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### Unravelling Voters' Perceptions of the Economy<sup>∇</sup>

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#### Abstract

Individual perceptions of the economy are a key factor influencing voting decisions, yet they often deviate from movements in the real economy. This study investigates the formation of economic perceptions during a period of economic and political instability in the Czech Republic using a series of Economic Expectations and Attitude (EEA) surveys and yearly regional economic indicators. It measures the extent to which retrospective and prospective perceptions are related to objective measures of the economy and subjective heterogeneity at an individual level. The study finds that objective economic indicators are inadequate determinants of economic perceptions and that such perceptions can be distorted by ideological beliefs, socioeconomic characteristics and personal experiences despite turbulent economic shocks, a highly politicized economic reform process and weak party identification.

**Keywords:** Economic perceptions, regional economic indicators, transition democracies, ideological beliefs.

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## Introduction

There is little dispute that economics affects voting decisions and political preferences, however discourse now lies in determining the precise nature of this relationship. Analysis of economic voting can be employed at either a macro level, using aggregate economic variables, or at a micro level, using individual survey data. Macro studies typically observe a direct relationship between real economic conditions (e.g., unemployment, inflation or economic growth) and aggregate vote distributions, and hence conclude that voters are well informed about movements in the real economy and will punish/reward the incumbent government accordingly (Kramer, 1971). Cross-sectional micro studies, on the other hand, cannot observe a direct relationship between real economic conditions and voting decisions at individual level, as macroeconomic variables are, by definition, constant across all individuals. Therefore studies that wish to examine the impact of the economy on individual voting behaviour must rely on perceptions<sup>1</sup> of the economy.

Indeed, one of the main drawbacks of the macro approach according to Nannestad and Paldam (2000) is that “*economies do not vote, people do*” and therefore it is voters’ perceptions of the economy which will ultimately influence their vote choice. Micro analyses account for the fact that voters must first observe the economy and then use these evaluations of the economy when forming their voting decisions. If they have a favourable perception of the economy, they will vote for the incumbent government. Contrary to their macro counterparts, micro studies often conclude that, at the individual level, voters know very little about the real economy and that perceptions of the economy are typically influenced by subjective factors. These studies are typically less conclusive than macro

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<sup>1</sup> Throughout this study the terms “perceptions” and “evaluations” are used interchangeably to represent individuals’ assessments of the economy.

findings and often find only a weak relationship between the economy and voting behaviour (see Kinder and Kiewiet, 1981; Conover, Feldman and Knight, 1987).

In order to understand the dichotomy between the two approaches it is necessary to determine the nature of the relationship between objective economic conditions and subjective perceptions of the economy. Despite the predominant use of perceptions in studies of voting behaviour, the formation of such economic perceptions has received little attention in the literature to date. If subjective economic perceptions are being used as proxies for real economic conditions, then it is necessary to know to what extent these perceptions are influenced by real economic conditions.

This paper extends the existing literature by investigating perception formation during the early years of a new economy which was characterised by high political and economic instability. In contrast to previous perception formation studies, which typically focus on Western economies, this study uses a series of Economic Expectations and Attitude surveys carried out in the Czech Republic during the early transition years of 1990-1998 to determine how individuals assimilate information in an unfamiliar and turbulent economic system. Analysing the evolution of economic perceptions during a period experiencing the development of party identification may provide useful insights into how voters process economic perceptions.

The paper is organised as follows: the following section discusses various issues concerning economic perception formation and presents how this paper contributes to the existing literature. Next, the Economic Expectations and Attitudes (EEA) survey dataset and the methodology employed to undertake the analysis is introduced. The results of the retrospective and prospective models of economic perception formation are then presented, and the final section concludes.

# Economic Perception Formation

## *Real versus Perceived Economic Conditions*

How voters interpret the economy can widely deviate from movements in the real economy. Several studies have shown that voters have little information about macroeconomic indicators (e.g. Aidt, 2000; Sanders, 2000). Indeed, given that the cost of acquiring information about the economy is high relative to the benefit derived from casting a vote (known as the paradox of voting hypothesis), rational agents will try to minimise the effort they exert when forming perceptions of the economy. Therefore, if voters do not actively seek information about the real economy they will rely on subjective evaluations of the economic situation and it is these perceptions which ultimately influence voting decisions.

While economic perceptions are regularly used as proxies for real economic conditions, very few studies have analysed the extent to which such perceptions are related to economic conditions. The primary reason for this is that by imputing aggregate level data on individual-level behaviour one may commit ecological fallacy<sup>2</sup> (Jones, Haller, Colnic and Johnson, 1996, also see King, 1997). In other words, macroeconomic variables are, by definition, constant for all individuals. Therefore, it is difficult to determine the extent to which individuals relate the real economy to their perceptions of the economy. One method for overcoming this limitation is to use multiple years of data. Jones *et al.* (1996) examines how closely prospective economic perceptions are related to actual future economic conditions using 13 years of data from the US Survey of Consumers and a random coefficient model. They find that economic indicators do influence the parameters

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<sup>2</sup> Ecological inference is the process of using aggregate (i.e. "ecological") data to infer individual-level relationships of interest when individual-level data are not available.

predicting economic expectations, yet they are influential in the “wrong” direction, i.e., they find that when the economy is doing badly perceptions of the future economy tend to be brighter. They conclude that this result supports the “psychological economics” hypothesis whereby individuals believe that if the economy is currently doing badly then the situation can only improve in the future. They do not include or control for partisanship or ideological effects, however.

This paper offers an alternative method of examining the impact of objective economic conditions on economic perceptions. Rather than examining the impact of national macroeconomic conditions on economic perceptions, this paper utilises yearly regional economic indicators from 76 Czech regions over an 8 year period, resulting in over 600 data points. The advantage of using regional rather than national data is that it varies across both individuals and time, while being an objective measure of economic conditions. The advantages of using the EEA surveys are twofold: firstly it enables the analysis of variations in perceptions over time, and secondly, the presence of regional identifiers allows respondents to be matched with the objective economic conditions in their region. Therefore, by combining the macro and micro level data it is possible to test the extent to which real economic conditions are related to perceptions of the economy, an approach which has not yet been used in the literature.

### ***Ideology and Economic Perceptions***

Studies which use economic perceptions to explain voting behaviour are built on the assumption that such perceptions are exogenous. However several authors (Conover, Feldman and Knight, 1986; Wlezien, Franklin and Twiggs, 1997; MacDonald and Heath, 1997; Nannestad and Paldam, 2000) have shown that perceptions of the economy may be

contaminated by ideological preferences and past vote, and hence perceptions are endogenous. Due to partisan loyalty<sup>3</sup> and ideological biases, some voters negatively or positively evaluate economic performance regardless of changes in national economic conditions. For example, in the Czech Republic between the years 1990-1998 pro-reform centre-right and right-wing parties were dominant in government. Therefore those who supported right-wing parties may have perceived the state of the economy more positively regardless of whether the economy did actually improve, and subsequently, supporters of the left may have viewed the economy more negatively.

This hypothesis is derived from the theory of cognitive consistency (see Heider, 1946, for the origins) which posits that individuals always try to align their beliefs and actions, i.e., voters try to reduce inconsistencies between their voting intentions and evaluations of the economy by bringing their attitudes in line with the vote they cast. Conover *et al.*, (1987) suggest that economic forecasts have become extensions of partisan evaluations thus obscuring the influence of the real economic situation. A study by Anderson, Mendes, Tverdova and Kim (2004), using panel data from before and after the 1997 British general election, find that voters' post-election economic perceptions are influenced by their vote choice during the election, suggesting that perceptions are not exogenously related to vote choice. The consequence of such endogeneity is that cross-section economic voting models may overestimate the effect of perceptions on voting behaviour.<sup>4</sup>

Yet Evans and Andersen (2006), who examine the impact of economic perceptions on party popularity in Britain, suggest that economic perceptions in transitional economies are probably less susceptible to political re-interpretation. They propose that in established

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<sup>3</sup> This is generally known as Campbell *et al.*'s (1960) partisan "perceptual screen".

<sup>4</sup> As there are no suitable panel surveys for the Czech Republic, this paper cannot directly test for the endogeneity of perceptions and vote choice.

democracies where economic performance is relatively stable, to the extent that there are no obvious cues from the economy, an accurate assessment of the general economy is unlikely to evolve and hence perceptions of the economy are largely influenced by ones ideological tendencies. Conversely, in post-communist countries that are experiencing vast structural changes, assessments of the economy should be clearer and unclouded by ideological preferences. However, Evans and Andersen do not test this proposition.

The Czech Republic provides an ideal testing ground to investigate this hypothesis and to examine perception formation in a period of economic turbulence. It witnessed a huge degree of regional variation during the early transition years in regards standard macroeconomic indicators, for example the unemployment rate ranged from 0.8% to 9% across the 76 regions of the Czech Republic in 1991. Tables 1 and 2 indicate the volatility of the Czech economy during 1990-1998 at both a national and regional level. Unlike stable democracies and established economies, the real economy was emitting strong cues concerning its high inflation, negative growth and rising unemployment rate. The economy was undergoing massive structural reforms which were highly politicized. It is therefore possible that voters' perceptions in newly established democracies may be more accurate than those formed in developed economies, given the precarious economic environment and the subsequent prevalence of economic concerns.

In addition, ideological preferences may not have had time to fully develop given the short history of the new political system. One would expect, therefore, low levels of party identification especially in the early stages of the transition process. The 1994 New Democracies Barometer shows that in the Czech Republic, 60% of those interviewed had no party identification. Rose (1995) constructs an Index of Volatility, which sums the changes in each party's share of the vote in two successive elections on a scale ranging from 0 to 200. For the Czech Republic, the index almost reached the maximum at 178,

with Poland only reaching 63 and Hungary 59. Given this large degree of volatility or switching votes in the Czech Republic, economic perceptions may be less influenced by ideological preferences than those in established democracies where volatility is low. This paper, therefore, tests whether economic perceptions are influenced by partisan factors throughout the transition period. If Evans and Andersen's assertions are correct, then ideology should not influence perception formation in the early years, but may play a greater role once party identification is consolidated.

### ***Aggregation and Sources of Subjective Heterogeneity***

In general, voting studies use aggregate measures of economic perceptions (e.g., Page and Shapiro 1992; Nannestad and Paldam 2000). The rationale for this according to Converse (1990) and Erikson, MacKuen and Stimson (2000) is that aggregation of individual level economic evaluations is the optimal way to eliminate the high degree of noise or random variation which plagues survey data. By aggregating individual responses to questions about the state of the economy the random variation is cancelled out, leaving only the underlying significant component of public opinion. According to Bartels (1996), however, this argument presupposes that individual errors in measures of economic evaluations are random rather than systematic. If these individual errors are actually systematic, then aggregation will produce biased aggregate measures of economic evaluations.

Duch, Palmer and Anderson (2000) extend this argument by stating that evaluations of the economy include systematic variation which reflect factors unrelated to objective economic conditions. Hence systematic noise or subjective variation at the individual level causes measures of economic evaluations derived by aggregating survey



responses to deviate widely from real economic conditions. They test this hypothesis and find that economic perceptions are influenced by socio-economic characteristics, the level of information which the respondent possesses, partisanship and perceptions of personal economic experiences.

Similar to Duch *et al.* (2000) this analysis uses individual level perception measures to examine whether the four sources of subjective heterogeneity (level of information, partisanship, socio-economic characteristics and perceptions of personal experiences) bias voters' perceptions of the economy.<sup>5</sup> This paper deviates from Duch *et al.* in that it also includes the objective regional economic measures discussed above. As such, this analysis is an alternative means of viewing the traditional sociotropic/egotropic dichotomy in the economic voting literature. Proponents of the sociotropic tradition (e.g. Kinder and Kiewiet, 1979; Lewis-Beck, 1988) contend that voting behaviour is influenced by national economic conditions, while their egotropic counterparts (e.g Markus, 1998) believe individuals are more self-motivated than altruistic, and hence are influenced by personal economic affairs. By including both objective measures, i.e., real economic conditions, and subjective measures, i.e., personal economic conditions, this on-going debate in the literature can be investigated.

In addition, Conover *et al.* (1987) find that individual predictions about future economic conditions (prospective perceptions) are often inaccurate and that retrospective evaluations of the economy may be more accurate as they are less affected by partisan factors. This paper therefore tests whether retrospective and prospective perceptions of the economy are shaped by different factors. The next section discusses the data and methodology used to perform the analysis.

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<sup>5</sup> Unfortunately, the EEA surveys do not include questions concerning the respondent's media use. However a question gauging the respondent's level of political sophistication was included, but was eventually excluded from the empirical analysis due to the high correlation with the other attitudinal variables.

## Data and Methodology

### *Economic Expectations and Attitudes (EEA) Surveys*

The analysis is based on a sequence of surveys entitled Economic Expectations and Attitudes (EEA), which were conducted semi-annually (1990-1992) and annually (1993-1998) by the socio-economic team of the Institute of Sociology, Academy of Sciences Czech Republic. Nine of the eleven surveys are used in the analysis as the first two surveys conducted in 1990 vary substantially from subsequent surveys. The surveys were discontinued in 1998. They focus on attitudes concerning economic transformation (speed of economic reforms, poverty, social justice, role of the state in the economy, privatisation, etc.) and also cover political issues, such as voting preferences, political identification, trust in institutions, satisfaction with the political regime, and the openness of the economy in general. A large number of the questions are repeated every year, which enables the analysis of changes in attitudes over time. Finally, the surveys also contain a battery of questions detailing the socio-economic background of respondents, in addition to their district of residence. The surveys contain between 1113 and 2084 observations in each.

The first six surveys were conducted in both parts of the former Czechoslovakia, however from November 1993 onwards were only administered in the Czech Republic. Therefore, the focus of the analysis is on political developments in the Czech Republic. The sampling methodology involved two steps: first, stratification by settlement size and region, and second, quota sampling by age, gender and education. Hence the procedure ensures the sample is representative of the Czech population. The EEA surveys have remained a largely untapped source of data, especially with respect to political preferences, voting behaviour and perception formation. Earle and Gelbach (2003) use the

1996 survey to study how privatisation policies in the Czech Republic affected constituencies for economic reforms, markets and democratic institutions. Doyle and Fidrmuc (2003) analysed voting intention and behaviour and Matějů and Řeháková (1997) utilize several of the earlier EEA surveys to study realignments between voters' position alongside the left-right political spectrum.

### ***Pooled Surveys***

Pooled regressions are estimated in order to investigate the determinants of perceptions across 3 distinct periods in the Czech economic reform process. Using the classification system developed by Hraba, Mullick, Lorenz and Vercernik (2001) the following periods were identified. The *Pre-Crystallisation* period between 1990 and 1992 was a period of mass euphoria which saw the introduction and support of major economic reforms, however differences in experiences and opinions about these reforms did not evolve until the *Crystallisation* period between 1993 and 1996. Finally, the *Post-Crystallisation* period (1997 and after) saw an economic downturn that resulted in even further deviations in attitudes about reforms as the outcomes of the reform process were realised.

In this analysis, nine EEA surveys were pooled to create three new groups (T1: 1991-92; T2: 1993-94; T3:1996-1998), which best correspond to the changing periods of reform in the Czech Republic and only deviate from Hraba *et al.*'s classification in regards 1996, which is included in the Post-Crystallisation period to ensure equal sample weighting rather than the Crystallisation period. An analysis of the individual survey models produce very similar results to the pooled models and are available upon request.

## **Methodology**

The empirical investigation estimates ordered logit models to consider whether retrospective and prospective perceptions of the national economy are influenced by objective or subjective factors. Given that the dependent variables are an ordered categorical variables, ordered logit is the most appropriate means of estimation (see Greene, 2000). In the models, if the coefficient is positive, an increase in that regressor always produces a decrease in the probability of the lowest response (e.g., “*definitely not*”) and an increase in the probability of the higher response (“*definitely yes*”).

The following equation is estimated for the two perception measures:

$$Y_i^* = x_i' \beta + \varepsilon_i \quad (1)$$

where  $Y_i^*$  is an unobserved latent continuous variable reflecting the retrospective/prospective economic perception and  $x_i'$  is a vector of the following explanatory variables:  $X = \{SE_i, I_i, PES_i, UE_i, WG_i\}$  where:

**SE<sub>i</sub>** = Vector of personal socio-economic characteristics (Age, Gender, No. of Children, Personal Income, Economic Status, Education)

**I<sub>i</sub>** = Ideology

**PES<sub>i</sub>** = Perception of personal economic situation

**UE<sub>i</sub>** = Regional unemployment rate

**WG<sub>i</sub>** = Regional wage rate

Finally,  $\varepsilon_i$  is an unobserved disturbance term reflecting stochastic difference between individuals, which are not controlled for. The variable is logistically determined with a mean 0 and a variance of  $\pi^2/3$ .

As regional unemployment and wages are measured at the level of *okres* (higher level of aggregation with 76 regions), a survey ordered logit regression is estimated to adjust the standard errors for this higher level of aggregation.

### ***Dependent Variables***

The dependent variables are measured on an ordered 4-category scale ranging from: “*Definitely Not*”, “*Rather Not*”, “*Rather Yes*” and “*Definitely Yes*”. Where necessary responses to questions were re-coded so that they range from pessimistic perceptions of the economy to optimistic perceptions of the economy, hence the higher the value of the indicator, the more optimistic perception of the economy.

Two models were estimated that represent the main economic voting hypotheses.

Model 1 is the Retrospective Sociotropic model, where the dependent variable is responses to the question “*Would you say you are generally satisfied with the recent progress of the present economic reforms?*” Model 2 is the Prospective Sociotropic model, where the dependent variable is responses to the question “*Would you characterise the present period as being the beginning of a substantial improvement of our economic situation?*” The spearman correlation coefficients between the retrospective and prospective measures are 0.54 in T1 and 0.63 in T2.<sup>6</sup>

### ***Independent Variables***

The independent variables are divided into four categories – 1) socio-economic characteristics (age, age squared, gender, number of children, personal income, economic

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<sup>6</sup> The prospective model is only estimated for T1 and T2 as the prospective question was not asked in later surveys.

status, education<sup>7</sup>), 2) ideology, 3) perceptions of personal economic situation, and 4) regional unemployment and wage levels. A full description of these variables may be found in Table 3.

Overall it is hypothesized that the effect of individual socio-demographic characteristics on economic perception formation should be relatively stable throughout the three periods, as these factors, as such, cannot be altered by changes in the economy. However, the effect of past and/or contemporaneous economic experiences, i.e., individual income and employment status, may alter during the transition process. For example, price liberalisation and subsequent inflation may erode the real value of income, while privatisation and restructuring may lead to changes in the structure of employment. We also hypothesize that perceptions of the national economy may be biased by one's ideological position and that this effect may differ over the three time periods as partisanship is consolidated.

As found by previous research, we also hypothesize that sociotropic perceptions of the economic may also be biased by one's own personal economic conditions as individuals who view their own financial situation negatively may also have a negative view of the national economy, regardless of the state of the objective economy. Finally, we include the regional economic measures to test whether objective economic indicators affect national economic perceptions. We expect the effect of the regional indicators to diminish overtime as the initial economic shocks of the early period pass, once partisanship is established and the outcomes of the reform process are felt at the individual level.

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<sup>7</sup> In order to test for the presence of electoral heterogeneity the dataset is also divided into 4 educational groups - primary, vocational, secondary and university - and individual regressions are estimated for each sub-group, in order to test whether individuals with different levels of information capabilities, as proxied by education, rely more on objective or subjective factors when forming perceptions of economic well-being. However, there were no notable deviations between the individual educational groups, suggesting either a homogenous electorate or that education is an inadequate proxy of political and economic sophistication.

## Results

### *Retrospective Perception Model*

Table 4 presents the results of the retrospective perceptions models representing the three time periods. All models control for socio-economic factors, ideological beliefs, personal economic perceptions, and regional macroeconomic conditions. On the basis of their statistical significance ideology and perceptions of personal economic situation are influential in the formation of retrospective evaluations of the economy. The effect of ideology is consistently positive and statistically significant at the 1% level in all three time periods, with supporters of the centre and the right being more satisfied with the progress of economic reforms compared to supporters of the left.<sup>8</sup> Previous research has recognised that partisan pre-dispositions can bias economic perceptions such that some voters may have a negative or positive view of the economy regardless of objective changes in national economic conditions. Between the years 1990-1998 the right-wing party Civic Democratic Party (ODS)<sup>9</sup> dominated the Czech parliament, therefore respondents who identify themselves as right-wing have more positive perceptions of the economy as their party are in government and thus responsible for the reforms. This effect is consistent across all three time period and confirms the partisans perceptual screen theory.

Personal egotropic perceptions also strongly influence perceptions of the national economy. Two retrospective egotropic measures are used to determine the respondent's personal economic situation. The first measure, used in T1 (1991-92) asks whether the

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<sup>8</sup> In order to test for its exogeneity, the models were also estimated excluding ideology. The remaining coefficients were largely unaffected by its exclusion, suggesting it is indeed exogenous.

<sup>9</sup>Civic Forum formed in November 1989 as a broad anti-Communist movement with dissident roots, won the 1990 election and lead the first post-communist government (in coalition with the KDU-CSL). In early 1991, the OF disintegrated into two right-wing parties, the ODS and the Civic Democratic Alliance (ODA), and a centrist Civic Movement (OH). The ODS subsequently won the 1992 and 1996 elections and formed the next two governments in coalition with ODA and KDU-CSL as junior partners.

present economic situation is favourable to the respondents' family and, the second, used in T2 and T3 (1993-94 and 1996-98), asks whether the respondents' family got into financial difficulty within the last year. Table 4 shows that the effect of egotropic perceptions are positive and statistically significant at the 1% level across all three periods. Therefore respondents who stated that they did not get into financial difficulty within the last year, or who believe that the economic situation is favourable to their family, are more likely to be satisfied with the present economic reforms. Hence perceptions of the national economy are biased by perceptions of ones personal economy.

The model also tests the impact of real economic conditions on economic perceptions. Table 4 shows that both the regional unemployment rate and regional wage levels only reach statistical significance in the early transition period (1991-1992). They both have a negative impact on economic perceptions, suggesting that in the early stages of the transition process, respondents who live in high unemployment regions and high wage regions are less likely to be satisfied with the present state of economic reforms. As the regional indicators have no statistical impact during the later periods, this suggests that the initial high rise in unemployment in the early stages of transition had a greater impact on economic perceptions than subsequent rises in the unemployment rate. While the relationship between high unemployment and pessimistic perceptions of the economy adheres to the classic economic voting model, the negative impact of high wages on positive perceptions of the economy runs contrary to expectations, at least in a traditional voting model. This finding, as such, is a post-communist specific outcome. As shown in Doyle and Walsh (2008), mining regions in the Czech Republic typically displayed high wages, as these regions were favoured under the communist regime. As mining continued during the early stages of transition these high wages persisted. However, as the mines were under constant threat of closures during the economic reform process, individuals



living in these regions tended to have a less favourable view of the economic reform process. Hence, high wage regions are associated with more pessimistic perceptions of the economy during the early stages of transition.

It is possible that the regional economic indicators are not statistically significant in the later periods due to the inclusion of personal economic perceptions. Therefore an additional model (which is not presented, but is available from the author upon request), in which personal perceptions were excluded, was estimated. While the results for the first and third time period did not substantially change, regional unemployment became significant at the 10% level in the second period.

Finally, the socio-economic factors have the least consistent impact on retrospective sociotropic perceptions. Age has a negative and statistically significant effect on perceptions across all 3 time periods, suggesting that older respondents have a more pessimistic view of the economy. The effect of age however is U-shaped, such that satisfaction with economic reforms start increasing again once the respondent reaches approximately 45 years of age in the first time period, 50 in the second and 68 in the third.<sup>10</sup> This suggests that dissatisfaction with economic reforms is a phenomenon among the early to middle-aged in the initial stages of the reform process, and the middle-aged in the later stages of transition. This result is contrary to the findings of Hrabá *et al.* (2001) who find that older Czech citizens are less supportive of economic reforms. Under communism, older employees were relatively well paid, medical care was free, retirement was voluntary (however, while one could work beyond the traditional retirement age, early retirement was not possible), and pensions, on average, were set at 60% of the country's average salary. In the new market economy, on the other hand, there is a fixed retirement

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<sup>10</sup> Calculated by finding the max/min of the quadratic function.

age and pensions are now only 45% of the gross average wage.<sup>11</sup> This suggests that older respondents may view the economic reforms more conservatively than younger respondents, however the findings presented here suggest otherwise. A possible explanation for this is that older respondents of working age, i.e., between 45-65, view the economic reforms negatively as their skills are outdated in the new competitive market and the probability of becoming employed, if made unemployed, is very low. However, older respondents, i.e., of pensionable age, do not face this prospect of unemployment, hence pensioners actually display greater support for economic reforms.

The results also show that women have a more optimistic view of the economy than men and this effect is statistically significant across all three periods. This result runs contrary to the hypothesis that women should have a more pessimistic view of the economy due to their precarious situation in the labour market after 1990. During the communist period women's participation in the labour force was encouraged whereas in the new democracy women constitute 56% of total unemployment in the Czech Republic. Yet allowing women to have a choice about their labour market status may have increased support for reforms. In addition, a study by Kozera (1997) which examines female labour force participation rates, occupational segmentation, wage differentials and social policy both pre and post 1989, finds that the position of women in the Czech Republic has not fundamentally deteriorated in the transition period as initially feared. The results also show that the number of children a respondent has is not related to economic perceptions.

As hypothesized, income only becomes a significant determinant of perceptions in the later period, where it is positive and significant at the 1% level from 1993 onwards. Hence higher incomes are associated with greater satisfaction with economic reforms. High income individuals may be protected from negative economic outcomes and thus

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<sup>11</sup> Pensions are tied to price inflation only if inflation exceeds 10% and they have been falling behind real wages since 1991 (Hraba *et al.* 2001).

have a more positive view of the economy. This effect only becomes important in the later surveys, as up until this point, income in the Czech Republic was relatively evenly distributed (see Table 1), however once the outcomes of the reform process were realised, incomes diverged accordingly for both the winners and losers of the reform process (also see Doyle and Fidrmuc (2003) for a analogous result).

Education also plays a role in determining perceptions of the economy, proving significant in all 3 time periods, indicating that higher education is associated with greater satisfaction with economic reforms. Those with greater levels of education are more protected from the negative outcomes of the reform process as they generally have more secure jobs than those with lower levels of education. In addition, they possess human capital characteristics that are more flexible, and therefore more suitable, in the market economy. Several studies (Chase, 1998; Flanagan, 1998; Filer, Jurajda and Planovsky, 1999; Munich, Svenjar and Terrell, 2005a) have found that the returns to education in the Czech Republic have almost doubled in the post-communist period, with the returns being highest for those possessing an academic secondary or a university education.

Table 4 also shows that being employed in a privatized state firm has no impact on economic perceptions, while being employed in a private firm has a positive, albeit weak, effect on perceptions in T3. This is consistent with the hypothesis concerning industrial organisation in post-communist countries. Private firms in such countries had a higher probability of survival than the over-employed inefficient state firms which were continuously under threat of being closed down or privatised and subsequently sold off.

Thus individuals employed in private firms had a more favourable perception of the economy than those who worked in either state firms or privatised state firms, as the new so-called *de-novo* firms typically had a higher incidence of survival during the transition period compared to large state-owned enterprises (see Jackson, Klich and Pznańska (2003)

for a discussion on the relationship between firm-type and vote choice during the transition period in Poland).<sup>12</sup>

Finally, those who are economically inactive also have a more favourable perception of the economy in the later periods. The economically inactive group encompasses individuals who are house persons, students, and pensioners. Therefore, as discussed above, the majority of this group are satisfied with the economic reform process: house persons, who are overwhelming women; students, i.e., those with high levels of education; and finally pensioners, who make up the majority of this category.

### ***Prospective Perception model***

The estimates for the prospective perception model (see Table 5) are similar to the results for the retrospective model. As above, ideology and prospective personal economic perceptions are the most significant determinants of the prospective sociotropic view.

Hence, right-wing respondents believe that the economic outlook for the country is promising compared to left-wing supporters. The prospective egotropic measure, which asks whether the respondent is afraid of economic development in the future, is positive and statistically significant at the 1% level in both time periods. This suggests that the more optimistic the respondent's view of their personal future economy the more optimistic they are about the future of the national economy. The regional economic variables only have an impact in the first period. Regional unemployment has a negative impact on prospective perceptions, while regional wages fail to exert any influence on perceptions. Therefore higher regional unemployment is associated with a negative outlook for the future of the economy, but only in the early stages of the transition period.

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<sup>12</sup> The T1 surveys not distinguish between respondents who worked in state or private firms.

Overall, the socio-economic factors play a much less consistent role in the prospective model. The female coefficient only reaches statistical significance in the second period where again, it has a positive impact on perceptions. The effect of age on prospective perceptions is only significant in the first time period, whereby optimism about the future economy starts increasing again once the respondent reaches approximately 47 years of age. Income has a significant effect on prospective perceptions in T1 suggesting that those with higher incomes are also more optimistic about the future. Education also has a positive effects on perceptions, but only early in transition. Finally, being economically inactive or employed in a private firm has a positive effect on perceptions in the later period.

## Discussion

This analysis attempts to unravel the factors which influence the formation of economic perceptions. The traditional macro approach, finds that voters are well informed about movements in the real economy, which enables them to vote for the party which will deliver their highest level of utility if elected. This approach concludes that voters can objectively view the economy and are not influenced by subjective factors, either internally from their own personal experiences, or externally by the media and political parties. However, there is a scarcity of empirical studies which examine both the objective and subjective determinants of economic perceptions. This study therefore develops this literature by analysing how both retrospective and prospective perceptions of the economy are formed utilizing regional economic indicators which provide variation across individuals and time.

The limited literature on perception formation has generally found that voters do not utilise objective information when forming their perceptions of the economy. This analysis confirms these findings as it demonstrates that both retrospective and prospective economic perceptions are influenced by subjective factors, which are caused by heterogeneity at the individual level, and not by objective conditions in the macro-economy. Specifically it shows that both the regional unemployment rate and the regional wage rate, which experienced considerable fluctuations both regionally and across time, are not related to either satisfaction with economic reforms (retrospective perceptions) or expectations about future economic conditions (prospective perceptions). The regional conditions only played a role in the early transition period when the economy was emitting strong cues due to the major shocks to unemployment and earnings created by the collapse of the communist system and the introduction of the new market economy.

The paper also finds that such perceptions contain subjective sources of systematic variation, with respondents' ideological tendencies and personal financial status being the main factors influencing perceptions. These findings therefore refute Evans and Andersen's (2006) assertions that economic perceptions in transition economies are less susceptible to political re-interpretation. It also refutes Conover *et al.* (1987) finding that retrospective evaluations may be less influenced by partisan dispositions, as we show that both retrospective and prospective perceptions are influenced by ideological tendencies.

Perceptions were also systematically biased by personal experiences such that those who experienced an unfavourable economic situation had a more pessimistic view of the economy regardless of movements in the objective economy. It is also found that different socio-economic groups - the educated, young, high income, professional groups - generally have a more favourable perception of the economy than the less educated, older, blue-collar groups. Therefore, economic perceptions not only contain random

measurement error, but also systematic error caused by heterogeneity at the individual level. Similar to Duch *et al.* (2000), this study suggests that micro economic voting studies should not rely on aggregate measures of economic perceptions as a means of avoiding measurement error associated with survey data.

While this study has focused on perception formation in a newly established democracy, the findings may have more general implications. The study found that perceptions of the real economy can still be distorted by ideology, personal experiences and various socio-economic characteristics, despite large shocks to the national economy, the highly politicized nature of the economic reform process and weak party identification. This suggests that the link between objective and subjective measures of the economy will be even weaker in established democracies where economic conditions are relatively stable over time and partisanship is strong.

These results also have consequences of the economic voting literature. As perceptions of the economy are not objectively determined, this also suggests that movements in the real economy may not play as much of a role in determining election outcomes as previously believed. While the economy does matter, this analysis shows that voters are ultimately swayed by their perceptions of the economy, which are frequently contaminated by ideological preferences and personal experiences, and that this may help to explain why, that even in times of economic fortune, incumbent governments often fail to be re-elected.

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## Tables

**Table 1 Macroeconomic Indicators**

Czech Republic	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
GDP Growth Rate[%]	1.4	-0.4	-11.5	-3.3	0.6	3.2	6.4	3.8	0.3	-2.3	-0.2	3.1	3.5
Inflation Rate [%]	2.3	9.7	56.6	11.1	20.8	10.0	9.1	8.8	8.5	10.7	2.1	4.0	3.0
Unemployment Rate [%]	n.a	0.8	4.1	2.6	3.5	3.2	2.9	3.5	5.2	7.5	9.4	8.8	n.a
Investment [% of GDP]	n.a	26.3	23.1	28.5	26.6	29.5	34.0	36.6	35.1	33.6	32.6	n.a	n.a

Source: EBRD Transition Report (various issues).

**Table 2**

**Regional Unemployment Rates (%)**

UE	Min	Max	Mean	Std. Dev
UE 90	0.09	1.91	0.72	0.33
UE 91	0.84	9.12	4.26	2.01
UE 92	0.32	6	2.66	1.52
UE 93	0.3	8.7	3.63	2.14
UE 94	0.28	7.54	3.22	1.95
UE 95	0.29	7.34	2.91	1.81
UE 96	0.43	9.4	3.55	2.05
UE 97	0.65	12.37	5.32	2.81
UE 98	1.6	15.6	7.58	3.38

**Regional Average Wage Levels (CZ Kr)**

Wages	Min	Max	Mean	Std. Dev
Wage 90	2646	4304	3314	284
Wage 91	2162	2925	2384	147
Wage 92	2364	3292	2636	214
Wage 93	2300	3398	2648	214
Wage 94	2456	3513	2772	250
Wage 95	2709	4166	3026	260
Wage 96	2952	4565	3285	285
Wage 97	2893	4368	3264	311
Wage 98	2759	4866	3407	416

Source: Czech Statistical Regional Yearbooks (various years).

Note: Average wages adjusted for inflation 1990=100.

**Table 3 Independent Variables**

Age	Age of respondent in years
No. of Children	Number of dependent children in household
Gender	1=Male, 2=Female, where male is the base category.
Income	Respondents net personal monthly income (excluding social benefits) in thousands of CZK (deflated by consumer price index by 1990 prices)
Economic Status	The variable is categorical and coded as: 1=Economically Active in State Firm, 2=Economically Active in Privatised State Firm 3=Economically Active in Private Firm, 4=Economically Inactive, where economically active in a state firm is the base category.
Education	The variable is categorical and coded as: 1=Primary 2=Vocational training 3=Secondary 4=University, college, where Primary is the base category.
Ideology	The variable is categorical and coded as: 1=Left, 2=Centre, 3=Right, where Left is the base category.
Personal Economic Situation	The variables are categorical and coded as : 1= Definitely Yes 2= Rather Yes 3=Rather Not 4=Definitely No, in response to questions concerning the respondents' personal economic situation.
Regional UE [%]	% Unemployment in the respondents region in the year the survey was undertaken.
Regional Wage [in thous]	Average Wage in the respondents region in the year the survey was undertaken (deflated by 1990 prices)

**Table 4 Ordered Logit Model of Retrospective Perceptions**

“Would you say you are generally satisfied with the recent progress of the present economic reforms?”

	<i>T1: 1991-1992</i>	<i>T2: 1993-1994</i>	<i>T3: 1996-1998</i>
<b>Ideological Beliefs</b>			
Centre	1.092*** (0.091)	1.001*** (0.109)	1.123*** (0.106)
Right-Wing	1.963*** (0.118)	2.039*** (0.151)	2.257*** (0.132)
<b>Personal Perceptions</b>			
Retro Egotropic Perception	0.864*** (0.055)	1.158*** (0.063)	0.474*** (0.037)
<b>Regional Economic Conditions</b>			
Regional UE Rate % <sup>1</sup>	-0.061*** (0.019)	-0.041 (0.028)	0.006 (0.020)
Regional Wages [thous] <sup>1</sup>	-0.455** (0.195)	0.0144 (0.163)	-0.094 (0.096)
<b>Socio-Economic Factors</b>			
Age	-0.028* (0.015)	-0.045*** (0.015)	-0.061*** (0.015)
Age Squared	0.000 (0.000)	0.000** (0.000)	0.000*** (0.000)
Female	0.150** (0.075)	0.271*** (0.063)	0.199*** (0.068)
No. of children	-0.031 (0.037)	0.069 (0.044)	-0.021 (0.049)
Income [thousands]	-0.025 (0.021)	0.067*** (0.021)	0.162*** (0.024)
Vocational Education	0.237** (0.114)	0.090 (0.090)	0.151* (0.088)
Secondary Education	0.412*** (0.103)	0.381*** (0.103)	0.232*** (0.089)
University Education	0.767*** (0.129)	0.429*** (0.126)	0.303** (0.145)
Employed in Privatised State Firm	~ ~	-0.114 (0.107)	-0.042 (0.113)
Employed in Private Firm	~ ~	-0.088 (0.124)	0.204* (0.111)
Economically Inactive	0.159 (0.096)	0.255* (0.142)	0.280*** (0.097)
EEA Survey Dummy A	-0.217*** (0.083)	0.147 (0.116)	-0.453*** (0.093)
EEA Survey Dummy B	0.261** (0.102)	-0.039 (0.116)	-1.081*** (0.114)
$\mu_1$	-1.090 (0.608)	0.296 (0.602)	-1.152* (0.599)
$\mu_2$	1.363** (0.623)	2.992*** (0.612)	1.290** (0.603)
$\mu_3$	4.060*** (0.625)	6.346*** (0.621)	4.378*** (0.608)
Log Likelihood	-3376.39	-3039.97	-3830.22
$\chi^2$ statistic of overall model	1825.0***	858.1***	2025.1***
Pseudo R <sup>2</sup>	0.1346	0.1949	0.1658
N	3184	3177	3791
Approximate Likelihood-Ratio Test <sup>a</sup>	$\chi^2(32)=117.39***$	$\chi^2(36)=73.37***$	$\chi^2(36)=91.59***$

**Notes:** Heteroskedasticity-robust standard errors are in parentheses. The dependent variable contains four categories ranging from “definitely no” to “definitely yes” in response to the above retrospective sociotropic question. Retrospective Egotropic contains 4 categories ranging from “definitely no” to “definitely yes” in response to the question “Can you say today, that the present economic situation is favourable to your family? in T1 and the second measured used in T2 and T3 asks “Whether the your family got into financial difficulty within the last year”. <sup>1</sup>As Regional Unemployment and Regional Wages are measured at the level of *okres* (higher level of aggregation with 76 regions), a survey ordered logit regression is estimated to adjust the standard errors for this higher level of aggregation. \*\*\* 1%, \*\* 5% and \* 10%.

**Table 5 Ordered Logit Models of Prospective Perceptions**

“Would you characterise the present period as being the beginning of a substantial improvement of our economic situation?”

	<i>T1: 1991-1992</i>		<i>T2: 1993-1994</i>	
<b>Ideological Beliefs</b>				
Centre	1.003***	(0.102)	0.807***	(0.092)
Right-Wing	1.640***	(0.117)	1.741***	(0.118)
<b>Personal Perceptions</b>				
Pro Egotropic Perception	0.805***	(0.051)	1.130***	(0.066)
<b>Regional Economic Conditions</b>				
Regional UE Rate % <sup>1</sup>	-0.079***	(0.024)	-0.025	(0.019)
Regional Wages [thous] <sup>1</sup>	0.0676	(0.223)	0.096	(0.135)
<b>Socio-Economic Factors</b>				
Age	-0.029**	(0.015)	-0.026	(0.016)
Age Squared	0.000*	(0.000)	0.000	(0.000)
Female	0.094	(0.067)	0.160**	(0.069)
No. of children	0.058	(0.048)	0.024	(0.037)
Income [thousands]	-0.010	(0.012)	0.104***	(0.022)
Vocational Education	0.203**	(0.083)	0.037	(0.094)
Secondary Education	0.225**	(0.113)	0.052	(0.101)
University Education	0.204*	(0.124)	-0.070	(0.123)
Employed in Privatised State Firm	~	~	-0.085	(0.090)
Employed in Private Firm	~	~	0.260***	(0.099)
Economically Inactive	0.007	(0.104)	0.289***	(0.108)
EEA Survey Dummy A	-0.123	(0.103)	0.193*	(0.112)
EEA Survey Dummy B	0.043	(0.103)	-0.025	(0.094)
$\mu_1$	0.411	(0.642)	1.183**	(0.543)
$\mu_2$	2.481***	(0.657)	3.597***	(0.546)
$\mu_3$	4.553***	(0.664)	6.223***	(0.563)
Log Likelihood	-3682.86		-3335.64	
$\chi^2$ statistic of overall model	887.88***		1373.6***	
Pseudo R <sup>2</sup>	0.1248		0.1836	
N	3187		3188	
Approximate Likelihood-Ratio Test <sup>a</sup>	$\chi^2(32)=69.49***$		$\chi^2(36)=62.87***$	

**Notes:** Heteroskedasticity-robust standard errors are in parentheses. The dependent variable contains four categories ranging from “definitely no” to “definitely yes” in response to the above prospective sociotropic question. Prospective Egotropic contains 4 categories ranging from “definitely yes” to “definitely no” in response to the question “Looking into the near future, are you afraid of economic development? Do you have a feeling of insecurity.”<sup>1</sup>As Regional Unemployment and Regional Wages are measured at the level of *okres* (higher level of aggregation with 76 regions), a survey ordered logit regression is estimated to adjust the standard errors for this higher level of aggregation. Significance levels: \*\*\* 1%, \*\* 5% and \* 10%.