1 meaning left and 7 meaning right*". We assume that the percentage of the respondents who position themselves at the extreme left of the political scale approximately captures the radical rejection of liberal reforms. As illustrated by Figure 4, this percentage follows the increase of the Gini coefficient. It then drops after 2001, when the right-wing party Law and Justice wins the election with strongly pro-redistributive and anti-corruption program (see section 3). These results suggest that the weakening tolerance for inequality does affect political attitudes of the citizens.

---

[10] See Bai and Perron (1998).

Robustness checks

In order to make sure that the decline in country satisfaction and other subjective appreciations is actually due to the changing tolerance for inequality, we firstly assess the influence of other macro-economic variables, such as GDP growth, unemployment or inflation. Table 3 shows that including the annual rate of real GDP growth (panel A), the monthly rate of unemployment (panel B) or the monthly rate of inflation (panel C) does not alter the result concerning the changing influence of inequality on subjective attitudes.

Secondly, we check whether considering the impact of inequality on pure time effects (controlling for all individual level characteristics) does not alter the results. We proceed in two steps. First, we estimate satisfaction variables on individual personal characteristics of equation (1) including date fixed effects. We then take the vector of estimated date fixed effects and regress it on the corresponding Gini coefficient.

The impact of income inequality remains significantly positive before 1997 and negative thereafter. Controlling for the monthly rate of unemployment or the monthly rate of inflation does not alter the influence of income inequality (Table 4). Columns (1) and (2) in Table 4 show that the impact of unemployment on country satisfaction is similar to that of income inequality. It is positive in the first period, and negative in the second period. This is not very surprising, as unemployment is another facet of inequality. The initial rise in unemployment may have been interpreted as the sign of a necessary process of industrial restructuring favorable for future growth, whereas the subsequent deepening of labor lay-offs gave way to a more pessimistic perception. Concerning the monthly rate of inflation, Table 3 shows that its impact is basically insignificant.

We also check for a possible effect of seasonality by including monthly dummies. Their inclusion does affect the results (Table A5 in the Appendix).

The question could also be asked whether the changing tolerance for inequality is not due to the reduced importance of the welfare state. The tolerance for inequality certainly depends on the importance of the redistribution program and the social protection system. Keane and Prasad (2002), following Garner and Terrel (1998), argued that at the beginning of transition, important social transfers have compensated the increasing wage differentiation. They suggested that, the mechanisms of social transfers were critical in obtaining political support

for reforms. Their period of observation stops in 1997, but official statistics show that the share of social expenditure in GDP has decreased from about 26% to about 23% between 1991 and 1997, and then stabilized around this level. Hence, the changing tolerance for inequality does not seem to be associated with the withering away of the welfare state.

Finally, we check whether the results are robust to the use of alternative measures of inequality. It could be argued that people have more locally determined view of income distribution and that the Gini coefficient calculated at the country level does not measure the level of inequality that is actually perceived by the population. Hence, we calculate income inequality for different locations of residence: large cities (greater than 100 000 inhabitants), smaller cities and rural areas. As shown in Table 5, the results are not altered when we use this measure of inequality: the sign of the Gini coefficient changes after 1996 in the regression of country satisfaction; inequality stops serving as a support for expectations starting in 1997, and private satisfaction becomes negatively affected by inequality after 1996.

We have also checked that the same pattern is preserved when the measure of inequality is computed as the standard deviation of log household income for each cross section: in the estimation of country satisfaction, the coefficient on this measure is 0.001*** before 1997 and -0.001** after 1996; in the estimation of private expectations, the coefficient is 0.002*** before 1997 and 0.000 after. Finally, in the estimation of private satisfaction, the coefficient is 0.000 before 1997 and -0.001*** afterwards.

Alternatively, instead of looking at the impact of income inequality in general, as measured by the Gini coefficient, we use a notion of reference income, constructed as the average income by type of locality for each cross-section (see for example Blanchflower and Oswald, 2004). This category of average income can play the role of a comparison benchmark or of a basis of expectations[11]. Including this notion of reference income together with own household income per capita in the estimation of equation (1), we check whether the impact of this "reference income" on country satisfaction follows the same pattern as the Gini coefficient.

---

[11] See Senik (2005) for a detailed presentation of the argument

Table 6 displays the coefficients on reference income and household income per capita. It shows that while the coefficient on household income is always positive, the coefficient on reference income is significantly negative after 1996 in the regression of the country's satisfaction, while it is significantly positive in the initial period (columns 1 and 2). Reference income ceases to be interpreted as a support for expectations (columns 3 and 4) and it exerts a negative impact on private satisfaction after 1996 (column 6).

These results confirm that the parallel process of income growth and differentiation was initially well accepted by Polish citizens who might have seen it as a promise of future shared gains. However, in the late mid-1990's, these feelings based on high expectations seem to have given way to more negative attitudes fed by the rising intolerance for income inequality. Iin spite of the continued increase in the average income, satisfaction with the economic situation of the country, expectations and private satisfaction have started to decline.

6. Conclusion

This paper provides evidence of the influence of income inequality on individuals' view about the economic situation of the country, which can partly be interpreted as a measure of people's support for reforms. Income inequality is initially perceived as a positive signal about increased opportunities, but after a couple of years of rapid economic transformation, accumulated unfulfilled expectations and the diminishing patience of citizens bring about a change in attitudes: growing inequality starts undermining satisfaction. People have become disappointed with the process of transformation and skeptical about the legitimacy of the enrichment of the winners of reforms. Various public opinion surveys confirm the changing popular opinions about the degree of corruption in the country and the desirability of high pay-offs for certain professions. Hence, the turning point in the tolerance for income inequality seems to come with the increasingly wide perception that the process that generates income distribution is unfair.

The findings of this paper constitute a link between the literature on subjective satisfaction and the political economy literature that focuses on inequality and growth. It provides, from the "internal" subjective point of view of citizens, some evidence of the mechanism, hypothesized for instance by Acemoglu and Robinson (2000, 2002) or Alesina and Rodrik (1994), that growth that is accompanied by inequality generates dissatisfaction.

Dissatisfaction, in turn, can create a political opposition to the deepening of reforms.

The results obtained in this paper offer important lessons for developing and transition countries: if it is important for governments to rapidly exploit the initial "window of opportunity" for reforms, it is also crucial that they adopt careful redistributive policies early in the process, in order to ensure durable popular support to reforms. But the findings of this paper also provide lessons for developed countries. They remind how important it is to make sure that the functioning of the market and the process of income differentiation are perceived as fair and transparent.

References

Acemoglu, Daron and James A. Robinson. 2000. "Why did the West extend the franchise? Democracy, inequality, and growth in historical perspective", *The Quarterly Journal of Economics*, 115(4): 1167-119.

Acemoglu, Daron and James A. Robinson. 2002. "The political economy of the Kuznets curve", *Review of Development Economics*, 6(2): 183-203.

Acemoglu, Daron, Simon Johnson, James A. Robinson and Pierre Yared. 2007. "Reevaluating the modernization hypothesis", NBER Working Papers 13334.

Alesina, Alberto and Nicola Fuchs-Schuendeln. 2007. "Good Bye Lenin (or not?) – The effect of communism on people's preferences," *American Economic Review*, 97: 1507-1528.

Alesina, Alberto and George-Marios Angeletos, 2005. "Fairness and redistribution: US versus Europe", *American Economic Review*, 95: 913-35.

Alesina, Alberto and Eliana la Ferrara. 2005. "Preferences for redistribution in the land of opportunities", *Journal of Public Economics*, 89: 897-931.

Alesina, Alberto, Edward Glaeser and Bruce Sacerdote. 2001, « Why doesn't the US have a European-style welfare system ? », *Brookings Papers on Economic Activity*, Fall: 187-278.

Alesina, Alberto, Rafael Di Tella and Robert MacCulloch. 2004. "Inequality and happiness: Are Europeans and Americans different?", *Journal of Public Economics*, 88: 2009–2042.

Alesina, Alberto and Roberto Perotti. 1996. Income distribution, political instability, and investment," *European Economic Revie,* 40(6): 1203-1228.

Alesina, Alberto and Rodrik, Dani. 1994. Distributive politics and economic growth, *The Quarterly Journal of Economics*, 109(2): 465-90.

Andrews, Donald W.K. 1993. "Test for parameter instability and structural change with unknown change point", *Econometrica*, 61 (4), 821-856.

Bai, Jushan and Pierre Perron. 1998. Estimating and testing linear models with multiple structural changes, *Econometrica,* 66 (1): 47-78.

Blanchflower, D and Oswald A., 2004 "Well-Being over time in Britain and the USA", *Journal of Public Economics,* 88: 1359-1386.

Brainerd, Elizabeth. 1998. "Winners and losers in Russia's economic transition", *American Economic Review*, 88, 1094-1116.

CBOS . 2003. "Attitudes towards income inequality", Warsaw.

CBOS. 2004. "The perception of corruption in Poland", Warsaw.

Clark Andrew E., Paul Frijters and Mike Shields. 2006. "Income and happiness: evidence, explanations and economic implications", PSE working paper 2006-24, forthcoming in *Journal of Economic Literature*.

Clark, Andrew.E., Ed Diener, Yannis Georgellis and Rich Lucas "Lags and leads in life satisfaction: A test of the baseline hypothesis", *Economic Journal*, forthcoming.

Deininger, Klaus and Lyn Squire. 1996. "A new data set measuring income inequality", *World Bank Economic Review*, 10 (3): 565-591.

Denisova, Irina, Eller Markus and Ekaterina Zhuravskaya. 2008. "What Russians think about Transition: Evidence from RLMS survey", CEFIR and NES working paper n°113.

Desai, Raj M. and Anders Olofsgärd. 2006. "Political Constraints and Public Support for Market Reform". *IMF Staff Papers*, 53.

Di Tella, Rafael, Robert MacCulloch and Andrew Oswald. 2003. "The macroeconomics of happiness", *Review of Economics and Statistics*, 85(4)**:** 809–827.

Di Tella, Rafael, Robert MacCulloch and Andrew Oswald. 2001. "Preferences over Inflation and Unemployment: Evidence from Surveys of Happiness", *American Economic Review* 91(1).

Easterlin, Richard. 2001. "Income and happiness: a unified theory", *Economic Journal*, 111: 1-20.

Easterlin, Richard. 2008. "Lost in transition; Life satisfaction on the road to capitalism", IZA DP n°3409.

Easterlin, Richard and Andrew Zimmermann. 2006. « Life satisfaction and economic conditions in East and West Germany pre- and post- unification », IZA DP n°2494, forthcoming in *Journal of Economic Behavior and Organization*.

Ferrer-i-Carbonell, Ada. 2005. "Income and well-being: An empirical analysis of the comparison income effect", *Journal of Public Economics,* 89: 997-1019.

Fong, Christina. 2001. « Social preferences, self-interest, and the demand for redistribution », *Journal of Public Economics,* 82: 225-246

Freedom House "Nations in Transit", 2005, htttp://www.freedomhouse.org/

Frijters, Paul, John Haisken-de-New and Mike Shields. 2004. "Money does matter ! Evidence from increasing real income and life satisfaction in East Germany following reunification", *American Economic Review*, 94(3).

Garner, Thesia and Katherine Terrell, 1998. "A Gini Decomposition of inequality in the Czech and Slovak Republics during the transition", *Economics of Transition*, 6(1): 23-46.

Garton Ash, Timothy. 1989. "Revolution: The springtime of two nations", *The New York Review of Books,* 36 (10).

Graham, Carol and Stefano Pettinato. 2002. "Frustrated achievers: winners, losers, and subjective well being in new market economies", *Journal of Development Studies* 38: 100–140.

Hirschman, Alfred and Michael Rothschild. 1973. "The Changing Tolerance for Income Inequality in the Course of Economic Development", *Quarterly Journal of Economics,* 87: 544-566.

Kalbarczyk, Malgorzata. 2006. "Income and satisfaction: Panel data analysis for Poland and England", Warsaw University, Faculty of Economic Science.

Keane, Michael and Eswar Prasad. 2006. "Inequality, Transfers and Growth: New Evidence from the Economic Transition in Poland", *The Review of Economics and Statistics*, 84(2): 324-341.

Kornai, Janos. 2006. "The great transformation of Central Eastern Europe", *Economics of Transition*, 14(2): 207-244.

Krastev, Ivan. 2007. "The strange death of the liberal consensus", *Journal of Democracy,* 18 (4).

Milanovic, Branco. 1998. Income, inequality, and poverty during the transition from planned to market economy. The first comprehensive review of social effects of transition in 18 countries. World Bank Regional and Sectoral Studies.

Milanovic, Branco. 1999. "Explaining the increase in inequality during the transition". *Economics of Transition*, 7(2), 299-341.

Persson, Torsten and Tabellini, Guido. 1994. "Is inequality harmful for growth?", *American Economic Review* 8:, 600–621.

Sachs, Jeffrey. 1993. *Poland's Jump to the Market Economy* (Lionel Robbins Lectures), The MIT Press ISBN 0-262-69174-4

Sanfey, Peter and Utku Teksoz 2007. "Does transition make you happy?", *Economics of Transition*, 15(4): 707-731.

Senik, Claudia. 2004. "When Information Dominates Comparison. Learning from Russian Subjective Panel Data", *Journal of Public Economics,* 88 (9-10): 2099-2133.

Senik, Claudia. 2005. "Ambition and jealousy. Income interactions in the "Old" Europe versus the "New" Europe and the United States", IZA Discussion Paper No 2083, *Economica*, forthcoming.

Figure 1. Opinions concerning income inequality: Poland 1994-2003
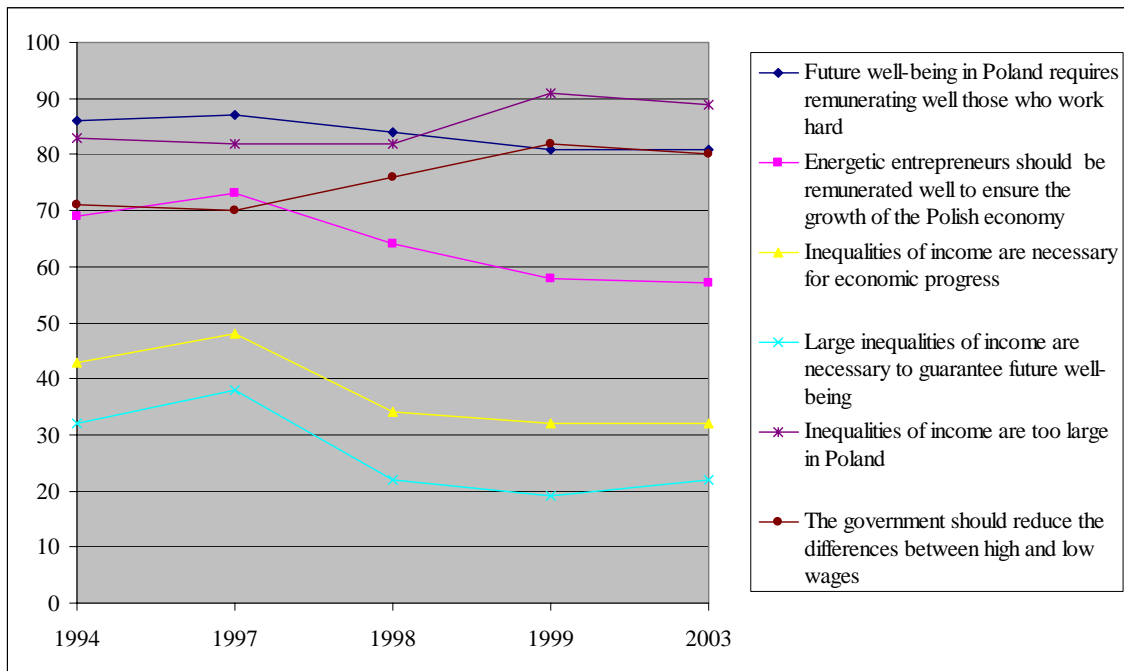
Percentage of people who agree with the statements indicated in the legend. Source: CBOS (2003).

Figure 2. Is corruption an important problem? Poland 1991-2004 (%)
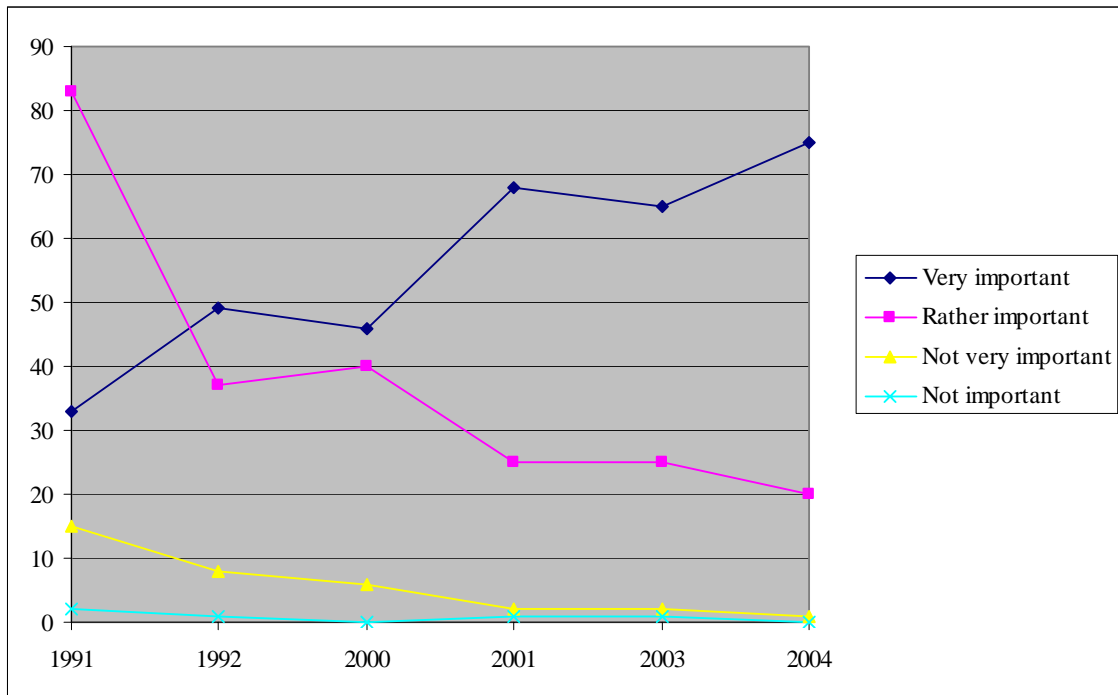
Question asked: "In your opinion, how important is the corruption problem in Poland: very important/rather important/not very important/not important". Source: CBOS (2004).

Figure 3. Satisfaction variables, GDP and inequality, 1992-2005 (yearly averages)
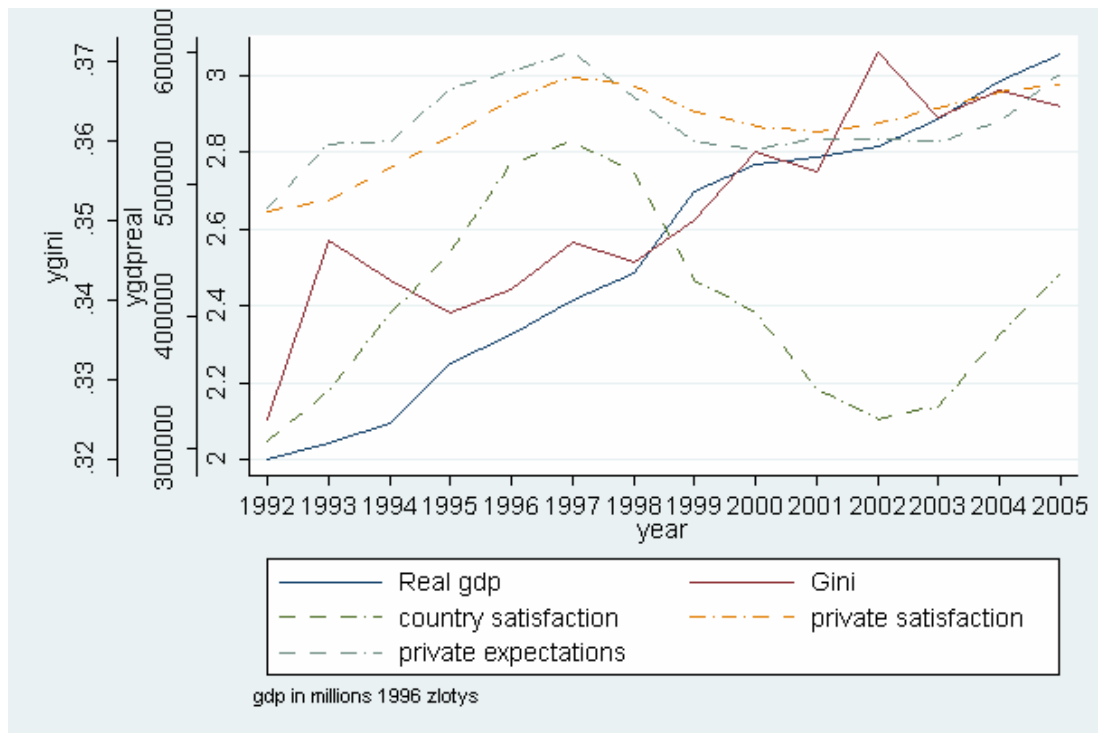
Figure 4. Income inequality and self-identification at the extreme left
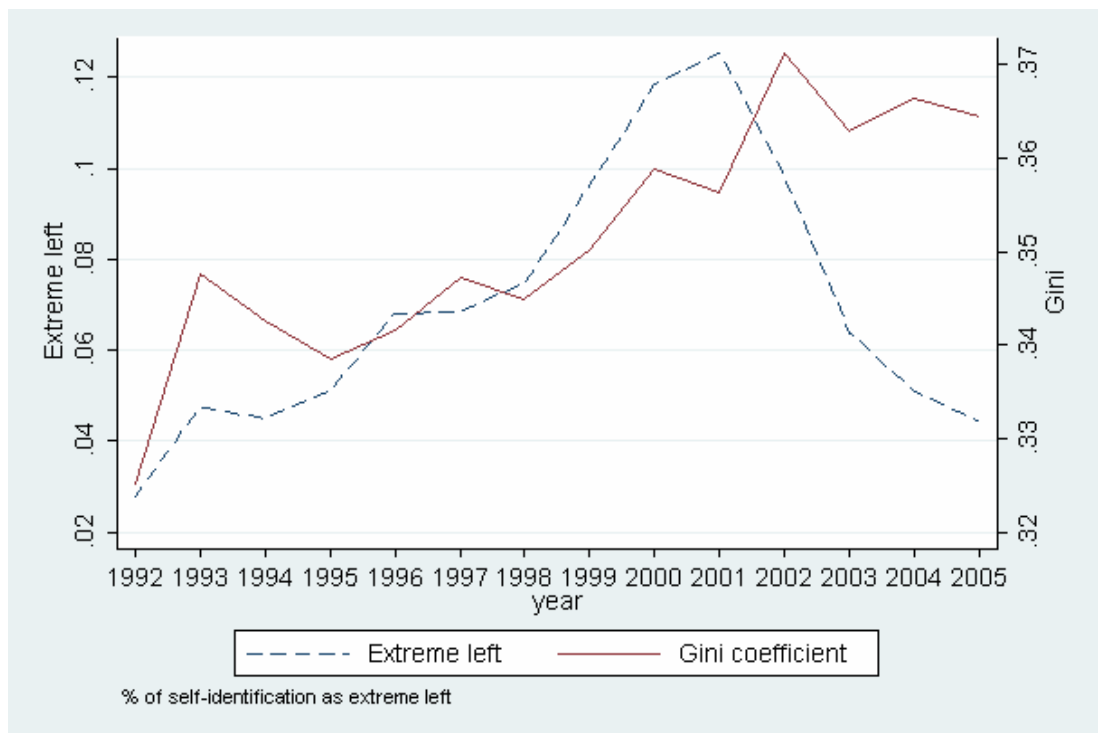
Table 1: Scores obtained by main political parties in parliamentary elections in Poland 1991-2005

	1991	1993	1997	2001	2005
Left-wing parties	11.99	27.69	31.87	41.04	15.31
Liberal parties	19.81	14.58	13.37	15.78	26.59
AWS	-	-	33.83	5.60	-
Agrarian parties	14.14	17.77	7.31	8.98	6.96
Samoobrona	-	2.78	0.08	10.20	11.41
PC/PiS	8.71	4.42	-	9.50	26.99
Other right**	21.98	11.18	5.56	7.87	7.97

Source: Our compilation based on data from the State Electoral Commission (http://www.pkw.gov.pl/). Left-wing parties include SLD, Unia Pracy and SdPl. Agrarian parties include PSL and PSL-Porozumienie Ludowe. Liberal parties include UD/UW/PD, KLD and PO. AWS was a large coalition of right-wing parties around Solidarity trade union. Other right includes mostly right wing catholic parties, and some radically anticommunist and populist parties. See the description of Polish political parties in the Appendix for more details.

Table 2. A breakpoint in the relation between inequality and satisfaction. Ordered logit

	Country satisfaction		Private expectations		Private satisfaction	
	1992-1996	1997-2005	1992-1996	1997-2005	1992-1996	1997-2005
	(1)	(2)	(3)	(4)	(5)	(6)
Gini	6.402***	-6.199***	8.981***	0.258	0.627	-2.844**
	[2.100]	[2.170]	[2.156]	[1.352]	[0.898]	[1.397]
Nb of observations	30520	43061	27115	40435	32357	45335
chi2	3240601	9383	31416	41941	18861	26526
Pseudo R2	0.06	0.06	0.02	0.04	0.10	0.12
log likelihood	-34891.44	-50214.02	-32677.07	-44364.70	-34828.81	-47973.66

Controls include gender, age, age squared, education, location of residence, employment status, occupation, regional dummies, time trend, and yearly dummies. All standard errors (in brackets) are clustered at each cross-section. Asterisks *, ** and *** denotes significance at 10, 5 and 1 % level.

Table 3.   Satisfaction and inequality, controlling for other macroeconomic variables.

Ordered logit

	Country satisfaction		Private expectations		Private satisfaction	
	1992-1996	1997-2005	1992-1996	1997-2005	1992-1996	1997-2005
Panel A						
Gini	5.398**	-9.459***	8.814***	-1.835	1.026	-3.421**
	[2.298]	[2.655]	[3.089]	[2.489]	[1.106]	[1.346]
GDP growth	-0.009	0.189***	0.035	0.072***	0.046**	0.064***
	[0.041]	[0.020]	[0.059]	[0.017]	[0.020]	[0.009]
Nb of observations	30520	43061	27115	40435	32357	45335
chi2	8831	2795	4445	3152	9414	21211
Pseudo R2	0.06	0.05	0.02	0.03	0.10	0.12
log likelihood	-34911	-50670	-32695	-44553	-34846	-48019
Panel B						
Gini	5.914***	-5.709***	8.411***	0.269	0.611	-2.814**
	[1.872]	[2.202]	[2.353]	[1.326]	[0.901]	[1.391]
Regional unemployment	-0.008***	-0.016***	-0.003	-0.004	0.002	-0.002
	[0.003]	[0.004]	[0.004]	[0.003]	[0.002]	[0.003]
Nb of observations	30520	43061	27115	40435	32357	45335
chi2	1972145	9627	9451	4815	22850	28663
Pseudo R2	0.06	0.06	0.02	0.04	0.10	0.12
log likelihood	-34912	-50204	-32699	-44364	-34829	-47973
Panel C						
Gini	5.809***	-6.648***	8.373***	-0.038	0.638	-2.863**
	[1.777]	[2.248]	[2.302]	[1.352]	[0.905]	[1.366]
Inflation	0.022	0.079**	0.015	0.033*	0.011	0.003
	[0.022]	[0.039]	[0.043]	[0.018]	[0.011]	[0.030]
Nb of observations	30520	43061	27115	40435	32357	45335
chi2	435180	8314	56413478	5017	11296	26615
Pseudo R2	0.06	0.06	0.02	0.04	0.10	0.12
log likelihood	-34915	-50207	-32698	-44363	-34828	-47974

Controls include gender, age, age squared, education, location of residence, employment status, occupation, regional dummies, and yearly dummies in intermediate and lower panels. All standard errors (in brackets) are clustered at each cross-section. Asterisks *, ** and *** denotes significance at 10, 5 and 1 % level.

Table 4. The role of inequality in explaining dates fixed effects, OLS regressions

	Country satisfaction				Private expectations				Private satisfaction			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	1992-1996	1997-2005	1992-1996	1997-2005	1992-1996	1997-2005	1992-1996	1997-2005	1992-1996	1997-2005	1992-1996	1997-2005
Gini	4.840**	-4.950*	5.884**	-6.799**	7.880*	0.545	9.583**	0.161	0.719	-2.474*	0.676	-2.595**
	[2.188]	[2.552]	[2.323]	[2.550]	[4.033]	[1.653]	[4.234]	[1.598]	[1.018]	[1.269]	[0.969]	[1.245]
Regional unemployment	0.094**	-0.095**			0.152*	-0.013			-0.003	-0.004		
	[0.043]	[0.045]			[0.080]	[0.028]			[0.020]	[0.022]		
Monthly inflation rate			0.020	0.083*			0.015	0.034			0.012	0.010
			[0.027]	[0.048]			[0.049]	[0.030]			[0.011]	[0.024]
Nb of observations	29	53	29	53	29	53	29	53	29	53	29	53
R-squared	0.946	0.914	0.936	0.911	0.621	0.779	0.560	0.785	0.925	0.752	0.929	0.753
F-stat	64.72	44.36	54.01	42.76	6.00	14.81	4.66	15.31	45.30	12.76	47.62	12.82

Yearly dummies included Asterisks *, ** and *** denotes significance at 10, 5 and 1 % level.

Table 5. Satisfaction and inequality by location of residence. Ordered logit

	Country satisfaction		Private expectations		Private satisfaction	
	1992-1996	1997-2005	1992-1996	1997-2005	1992-1996	1997-2005
Local Gini	1,914***	-2,396***	3,545***	-0,793	0,288	-1,175**
	[0,736]	[0,892]	[1.071]	[0,630]	[0,452]	[0,511]
Nb of observations	30520	43061	27115	40435	32357	45335
chi2	8321127	6299	1905	4251	28509	25201
Pseudo R2	0,05	0,06	0,02	0,04	0,1	0,12
log likelihood	-34916	-50225	-32740	-44363	-34829	-47975

Controls include gender, age, age squared, education, location of residence, employment status, occupation, regional dummies, time trend, and yearly dummies. Local Gini is calculated for different location of residence: large cities (greater than 100 000 inhabitants), smaller cities and rural areas. All standard errors (in brackets) are clustered at each cross-section. Asterisks *, ** and *** denotes significance at 10, 5 and 1 % level.

Table 6. Satisfaction and reference income. Ordered logit

	Country satisfaction		Private expectations		Private satisfaction	
	1992-1996	1997-2005	1992-1996	1997-2005	1992-1996	1997-2005
	(1)	(2)	(3)	(4)	(5)	(6)
Reference income	1.662*	-1.555**	2.756***	0.409	0.039	-1.053***
	[0.886]	[0.656]	[1.065]	[0.483]	[0.283]	[0.322]
Household income per capita	0.326***	0.336***	0.297***	0.361***	1.274***	1.293***
	[0.025]	[0.022]	[0.034]	[0.021]	[0.034]	[0.019]
Nb of observations	30520	43061	27115	40435	32357	45335
chi2	569147.51	6218.23	100122.39	4112.35	28995.86	30429.20
Pseudo R2	0.06	0.06	0.02	0.04	0.10	0.12
Log likelihood	-34908	-50226	-32694	-44364	-34829	-47972

Reference income is calculated for each cross-section as the average net income per capita by type of locality (rural, urban or cities over 100 0 00 inhabitants). Controls include gender, age, age squared, education, location of residence, employment status, occupation, regional dummies, time trend, and yearly dummies. All standard errors (in brackets) are clustered at each cross-section. Asterisks *, ** and *** denotes significance at 10, 5 and 1 % level.

Appendix

Brief description of Polish political parties (addition to Table 1).

SLD (Sojusz Lewicy Demokratycznej), a social democratic party issued from the pre-1989 communist party PZPR. Initially using anticapitalistic arguments and opposing privatization program, after 1997 put accent on economic reforms, on joining NATO and UE. In 2001 the results for SLD include Unia Pracy (UP). In 2005 the results for SLD include SdPl (Socjaldemokracja Polska) which obtained 3.89 % of votes.

Samoobrona – a populist agrarian party, proposing a radical program of isolationism, protectionism, hostile to foreign investors, etc.

UD/UW/PD (Unia Demokratyczna/Unia Wolnosci/Partia Demokratyczna) – three successive embodiments of a party of the centre: economically pro capitalistic, culturally and politically liberal

KLD (Kongres Liberalno-Demokratyczny) – a liberal party: it joined UW in 1994, and then left UW in 2001; its leaders contributed to the formation of a new, more conservative party, Platforma Obywatelska (PO).

PO (Platforma Obywatelska) was created in 2001 – a liberal-conservative party.

AWS/AWS Prawicy (Akcja Wyborcza Solidarnosc) – large coalition of right-wing parties around Solidarity trade union.

PC/PiS – a popular, nationalist, conservative party; since its formation PiS focused on fighting against post-communist left and against corruption.

Other right – includes mostly right wing catholic parties, and some radically anticommunist and populist parties. They usually reject liberalism; defend Catholic Church and family values, and want to protect national interests against globalization, foreign capital, and the European Union

Table A1: Descriptive statistics per date. Subjective variables, household income and the Gini coefficient calculated for each cross-section.

Dates (year_month)	Country satisfaction	Private Expectations	Private satisfaction	Household income	Gini coefficient
1992_01	2.002	2.679	2.753		
1992_05	1.944	2.531	2.613	5.454	0.323
1992_07	2.036	2.849	2.640	5.528	0.331
1992_09	2.060	2.742	2.635	5.569	0.312
1992_10	2.147	2.707	2.652	5.515	0.339
1992_12	2.108	2.453	2.610	5.467	0.320
1993_01	2.124	2.637	2.659	5.516	0.353
1993_03	2.126	2.641	2.677	5.528	0.355
1993_05	2.085	2.741	2.713	5.527	0.324
1993_07	2.124	2.700	2.628	5.490	0.325
1993_09	2.272	3.046	2.663	5.486	0.379
1993_11	2.347	3.169	2.720	5.532	0.347
1994_01	2.343	2.924	2.788	5.488	0.351
1994_03	2.235	2.704	2.703	5.407	0.345
1994_06	2.437	2.886	2.738	5.471	0.357
1994_07	2.462	2.861	2.769	5.514	0.347
1994_09	2.379	2.733	2.818	5.510	0.337
1994_11	2.426	2.859	2.749	5.542	0.323
1995_01	2.521	2.928	2.832	5.546	0.339
1995_03	2.430	2.952	2.809	5.519	0.336
1995_05	2.526	2.904	2.851	5.573	0.306
1995_07	2.599	2.963	2.847	5.569	0.353
1995_09	2.574	2.931	2.841	5.566	0.339
1995_11	2.606	3.117	2.868	5.683	0.358
1996_01	2.943	3.137	2.975	5.650	0.364
1996_03	2.786	3.041	2.911	5.574	0.348
1996_05	2.702	2.988	2.938	5.614	0.329
1996_07	2.699	2.953	2.923	5.668	0.336
1996_09	2.724	2.941	2.959	5.675	0.329
1996_11	2.771	3.006	2.925	5.691	0.342
1997_01	2.745	3.072	2.906	5.726	0.371
1997_03	2.687	3.028	2.987	5.728	0.344
1997_05	2.840	3.048	3.023	5.807	0.332
1997_07	2.895	3.029	3.074	5.749	0.324
1997_09	2.939	3.141	3.005	5.794	0.352
1997_11	2.866	3.052	2.985	5.801	0.328
1998_01	2.771	2.929	3.000	5.720	0.337
1998_03	2.769	2.965	2.942	5.706	0.354
1998_05	2.774	2.988	2.967	5.797	0.337
1998_07	2.721	2.957	2.991	5.822	0.339
1998_09	2.746	2.878	2.943	5.834	0.352
1998_11	2.699	2.923	2.997	5.823	0.353
1999_01	2.706	2.889	2.945	5.805	0.347
1999_03	2.457	2.830	2.879	5.735	0.363
1999_05	2.471	2.828	2.912	5.818	0.342
1999_07	2.396	2.749	2.875	5.823	0.345
1999_09	2.330	2.814	2.882	5.879	0.353
1999_11	2.431	2.840	2.941	5.856	0.350

Table A1: Descriptive statistics per date. Subjective variables, household income and the Gini coefficient calculated for each cross-section (Cont.)

Dates (year_month)	Country satisfaction	Private Expectations	Private satisfaction	Household income	Gini coefficient
2000_01	2.490	2.848	2.874	5.800	0.372
2000_02	2.427	2.781	2.889	5.755	0.365
2000_05	2.320	2.792	2.904	5.827	0.365
2000_07	2.339	2.751	2.826	5.775	0.337
2000_09	2.375	2.854	2.882	5.814	0.359
2000_11	2.348	2.834	2.830	5.779	0.354
2001_01	2.383	2.844	2.896	5.787	0.328
2001_03	2.201	2.770	2.809	5.791	0.368
2001_05	2.198	2.781	2.842	5.783	0.351
2001_07	2.098	2.841	2.864	5.840	0.377
2001_09	2.147	2.879	2.846	5.811	0.340
2001_11	2.077	2.899	2.870	5.811	0.378
2002_01	2.071	2.834	2.881	5.831	0.361
2002_03	2.056	2.791	2.849	5.779	0.375
2002_05	2.071	2.788	2.835	5.824	0.379
2002_07	2.035	2.839	2.864	5.885	0.389
2002_09	2.160	2.876	2.910	5.820	0.366
2002_11	2.247	2.885	2.906	5.852	0.357
2003_01	2.249	2.867	2.914	5.832	0.373
2003_03	2.111	2.836	2.880	5.822	0.355
2003_05	2.060	2.873	2.900	5.864	0.363
2003_07	2.134	2.804	2.882	5.806	0.356
2003_09	2.188	2.887	2.997	5.819	0.360
2003_11	2.120	2.683	2.917	5.778	0.369
2004_01	2.257	2.864	2.920	5.822	0.372
2004_03	2.121	2.772	2.934	5.802	0.381
2004_05	2.370	2.924	2.982	5.882	0.367
2004_07	2.323	2.891	2.942	5.786	0.351
2004_09	2.451	2.939	3.007	5.811	0.369
2004_11	2.445	2.902	2.961	5.773	0.355
2005_01	2.541	2.981	2.980	5.737	0.363
2005_03	2.415	2.966	2.926	5.747	0.351
2005_05	2.525	3.073	2.965	5.809	0.362
2005_07	2.371	2.903	2.989	5.782	0.369
2005_09	2.471	2.974	2.971	5.776	0.365
2005_11	2.588	3.123	3.037	5.778	0.377
2000_11	2.348	2.834	2.830	5.779	0.354
2001_01	2.383	2.844	2.896	5.787	0.328
2001_03	2.201	2.770	2.809	5.791	0.368
2001_05	2.198	2.781	2.842	5.783	0.351

Country satisfaction: *How do you assess current economic situation in Poland?* Answers from 1 "very bad" to 5 "very good". Private expectations: *Do you think that in a year your life and the life of your family will be:* Answers from 1"much worse" to 5"much better" than now. Private satisfaction: *How do you and your family live?* Answers from 1 "very bad" to 5 "very good". Household income is the logarithm of net total monthly household income per capita, deflated by the monthly CPI. Gini coefficients are calculated for each successive representative cross-section.

Table A2. Descriptive statistics. The socio-demographic structure of the sample, yearly averages.

year	Female	Age	Secondary education	Rural areas	Urban areas	Large cities
1992	0.55	46.77	0.34	0.42	0.52	0.28
1993	0.55	47.93	0.35	0.42	0.52	0.28
1994	0.48	47.89	0.37	0.40	0.53	0.28
1995	0.55	48.24	0.37	0.40	0.51	0.29
1996	0.55	47.61	0.39	0.37	0.55	0.28
1997	0.57	47.53	0.41	0.37	0.52	0.31
1998	0.56	47.74	0.41	0.37	0.53	0.30
1999	0.56	48.17	0.43	0.37	0.52	0.30
2000	0.55	48.13	0.45	0.37	0.50	0.32
2001	0.56	47.86	0.44	0.36	0.49	0.32
2002	0.55	48.46	0.46	0.35	0.46	0.35
2003	0.55	47.82	0.46	0.37	0.47	0.33
2004	0.52	46.89	0.46	0.41	0.51	0.29
2005	0.53	46.73	0.44	0.37	0.51	0.30

Large cities are defined as having more than 100 000 inhabitants.

Table A2 continued.

year	Unemployed	Pensioners	Farm	Not working	Unqualified workers	Qualified workers	Higher occupations	Self-employed	Employees
1992	0.08	0.34	0.11	0.07	0.06	0.14	0.06	0.03	0.15
1993	0.05	0.44	0.09	0.03	0.04	0.10	0.06	0.04	0.13
1994	0.04	0.45	0.09	0.02	0.04	0.10	0.06	0.04	0.13
1995	0.06	0.43	0.08	0.04	0.04	0.10	0.06	0.04	0.12
1996	0.08	0.37	0.07	0.06	0.04	0.10	0.07	0.04	0.15
1997	0.08	0.35	0.06	0.06	0.04	0.10	0.08	0.04	0.16
1998	0.07	0.37	0.06	0.05	0.04	0.09	0.07	0.04	0.16
1999	0.08	0.37	0.06	0.05	0.04	0.09	0.07	0.04	0.16
2000	0.09	0.37	0.06	0.05	0.03	0.08	0.07	0.04	0.16
2001	0.12	0.37	0.05	0.05	0.03	0.08	0.06	0.04	0.16
2002	0.13	0.37	0.05	0.04	0.03	0.07	0.07	0.04	0.16
2003	0.12	0.35	0.05	0.05	0.03	0.07	0.07	0.04	0.16
2004	0.12	0.34	0.06	0.05	0.03	0.07	0.07	0.04	0.16
2005	0.11	0.33	0.05	0.05	0.04	0.08	0.05	0.03	0.17

Table A3. Descriptive statistics. Macroeconomic variables

Year	Nominal GDP	Real GDP growth	Unemployment rate	Gini coefficient (our data)	Gini coefficient UNICEF data
1992	114243	102,6	13,1	.325	0.274
1993	155780	103,8	14,9	.348	0.317
1994	210377	105,2	16,5	.343	0.323
1995	306318	107,0	15,2	.339	0.321
1996	385448	106,2	14,4	.342	0.328
1997	469372	107,1	11,6	.342	0.334
1998	549467	105,0	10,0	.345	0.326
1999	665688	104,5	11,9	.350	0.334
2000	744378	104,3	13,9	.359	0.345
2001	779564	101,2	16,1	.356	0.341
2002	808578	101,4	17,7	.371	0.353
2003	843156	103,9	18,0	.363	0.356
2004	924538	105,3	19,6	.366	-
2005	982565	103,6	18,2	.325	-

Source: Polish Central Statistical Office (GUS). Gini coefficients calculated on yearly average household income in our data. The estimates of Gini coefficient from UNICEFF Database (IRC TransMONEE 2005) are based on interpolated distributions from grouped data from household budget surveys reported to MONEE project.

Table A4. Basic regressions of satisfaction variables. Ordered logit

	Country satisfaction	Private expectations	Private satisfaction
Gender	-0,061***	-0,119***	-0,097***
	[0,021]	[0,017]	[0,014]
Age	-0,031***	-0,076***	-0,090***
	[0,003]	[0,005]	[0,005]
Age squared	0,000***	0,001***	0,001***
	[0,000]	[0,000]	[0,000]
Log household income	0,334***	0,336***	1,277***
	[0,016]	[0,019]	[0,018]
Education	0,117***	0,051***	0,293***
	[0,024]	[0,019]	[0,017]
Rural	-0,152***	0,076***	0,236***
	[0,022]	[0,022]	[0,021]
Large city	-0,022	-0,041*	-0,196***
	[0,025]	[0,025]	[0,022]
Unemployed	-0,032	0,01	-0,537***
	[0,028]	[0,037]	[0,042]
Pensioners	-0,110***	-0,222***	-0,611***
	[0,023]	[0,031]	[0,030]
Farm	-0,173***	-0,05	-0,05
	[0,034]	[0,041]	[0,048]
Unqualified worker	-0,085**	-0,150***	-0,319***
	[0,034]	[0,043]	[0,040]
Qualified worker	-0,02	-0,058**	-0,111***
	[0,031]	[0,029]	[0,030]
Not working	0,133***	0,109**	-0,160***
	[0,039]	[0,046]	[0,039]
Higher professions	0,189***	0,139***	0,309***
	[0,038]	[0,037]	[0,035]
Entrepreneur	0,041	0,380***	0,453***
	[0,047]	[0,051]	[0,049]
Students	0,211***	-0,164***	0,161***
	[0,041]	[0,054]	[0,059]
West	-0,076**	0,056*	-0,169***
	[0,031]	[0,029]	[0,030]
Centre-West	-0,017	-0,096**	0,024
	[0,030]	[0,038]	[0,026]
Centre	-0,132***	-0,082***	-0,210***
	[0,029]	[0,027]	[0,024]
East	-0,204***	-0,136***	0,050*
	[0,039]	[0,038]	[0,029]
South-east	-0,083***	-0,171***	0,061*
	[0,030]	[0,030]	[0,032]
South-west	0,149***	-0,023	0,126***
	[0,031]	[0,033]	[0,027]
Time trend	0,003	0,009	-0,004
	[0,007]	[0,008]	[0,003]

Table A4. Basic regressions of satisfaction variables. Ordered logit (Cont.)

	Country satisfaction	Private expectations	Private satisfaction
cut1:Constant	0,843	0,696	0,507
	[2,914]	[3,324]	[1,199]
cut2:Constant	3,314	2,536	2,472**
	[2,918]	[3,319]	[1,197]
cut3:Constant	5,325*	5,121	5,339***
	[2,922]	[3,311]	[1,198]
cut4:Constant	9,866***	8,287**	9,070***
	[2,914]	[3,311]	[1,202]
Nb of observations	73581	67550	77692
chi2	4753	2651	17249
Pseudo R2	0,05	0,03	0,11
log likelihood	-85274	-77445	-83015

Country satisfaction: How do you assess current economic situation in Poland? Answers from 1 "very bad" to 5 "very good". Private expectations: Do you think that in a year your life and the life of your family will be: Answers from 1"much worse" to 5 "much better" than now. Private satisfaction: How do you and your family live? Answers from 1 "very bad" to 5 "very good".

Yearly dummies included. Omitted variables: men, education less than secondary, medium cities (less than 100 000), employees, and north region. Asterisks *, ** and *** denotes significance at 10, 5 and 1 % level. Error terms are clustered for each cross-section. Error terms are clustered for each cross-section.

Table A5. Country satisfaction: controlling for seasonality.

Ordered logit

	Country satisfaction	
	1992-1996	1997-2005
Gini index	4,893***	-6,445***
	[1,882]	[1,902]
_Imonth_2		0,07
		[0,107]
_Imonth_3	-0,230**	-0,269***
	[0,107]	[0,103]
_Imonth_5	-0,207**	-0,185**
	[0,104]	[0,085]
_Imonth_6	-0,088	
	[0,105]	
_Imonth_7	-0,177*	-0,241***
	[0,104]	[0,087]
_Imonth_9	-0,237***	-0,117
	[0,091]	[0,109]
_Imonth_10	-0,082	
	[0,107]	
_Imonth_11	-0,209	-0,095
	[0,130]	[0,091]
_Imonth_12	-0,16	
	[0,099]	
Nb of observations	30520	43061
chi2	7479	8344
Pseudo R2	0,06	0,06
log likelihood	-34874	-50162

Controls include gender, age, age squared, education, location of residence, employment status, occupation, regional dummies, time trend, and yearly dummies. All standard errors are clustered at each cross-section. Asterisks *, ** and *** denotes significance at 10, 5 and 1 % level.

CURRENT AS OF 5/2/08

Publication	Authors	Date
No. 919: The Emerging Aversion to Inequality: Evidence from Poland 1992-2005	Irena Grosfeld and Claudia Senik	April 2008
No. 918: Exploring The Relationship Between Military Spending & Income Inequality In South Asia	Krishna Chaitanya Vadlamannati	Feb 2008
No. 917: Productive, Unproductive and Destructive Entrepreneurship: A Theoretical and Empirical Exploration	Arnis Sauka	Mar 2008
No. 916: MARKET RISK DYNAMICS AND COMPETITIVENESS AFTER THE EURO: Evidence from EMU Members	Juan Piñeiro Chousa, Artur Tamazian & Davit N. Melikyan	Feb 2008
No. 915: An Impact Analysis of Microfinance in Bosnia and Herzegovina	Valentina Hartarska & Denis Nadolnyak	Dec 2007
No. 914: Why are Optimistic Entrepreneurs Successful? An Application of the Regulatory Focus Theory	Ruta Aidis, Tomasz Mickiewicz & Arnis Sauka	Feb 2008
No. 913: Measuring Underground (Unobserved, Non-Observed, Unrecorded) Economies in Transition Countries: Can We Trust GDP?	Edgar L. Feige and Ivica Urban	March 2008
No. 912: On The Trade Balance Effects Of Free Trade Agreements Between The Eu-15 And The Ceec-4 Countries	Guglielmo Maria Caporale, Christophe Rault, Robert Sova & Ana Maria Sova	March 2008
No. 911: Does Growth & Quality of Capital Markets drive Foreign Capital? The case of Cross-border Mergers & Acquisitions from leading Emerging Economies	Juan Piñeiro Chousa, Krishna Chaitanya Vadlamannati and Artur Tamazian	Feb 2008
No. 910: Determinants Of Barries To Quality Of Direct Foreign Investments – Evidences From South & East Asian Economies	Juan Piñeiro Chousa, Krishna Chaitanya Vadlamannati , Bitzenis P. Aristidis and Artur Tamazian	Feb 2008
No. 909: Further Theoretical and Empirical Evidence on Money to Growth Relation	Alexandru Minea, Christophe Rault & Patrick Villieu	Feb 2008
No. 908: Rapid Economic Growth At The Cost Of Environment Degradation? - Panel Data Evidience From Bric Economies	Juan P. Chousa, Artur Tamazian & Krishna Chaitanya V.	Feb 2008
No. 907: Impact of M&A on firm performance in India: Implications for concentration of ownership and insider entrenchment	Sumon Bhaumik & Ekta Selarka	Feb 2008
No. 906: Foreign Direct Investment and Structural Reforms: Evidence from Eastern Europe and Latin America	Nauro Campos & Yuko Kinoshita	Jan 2008
No. 905: From Workers to Owners: Survey Evidence on the Impact of Property Rights Reforms on Small Farmers in Two Regions in Romania	Georgeta Vidican-Sgouridis and Annette Kim	Jan 2008
No. 904: Are Emerging Economies Fdi Inflows Cointegrated With Fdi Inflows Of China? – An Empirical Investigation	Krishna Chaitanya, Vadlamannati & Emilia Vazquez Rozas	Dec 2007
No. 903: Some New Insights into Currency Boards: Evidence from Bulgaria	Alexandru Minea and Christophe Rault	Jan 2008
No. 902: Should we care for structural breaks when assessing fiscal sustainability?	António Afonso and Christophe Rault	Nov 2007
No. 901: A Forewarning Indicator System For Financial Crises : The Case Of Six Central And Eastern European Countries	Irène Andreou, Gilles Dufrénot, Alain Sand-Zantman, and Aleksandra Zdzienicka-Durand	May 2007
No. 900: Directional Mobility of Debt Ratings	Sumon Kumar Bhaumik and John S. Landon-Lane	Nov 2007
No. 899: The Choice of Exchange Rate Regimes in the MENA Countries: a Probit Analysis	Sfia M. Daly	Oct 2007
No. 898: Macroeconomic Sources of Foreign Exchange Risk in New EU Members	Evzen Kocenda and Tirgran Poghosyan	Oct 2007
No. 897: Rapid Economic Growth And Industrialization In India, China & Brazil: At What Cost?	Krishna Chaitanya.V	Oct 2007