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What Determines Individual Preferences over Reform? Microeconomic Evidence from Russia

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This paper provides empirical evidence on the determinants of individual reform preferences in Russia after the August 1998 crisis. We analyze the response pattern to survey questions about the individual's support of returning to socialism and stopping market reforms in a bivariate probit framework. Two possible explanations for the observed preferences are considered. First, personal attitudes toward reform are affected by the individuals' economic gains or losses during transition. Second, as established by research in sociology, some societal groups are more flexible than others in adapting to changes in their environment. The empirical results, which focus on the effect of age, education, labor market status, income levels and income changes on the likelihood of opposing reform, give support to both hypotheses. Interestingly, we also find a strong regional variation in reform attitudes. Controlling for individual characteristics, we establish that people who live in high-arrears regions are more likely to oppose the reform process. Furthermore, the regional income level, ethnic composition, oil production and crime rate are significantly related to the market reform orientation of the regions' residents. [JEL P26]

This paper provides new empirical evidence on the determinants of individual reform preferences in Russia. We consider two explanations of how these preferences are formed. Under the first hypothesis, the personal attitude towards reform depends on whether the individual gains or loses (in economic terms) during the transition process. Microeconomic data from 1994 until 1998 are used

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to establish the profile of economic winners and losers.[1] The second hypothesis is based on sociological explanations of individual reform preferences. Evidence from this literature suggests that some societal groups are more flexible than others in changing their political attitudes and ideological beliefs. In addition, we consider the effect of regional economic and social conditions on the support for reform offered by the regions' residents.

The empirical analysis is conducted using a representative sample of Russia. The information about individuals' attitude towards reform comes from Round 8 of the Russian Longitudinal Monitoring Survey (RLMS), conducted only a few months after the August 1998 crisis. The general position of respondents on the political and economic reforms undertaken during the transition period can be inferred from their answers to two survey questions about reform. The first question captures the individual's opinion of the reform process in general, without distinguishing between the economic and noneconomic changes in the society. The second question, on the other hand, focuses on the individual's attitude towards market reform only.

The empirical model is estimated in two different ways. In the first approach, the dependent variables are used to estimate two univariate probit models. The advantage of this method is that we lose only a few nonresponse observations and can address potential sample selection problems. The second approach involves the estimation of a bivariate probit model, which computes the joint and marginal probabilities of supporting the return to socialism and the end of market reforms.

The main contributions of our paper are as follows. First, we use a rich microeconomic dataset that includes direct measures of reform preferences *and* comprehensive individual-level and regional-level information. In contrast, most previous economic studies draw inferences about reform preferences from indirect measures such as the observed pattern of voting (Brainerd, 1998; Fidrmuc, 2000; and Kapstein and Milanovic, 2000). Since the correspondence between preferences and actions is not always one-to-one, we give preference to our direct measures of reform attitudes. When direct measures of reform preferences are available (see, for example, Hayo, 2001; and Finifter and Mickiewicz, 1992), individual-level demographic and socioeconomic data are scant. Second, our empirical analysis draws on two streams of research and offers a simultaneous treatment of the economic and sociological determinants of reform preferences. We do not consider our results to be direct tests of the economic and ideology hypotheses of the formation of reform preferences. However, we can interpret our findings in light of these two lines of thought. Third, we contribute to the literature on the relationship between regional performance and individual reform attitudes in Russia, in particular, by examining the effect of local economic conditions on the reform-mindedness of the different regions' residents.

The main results of the paper can be summarized as follows. *First,* better-educated people are more likely to oppose the return to socialism and the end of market reforms. The findings suggest that economic factors are not sufficient to explain the observed pattern of reform attitude, that is, ideology plays an important role as well.

[1] Brainerd (1998) provides evidence for the initial period of transition (1991–94).

Second, age has a strong effect on the probability of opposing reform, even after controlling for income and other socioeconomic characteristics. The evidence also yields support to the ideology hypothesis, which predicts that old people would be less likely to accept and support the changes in their environment.

Third, the labor market status of the respondents plays an important role in shaping preferences toward reform. Private sector workers (especially those employed in the banking sector) are more likely to be proreform, conditional on their wage and nonwage income. These results are consistent with the notion that the economic gains made during transition have an effect on the individual propensity to support the reform process.

Fourth, the strongest support for the economic hypothesis comes from examining the coefficients of the subjective and objective variables that reflect the changes in the individual's standard of living, including as a consequence of the 1998 Russian crisis. Respondents who say that they lived better five years before are more likely to oppose reform than those who didn't. The most important finding is that people who experienced losses in their relative income or consumption level between 1994–96 were more likely to prefer the old socialist regime. Interestingly, respondents who suffered large income or consumption losses during the 1998 Russian crisis were not more likely to be against market reforms. In contrast, respondents who had an absolute income gain during the same period were more likely to be proreform.

Fifth, the level of enterprise arrears in the region has a strong impact on the probability that the residents of the region support the reform process. Even after controlling for the demographic and socioeconomic characteristics of the individuals in the sample, people who live in high-arrears regions are more likely to be in favor of returning to socialism and stopping market reform than those who inhabit low-arrears regions. Furthermore, residents of oil-producing regions are significantly more likely to be against market reform. On the other hand, other economic indicators of regional performance, such as the local unemployment rate and private sector size, do not have a statistically significant effect on the individual reform preference.

I. Literature Survey

The labor market winners and losers during the early stage of the economic transition in Russia are identified in Brainerd (1998). Using monthly survey wage data from 1991, 1993, and 1994, the author finds that the returns to education increased, the returns to experience fell, and the female-male wage differential (unadjusted for hours) widened. By analyzing the link between wage loss during transition and voting preferences of individuals during the December 1993 parliamentary elections, she finds that the predicted loss in wages had little effect on the voting behavior. Kapstein and Milanovic (2000) analyze the relationship between individual characteristics and the probability of voting pro-Yeltsin during the 1996 presidential elections. They establish that the younger, better educated, and richer individuals tended to vote for Yeltsin.[2]

[2]The data source for both papers (Brainerd, 1998; and Kapstein and Milanovic, 2000) is a series of cross-section household surveys conducted by the All-Russian Center for Public Opinion Research.

Based on parliamentary election results in Central Europe, Fidrmuc (2000) identifies socioeconomic groups that give their political support to pro-reform or anti-reform parties. Using county-level data from the Czech Republic, Hungary, Poland, and Slovakia, Fidrmuc finds that regions with a high proportion of private entrepreneurs, white-collar workers, and university-educated voters are more likely to vote for pro-reform parties. Anti-reform parties are popular in counties with a large fraction of retirees, unemployed, blue-collar, and agricultural workers. The results also suggest that anti-reform parties do very well in rural areas, especially in Slovakia and Poland.

Hayo (2000) emphasizes the effect of inflation on the public support for reform in Eastern and Central Europe. The author uses data from the Central and Eastern Euro-Barometer surveys to document the evolution of support for reform over time. He finds that most of the macroeconomic variables (with the notable exception of inflation) do not have a significant effect on the public support for reform during transition.

The question of public support for political change in Russia was addressed in the political science and sociology literature as well. An early study by Finifter and Mickiewicz (1992) uses a national public opinion survey conducted in 1989. The paper establishes a positive relationship between education and support for political change, which is partly attributed to "[that] highly educated individuals are more tolerant of political deviance and more likely to engage in political participation." The authors also emphasize that the support for reform declines consistently with age, and explain their finding with the reluctance of aged people to change their attitudes, as well as the "generation effect" of undergoing early adulthood socialization and attitude formation during the Stalin regime.[3]

The determinants of two measures of support for democracy in Central and Eastern Europe—the rejection of authoritarian alternatives and the positive assessment of the current regime—are analyzed in Rose, Mishler, and Haerpfer (1998). The authors report that political rather than economic variables explain the support for democracy, as measured by the rejection of authoritarian alternatives. However, changes in GDP have a strong significant effect on the approval of the current system.

II. Theoretical Framework

Economic Determinants of Reform Preferences

One possible framework of thinking about the determinants of individual attitudes toward reform is provided by simple economic reasoning. The premise of this approach is that each reform process generates winners and losers. The support for the reform in question depends on the net benefit that each individual receives

[3]The attitudinal legacy of the socialist period is examined in the economics literature as well. Blanchflower and Freeman (1997) analyze its effect on labor relations in former communist countries. The opinions of New York and Moscow residents toward the free market are compared in Shiller, Boycko, and Korobov (1991). The same authors analyze the attitudinal differences between individuals from ex-communist and western countries (Shiller, Boycko, and Korobov (1992)).

from its implementation.[4] The link between economic benefits and individual attitudes is what we call "the economic hypothesis."

In this paper, we focus on the winners and losers in the Russian labor market. Our expectation is that individuals and groups that experienced economic losses in the labor market during transition would be more likely to be against the reform process. The opposite would be true of the winners.

The changes in the wage structure in Russia are illustrated using the results from Brainerd (1998) for the period between 1991 and 1994 and cross-sectional data from the RLMS for the period from 1994 to 1998. The estimation is done using a standard human capital specification, as in Brainerd (1998). The results are shown in Table 1. The estimates in panel A indicate that the returns to university education relative to specialized secondary education for men increased from 8.3 percent in 1991 to 21.9 percent in 1998. The returns to primary education, on the other hand, experienced a monotonic decline from –7.1 percent in 1991 to –54.6 percent in 1998. The regression in panel B reveals that the education premium rose for women as well. The returns to primary education relative to specialized secondary education fell from –14.1 percent in 1991 to –53.1 percent in 1998. Also, over the period from 1991 to 1998, the returns to experience declined, and the male/female wage gap increased (results not shown).[5] Given this pattern of changes in wages, we anticipate that the support for reform would be increasing with the educational level of individuals, and decreasing with their age. In addition, women should be more opposed to market reforms than men.

Ideological Determinants of Reform Preferences

The second hypothesis is based on theoretical and empirical work in sociology. In particular, we focus our attention on the theories of "generational succession" (Mannheim, 1952; Ryder, 1965; Carlson and Karlsson, 1970), "generational persistence" (Sears, 1987), and "aging-stability" (Glenn, 1980) that highlight the importance of age and cohort in the formation of personal attitudes. According to Alwin and Krosnick (1991), "peoples' attitudes are considered to be shaped by socialization experiences early in adulthood and to remain relatively resistant to changes after this time. Differences between generations in terms of social and political circumstances and formal socialization experiences produce potentially different attitudinal perspectives." The general premise in these theories is that "the stability of attitudes is the lowest during the impressionable years of young adulthood, growing in magnitude over the life cycle, with a possible decrement in the growth of attitude stability in the latest years" (Alwin and Krosnick, 1991).[6]

[4]The feasibility of reforms based on political economy considerations has been the subject of numerous papers (see Fernandez and Rodrik (1991), for example).

[5]This is consistent with the findings of Keane and Prasad (2000) for Poland.

[6]The inflexibility of peoples' attitudes with the progression of their life-cycle has been documented by Alwin, Cohen and Newcomb (1991), Marwell, Aiken and Demerath (1987), Fendrich and Lovoy (1988) and others. The relationship between generations and ideological change is also discussed by Roberts and Lang (1985). In the Russian context, the importance of age and generational effects on the public support for political change has been mentioned by Finifter and Mickiewicz (1992), as discussed in Section I.

Table 1. Returns to Education and Experience (1991–98)

A. Log Wage Equation: Men

	1991[a]	1993[a]	1994[a]	1994[b]	1995[b]	1996[b]	1998[b]
Primary	–0.071	–0.352	–0.37	–0.452	–0.499	–0.486	–0.546
	(0.100)	(0.103)**	(0.136)*	(0.140)**	(0.153)**	(0.163)**	(0.230)*
Incomplete	–0.173	–0.321	–0.27	–0.340	–0.235	–0.302	–0.213
	(0.058)**	(0.066)**	(0.073)**	(0.086)**	(0.092)*	(0.096)**	(0.102)*
Secondary	–0.104	0.150	–0.10	–0.157	0.013	–0.079	–0.067
	(0.042)*	(0.043)**	(0.047)*	(0.067)*	(0.069)	(0.079)	(0.080)
Vocational	–0.078	–0.194	–0.13	–0.236	–0.081	–0.263	–0.223
	(0.043)	(0.042)**	(0.046)*	(0.062)**	(0.064)	(0.080)**	(0.072)**
University	0.083	0.161	0.22	0.141	0.211	0.085	0.219
	(0.042)	(0.040)**	(0.045)**	(0.064)*	(0.067)**	(0.080)	(0.076)**
Experience	0.026	0.009	0.02	0.022	0.021	0.018	0.015
	(0.004)**	(0.005)	(0.005)*	(0.006)**	(0.006)**	(0.008)*	(0.007)*
Experience^2/100	–0.062	–0.035	–0.04	–0.055	–0.052	–0.049	–0.049
	(0.010)**	(0.012)**	(0.013)**	(0.012)**	(0.012)**	(0.015)**	(0.013)**
Observations	900	2984	2198	1677	1466	1189	1266
R-squared	0.205	0.188	0.192	0.31	0.28	0.33	0.30

B. Log Wage Equation: Women

	1991[a]	1993[a]	1994[a]	1994[b]	1995[b]	1996[b]	1998[b]
Primary	–0.141	–0.196	–0.31	–0.502	–0.638	–0.407	–0.531
	(0.152)	(0.111)*	(0.142)*	(0.145)**	(0.135)**	(0.168)*	(0.228)*
Incomplete	–0.076	–0.311	–0.39	–0.339	–0.426	–0.285	–0.342
	(0.057)	(0.062)**	(0.067)**	(0.077)**	(0.071)**	(0.094)**	(0.110)**
Secondary	–0.129	–0.152	–0.229	–0.144	–0.091	–0.075	–0.144
	(0.037)**	(0.033)**	(0.036)**	(0.061)*	(0.064)	(0.069)	(0.076)
Vocational	–0.080	–0.037	–0.09	–0.175	–0.155	–0.142	–0.193
	(0.042)*	(0.038)	(0.042)*	(0.052)**	(0.057)**	(0.064)*	(0.065)**
University	0.206	0.254	0.30	0.242	0.206	0.082	0.168
	(0.035)**	(0.028)**	(0.031)**	(0.045)**	(0.050)**	(0.060)	(0.056)**
Experience	0.035	0.025	0.02	0.016	0.029	0.021	0.025
	(0.005)**	(0.005)**	(0.005)**	(0.005)**	(0.005)**	(0.007)**	(0.006)**
Experience^2/100	–0.082	–0.055	–0.03	–0.037	–0.058	–0.052	–0.056
	(0.012)**	(0.012)**	(0.013)*	(0.010)**	(0.010)**	(0.013)**	(0.011)**
Observations	819	3702	2718	1782	1562	1333	1420
R-squared	0.205	0.188	0.192	0.29	0.29	0.26	0.27

Notes: 1. Standard errors are reported in parentheses. 2. Significance levels of 5 percent and 1 percent are denoted by (*) and (**), respectively. 3. The reference category for education is specialized secondary education.

[a]Source: Brainerd (1998).

[b]Source: Authors' calculations.

The observation that old cohorts are more likely than younger ones to adhere to their earlier political attitudes is emphasized by Cutler and Kaufman (1975). The authors point out that "successive cohorts are socialized to different political attitudes, values, and ideologies as the content of the political culture changes. Associated with the subsequent movement of individual members of the cohorts through the life cycle are psychologically based, age-related changes in the direction of greater rigidity, cautiousness, and increasing resistance to change."

The main prediction of the ideological hypothesis for our empirical analysis is that older cohorts in Russia are more likely to adhere to their socialist beliefs and express their preference toward moving backward and not proceeding with the reform process.

III. Data

The information about the individual's attitude towards reform comes from Round 8 of the Russian Longitudinal Monitoring Survey (1992–99).[7] We measure the preferences for reform by the responses to the following two questions:

Question 1. "In looking back on the past ten years, what do you think, do we need to return everything to the way it was before Gorbachev, to socialism, should we maintain the present course without change, or repair, or adjust the present course? R1) Return everything to the way it was before Gorbachev, to socialism; R2) Stay on the present course; R3) Repair, adjust present course; R4) Doesn't know; R5) Refuses to answer."

Question 2. "Which of the choices below best describes market reform in your opinion? R1) Market reform needs to cease; R2) Market reform should continue, as it is; R3) Market reform ought to be carried out some other way; R4) Doesn't know; R5) Refuses to answer."

The general position of respondents on the political and economic reforms undertaken during the transition period can be inferred from the answers to these questions. The first question captures the individual's opinion of the reform process in general, without distinguishing between the economic and noneconomic changes in the Russian society. The second question, on the other hand, focuses on the individual's attitude towards market reform only.

The responses to Question 1 and Question 2 are presented in Table 2. The raw numbers suggest that only a few people are in favor of the status quo. Most respondents would like the reform process to continue, although in another way. Considering the timing of the survey, this result is not surprising. The survey participants were interviewed in the period between October 1998 and January 1999, that is, only months after the August crisis.[8] The response rates are relatively high—

[7]The survey was conducted by researchers from the Population Center at University of North Carolina–Chapel Hill, with the corroboration of the Institute of Sociology at the Russian Academy of Science, Paragon Research International, the Russian Center for Preventive Medicine, the Russian Institute of Nutrition at the Russian Academy of Medical Sciences, and the State Statistical Bureau (Goskomstat). The detailed description of the sampling design is given on the RLMS website at *http://www.cpc.unc.edu/rlms/project/sampling.html.*

[8]Most of the interviews (79.2 percent) were conducted in November 1998. In the empirical analysis, we include dummy variables for the month of the interview.

Table 2. Description of Responses to Survey Questions

Response	Question 1		Question 2	
	N	Percentage	N	Percentage
R1. Return to socialism/ stop market reform	3,292	37.8	1,969	22.6
R2. Stay on present course/ continue market reform as it is	269	3.1	627	7.2
R3. Adjust present course/ carry out market reform some other way	4,279	49.2	4,557	52.4
R4. No response	861	9.9	1,548	17.8
Total	**8,701**	**100**	**8,701**	**100**

Note: See text for exact wording of the questions.

90.1 percent for Question 1 and 82.2 percent for Question 2. Using these data, we construct two dichotomous variables, *StopCourse* and *StopMarket*. Each variable is equal to 1 if the individual's response was R1 and 0 otherwise (see Table 2). According to this definition, the people who support reform are those who don't want the reform process to be reverted.

The cross-tabulated values of *StopCourse* and *StopMarket* are shown in Table 3. Interestingly, a relatively large proportion of the respondents (13.6 percent of the entire sample) say that they are in favor of returning to socialism (*StopCourse* = 1), but they don't want market reforms to stop (*StopMarket* = 0). One interpretation of this result is that although people are in favor of economic reforms, their attitude towards socialism is driven solely by ideological considerations. A second possibility is that classification error is responsible for the observed outcome. The most plausible explanation, however, is that the respondents do not have a clear notion of what market reform means. In contrast, the question about the return of socialism is well-defined and specific for most of the respondents who lived through the pre-reform period. This explanation is supported by the fact that a large proportion of individuals in this "mixed" category are aged between 60 and 70.

Definitions and summary statistics for some of the explanatory variables are presented in Table 4.[9] Most demographic variables come from the individual adult file for Round 8 of the RLMS. The asset variables are derived from the household file. The income group dummies are based on the total household income, constructed as a sum of the nominal monthly income of the household members, divided by the minimum nominal monthly expenditures needed to keep the family from falling below the regional poverty line during the month of the interview. The economic rank variables are constructed using the respondents' answers to the

[9]The data documentation provides sample weights, although "the net effect of nonresponse attrition and change in dwelling unit occupants across rounds on the marginal characteristics of the observed cross-sectional samples is modest." The empirical analysis is conducted in two ways, with and without using the sample weights. The estimation results are robust with respect to both specifications. We present the estimation results using the unweighted sample only.

Table 4. Definitions and Summary Statistics of Selected Variables: RLMS Dataset, Round 8

Variable name	Definition	*StopCourse* mean and (std. dev.)	*StopMarket* mean and (std. dev.)
	A. Dependent Variables		
StopCourse	Individual responds R1 to Question 1 (see Table 2 and text)	0.42 (0.49)	0.56 (0.50)
StopMarket	Individual responds R1 to Question 2 (see Table 2 and text)	0.56 (0.50)	0.28 (0.45)
	B. Demographic and Socioeconomic Variables		
Female	Individual is female	0.44 (0.50)	0.28 (0.45)
Age dummies:			
Age1	≤19 years of age in November 1998	0.26 (0.44)	0.19 (0.39)
Age2	≥20 and ≤29 years of age in November 1998	0.25 (0.48)	0.16 (0.37)
Age3	≥30 and ≤39 years of age in November 1998	0.34 (0.48)	0.22 (0.42)
Age4	≥40 and ≤49 years of age in November 1998	0.42 (0.49)	0.28 (0.45)
Age5	≥50 and ≤59 years of age in November 1998	0.49 (0.50)	0.32 (0.47)
Age6	≥60 and ≤ 69 years of age in November 1998	0.61 (0.49)	0.41 (0.49)
Age7	≥70 years of age in November 1998	0.67 (0.47)	0.44 (0.50)
Education dummies:			
Primary	Attended school for ≤ 6 years	0.79 (0.41)	0.59 (0.49)
Incomplete Secondary	Attended secondary school for ≥7 and ≤9 years	0.53 (0.50)	0.37 (0.48)
Vocational	Vocational school graduate	0.43 (0.50)	0.30 (0.46)
Secondary	Secondary school graduate	0.38 (0.49)	0.25 (0.43)
Specialized	Specialized school graduate	0.34 (0.47)	0.21 (0.40)
University	University graduate	0.22 (0.41)	0.13 (0.33)
Settlement dummies:			
Urban	Individual lives in a city	0.34 (0.48)	0.23 (0.42)
PGT	Individual lives in a "village of a city type"	0.51 (0.50)	0.36 (0.48)
Rural	Individual lives in a village	0.60 (0.49)	0.39 (0.49)
Children	Individual belongs to a household with children	0.37 (0.48)	0.24 (0.43)

Similarly, let M_i^* denote the difference between the costs and benefits of market reform for individual i. Assume that M_i^* is a linear function of economic and sociological determinants.

$$M_i^* = X_i\beta_2 + \varepsilon_{2i}, \tag{3}$$

where X_i is a vector of observed variables and ε_2 is a normally distributed error term with mean zero and variance σ_2^2. The observed attitude toward market reform is given by the indicator $StopMarket_i$:

Table 4. *(concluded)*

Variable name	Definition	*StopCourse* mean and (std. dev.)	*StopMarket* mean and (std. dev.)
	C. Household Income and Asset Variables		
Income dummies:			
Income Group1	Income is <0.5 of regional poverty line	0.49 (0.50)	0.36 (0.48)
Income Group2	Income is ≥0.5 and <1 of regional poverty line	0.45 (0.50)	0.30 (0.46)
Income Group3	Income is ≥1 and <1.5 of regional poverty line	0.41 (0.49)	0.28 (0.45)
Income Group4	Income is ≥1.5 and <2 of regional poverty line	0.43 (0.49)	0.26 (0.44)
Income Group5	Income is ≥2 of regional poverty line	0.37 (0.48)	0.21 (0.41)
Asset dummies:			
Car Owner	Individual's household owns a car	0.39 (0.47)	0.22 (0.42)
TV Owner	Individual's household owns a color TV	0.37 (0.48)	0.24 (0.43)
VCR Owner	Individual's household owns a VCR	0.30 (0.46)	0.20 (0.40)
Countryhouse Owner	Individual's household owns a country house	0.33 (0.47)	0.20 (0.40)
Land Use	Individual's household has access to land for home production	0.45 (0.50)	0.30 (0.46)
	D. Subjective Variables		
Lived Better	Reports he/she lived better 5 year ago	0.46 (0.50)	0.31 (0.46)
Lived Same	Reports he/she lived the same 5 year ago	0.33 (0.47)	0.18 (0.38)
Lived Worse	Reports he/she lived worse 5 year ago	0.30 (0.46)	0.16 (0.37)
Expect Better	Expects he/she will live better in 1 year	0.25 (0.43)	0.18 (0.39)
Expect Same	Expects he/she will live the same in 1 year	0.38 (0.48)	0.24 (0.43)
Expect Worse	Expects he/she will live worse in 1 year	0.50 (0.50)	0.33 (0.47)
Economic Rank1	Step 1 (lowest) of a 9-step income ladder	0.62 (0.49)	0.42 (0.49)
Economic Rank2	Step 2 of a 9-step income ladder	0.48 (0.50)	0.32 (0.47)
Economic Rank3	Step 3 of a 9-step income ladder	0.39 (0.49)	0.27 (0.44)
Economic Rank4	Step 4 of a 9-step income ladder	0.33 (0.47)	0.21 (0.41)
Economic Rank5	Step 5 of a 9-step income ladder	0.34 (0.47)	0.19 (0.39)
Economic Rank6	Step 6 of a 9-step income ladder	0.30 (0.46)	0.18 (0.38)
Economic Rank7	Step 7 of a 9-step income ladder	0.29 (0.46)	0.15 (0.36)
Economic Rank8	Step 8 of a 9-step income ladder	0.56 (0.51)	0.46 (0.51)
Economic Rank9	Step 9 of a 9-step income ladder	0.13 (0.35)	0.00 (0.00)
Observations		7,840	7,153

$$StopMarket_i = \begin{cases} 1 \text{ (stop market reform)} & \text{if } M_i^* \geq 0 \\ 0 \text{ (don't stop market reform)} & \text{if } M_i^* < 0 \end{cases}. \tag{4}$$

We estimate the empirical model in two different ways. In the first approach, equations (1)–(4) are used to estimate two univariate probit models. The advantage of this method is that we lose only a few nonresponse observations (see Table 3). In addition, we can address potential sample selection problems. The estimation of a probit model with sample selection is discussed in Van de Ven and Van Praag (1981). The authors propose a correction that is analogous to Heckman's

procedure. Their method involves estimating the main equation and the selection equation simultaneously, in a bivariate probit framework, and testing for the presence of sample selection.

In the second approach, we estimate $StopCourse_i$ and $StopMarket_i$ as a bivariate probit model. The underlying assumption of this model specification is that the error terms ε_{1i} and ε_{2i} are jointly normally distributed, with a covariance matrix given by:

$$\Sigma = \begin{bmatrix} \sigma_1^2 & \rho\sigma_1\sigma_2 \\ & \sigma_2^2 \end{bmatrix} \tag{5}$$

The four sample outcomes, determined by different combinations of $StopCourse_i$ and $StopMarket_i$, give rise to the following likelihood function:

$$\begin{aligned} L = &\prod_{N_1} \Pr(StopCourse_i = 1,\ StopMarket_i = 1) \times \prod_{N_2} \Pr(StopCourse_i = 1,\ StopMarket_i = 0) \\ &\times \prod_{N_3} \Pr(StopCourse_i = 0,\ StopMarket_i = 1) \times \prod_{N_4} \Pr(StopCourse_i = 0,\ StopMarket_i = 0), \end{aligned} \tag{6}$$

where N_j denotes the size of the relevant subsample. Let $\eta_{1i} = \varepsilon_{1i}/\sigma_1$ and $\eta_{2i} = \varepsilon_{2i}/\sigma_2$. Denote the standard bivariate normal density by $\phi(.) = \phi(\eta_{1i}, \eta_{2i}; \rho)$. Then equation (6) can be written as:

$$\begin{aligned} L = &\prod_{N_1} \int_{-X_i\beta_1}^{\infty} \int_{-X_i\beta_2}^{\infty} \phi(.)\, d\eta_{2i}\, d\eta_{1i} \times \prod_{N_2} \int_{-X_i\beta_1}^{\infty} \int_{-\infty}^{-X_i\beta_2} \phi(.)\, d\eta_{2i}\, d\eta_{1i} \\ &\times \prod_{N_3} \int_{-\infty_1}^{-X_i\beta_1} \int_{-X_i\beta_2}^{\infty} \phi(.)\, d\eta_{2i}\, d\eta_{1i} \times \prod_{N_4} \int_{-\infty}^{-X_i\beta_1} \int_{-\infty}^{-X_i\beta_2} \phi(.)\, d\eta_{2i}\, d\eta_{1i} \end{aligned} \tag{7}$$

The likelihood function is maximized with respect to the normalized coefficients β_1 and β_2, as well as the correlation coefficient ρ. Using the bivariate probit estimates, we compute the joint and marginal probabilities of supporting the return to socialism and the end of market reforms.[11] The problem with the bivariate estimation is that we lose approximately 20 percent of the observations in the sample. This listwise deletion, however, leads to inefficiency. If the data are not missing at random, the coefficient estimates would be biased as well. To address this issue, we employ a multiple imputation procedure. This approach leads to consistency under the assumption that the data are missing randomly conditional on the data included in the imputation procedure. The method used in this paper is called "hotdeck imputation" (see Mander and Clayton (1999)). The missing data are imputed stochastically, using the approximate Bayesian bootstrap method of Rubin and Schenker (1986). The standard errors are corrected for the use of the imputation procedure.

[11] Alternatively, we could estimate a multivariate logit model (see Amemiya, 1981).

Another econometric issue arises if group-specific variables, such as regional unemployment rate or family assets, are included in individual-level regressions. In this case, their standard errors will be biased downward (Moulton (1990)). We address this problem by taking into account the clustering of the data in the computation of the standard errors.

V. Empirical Results

Explaining Individual Reform Preferences

Education. The effect of education on the reform preferences of individuals is examined first. The baseline specification of our empirical model is shown in Table 5. We report two sets of results, obtained from the estimation of the univariate and bivariate models discussed in the previous section. For the sake of brevity, we discuss the bivariate probit estimates only. The explanatory variables in Table 5 are age, education, gender, settlement type, region, and month-of-interview dummies. The educational level of each respondent has a significant effect on the probability of favoring the return to socialism. Individuals who have primary education are approximately 15 percent more likely than vocational school graduates to prefer the revival of socialism. The likelihood of supporting the old socialist regime declines by 5 percent and 11 percent for secondary school and specialized school graduates, respectively. University-educated people, on the other hand, are about 24 percent more likely to oppose the return to socialism than people with vocational training only. In other words, the support for reform increases with the educational level of the respondents. This pattern is consistent with the changes in the returns to education during the transition period shown in Table 1.

We check the robustness of these results by adding income and asset variables to the baseline specification. Although the magnitude of the educational variables declines, their coefficients are still statistically significant. Since the returns to education may vary with gender, settlement type, and age, we include interaction terms to account for these effects.[12]

One important finding is the robust effect of university education on reform attitudes. Interestingly, the effect of university does not change when we restrict the sample to include only retirees, that is, people who are out of the labor force, and control for their income (see Table 6). Compared to vocational school graduates, university-educated retirees are approximately 31 percent less likely to favor the return to socialism and 22 percent more likely to favor market reforms. These findings point to the significance of ideology in influencing the decision of highly educated people to support the reform process.

Age. The marginal probabilities of the age dummies in Table 5 follow an interesting pattern. The probability of favoring the return to socialism and the discontinuation of market reforms increases almost monotonically with age. In particular, people who are below 20 are 27 percent more likely to reject socialism than people aged between 40 and 50. The effect of the same dummy (*Age1*) on the likelihood of supporting market reform is 0.15.

[12]The results are available upon request.

Table 5. The Effect of Age and Education on Reform Preferences

(Univariate and bivariate probit estimates)

	Univariate				Bivariate			
	Probit Coefficients		Marginal Probabilities		Probit Coefficients		Marginal Probabilities	
	Socialism	Market Reform	Socialism	Market Reform	Socialism	Market Reform	Socialism	Market Reform
Age1	–0.788 (0.068)**	–0.557 (0.075)**	–0.268 (0.019)**	–0.148 (0.016)**	–0.819 (0.073)**	–0.566 (0.076)**	–0.266 (0.019)**	–0.149 (0.016)**
Age2	–0.580 (0.053)**	–0.501 (0.059)**	–0.211 (0.017)**	–0.141 (0.014)**	–0.564 (0.056)**	–0.510 (0.060)**	–0.200 (0.018)**	–0.143 (0.014)**
Age3	–0.238 (0.051)**	–0.192 (0.056)**	–0.091 (0.019)**	–0.059 (0.016)**	–0.220 (0.054)**	–0.215 (0.057)**	–0.082 (0.020)**	–0.065 (0.016)**
Age5	0.144 (0.057)*	0.063 –0.061	0.057 (0.023)*	0.021 –0.020	0.143 (0.060)*	0.062 –0.062	0.056 (0.0235)*	0.020 (0.020)
Age6	0.271 (0.058)**	0.191 (0.063)**	0.107 (0.023)**	0.064 (0.022)**	0.278 (0.062)**	0.167 (0.064)**	0.109 (0.024)**	0.055 (0.022)**
Age7	0.311 (0.069)**	0.163 (0.075)*	0.123 (0.028)**	0.054 (0.026)*	0.264 (0.076)**	0.155 (0.077)*	0.103 (0.030)**	0.051 (0.027)*
Primary	0.416 (0.078)**	0.364 (0.082)**	0.165 (0.031)**	0.127 (0.031)**	0.377 (0.086)**	0.355 (0.084)**	0.148 (0.034)**	0.123 (0.031)**
Incomplete	0.206 (0.055)**	0.130 (0.060)*	0.081 (0.022)**	0.043 (0.020)*	0.204 (0.059)**	0.113 –0.061	0.079 (0.023)**	0.037 (0.020)*
Secondary	–0.144 (0.050)**	–0.149 (0.054)**	–0.056 (0.019)**	–0.046 (0.016)**	–0.144 (0.053)**	–0.174 (0.055)**	–0.054 (0.020)**	–0.053 (0.016)**
Specialized	–0.331 (0.050)**	–0.338 (0.055)**	–0.125 (0.018)**	–0.100 (0.015)**	–0.356 (0.054)**	–0.363 (0.056)**	–0.131 (0.019)**	–0.106 (0.015)**
University	–0.711 (0.057)**	–0.638 (0.062)**	–0.251 (0.017)**	–0.171 (0.013)**	–0.695 (0.059)**	–0.679 (0.064)**	–0.239 (0.018)**	–0.179 (0.014)**
Female	0.133 (0.033)**	0.038 –0.035	0.052 (0.013)**	0.012 –0.011	0.144 (0.035)**	0.046 –0.036	0.055 (0.013)**	0.015 (0.011)
Settlement and *Regional* dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month-of-Interview dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Corr. coefficient	—	—	—	—	0.708	0.708	0.708	0.708
Log-Likelihood	–4,441	–3,642	–4,441	–3,642	–6,424	–6,424	–6,424	–6,424
Sample Size	7,840	7,153	7,840	7,153	6,524	6,524	6,524	6,524

Notes: 1. Standard errors are reported in parentheses. 2. Significance levels of 5 percent and 1 percent are denoted by (*) and (**), respectively. 3. The reference category for education is vocational education. 4. The columns Socialism and Market reform denote preferences to return to socialism (*StopCourse* = 1) and to stop market reform (*StopMarket* = 1), respectively.

Table 6. The Effect of Education on Reform Preferences of Retirees

(Marginal probabilities)

	(1)		(2)		(3)	
	Socialism	Market Reform	Socialism	Market Reform	Socialism	Market Reform
Age5	–0.081	–0.03	–0.074	–0.047	–0.066	–0.043
	(0.041)*	(0.048)	(0.040)	(0.040)	(0.039)	(0.040)
Age7	0.03	0.018	0.023	0.010	0.022	0.004
	(0.032)	(0.031)	(0.027)	(0.029)	(0.027)	(0.029)
Primary	0.110	0.095	0.128	0.101	0.129	0.104
	(0.067)	(0.065)	(0.056)*	(0.059)	(0.056)*	(0.059)
Incomplete	0.006	–0.046	0.034	–0.033	0.034	–0.035
	(0.066)	(0.061)	(0.057)	(0.051)	(0.057)	(0.051)
Secondary	–0.187	–0.070	–0.153	–0.074	–0.156	–0.079
	(0.084)*	(0.081)	(0.075)*	(0.076)	(0.075)*	(0.077)
Specialized	–0.235	–0.256	–0.193	–0.232	–0.199	–0.234
	(0.065)**	(0.052)**	(0.062)**	(0.043)**	(0.061)**	(0.043)**
University	–0.325	–0.227	–0.309	–0.229	–0.317	–0.232
	(0.063)**	(0.042)**	(0.059)**	(0.037)**	(0.058)**	(0.037)**
Female	0.008	0.009	0.030	0.029	0.027	0.027
	(0.033)	(0.033)	(0.030)	(0.029)	(0.030)	(0.029)
Urban	0.001	0.020	–0.014	–0.001	–0.009	–0.017
	(0.071)	(0.048)	(0.065)	(0.049)	(0.067)	(0.052)
PGT	0.097	0.060	0.083	0.103	0.086	0.099
	(0.086)	(0.094)	(0.088)	(0.117)	(0.088)	(0.117)
Pension Amount	Yes	Yes	No	No	No	No
Household Income	No	No	Yes	Yes	No	No
Household Consumption	No	No	No	No	Yes	Yes
Region dummies	Yes	Yes	Yes	Yes	Yes	Yes
Month dummies	Yes	Yes	Yes	Yes	Yes	Yes
Corr. Coefficient	0.752	0.752	0.756	0.756	0.759	0.759
Log–Likelihood	–1,390	–1,390	–1,628	–1,628	–1,625	–1,625
Sample Size	1,328	1,328	1,555	1,555	1,555	1,555

Notes: 1. Standard errors are reported in parentheses. 2. Significance levels of 5 percent and 1 percent are denoted by (*) and (**), respectively. 3. The reference category for education is vocational education. 4. The columns Socialism and Market reform denote preferences to return to socialism (*StopCourse* = 1) and to stop market reform (*StopMarket* = 1), respectively.

The specification in Table 5, however, does not reveal if this outcome occurs because of the decline in the returns to experience during transition or the inherent resistance of old people to accept changes in their environment. We control for the income and asset position of the respondents and still find the presence of the age effect.[13] More specifically, younger respondents are again less likely to resist reform. These empirical findings can be easily reconciled with the presence of generational effects in the formation of people's attitudes and values.

[13]The estimation results are available upon request.

Table 7. The Effect of Industry and Enterprise Ownership on Reform Preferences

(Marginal probabilities)

	(1)		(2)		(3)	
	Socialism	Market Reform	Socialism	Market Reform	Socialism	Market Reform
Agriculture	–0.003	0.019	0.054	0.049	0.053	0.049
	(0.036)	(0.032)	(0.033)	(0.038)	(0.033)	(0.038)
Finance	–0.118	–0.095	–0.145	–0.114	–0.138	–0.110
	(0.046)**	(0.025)**	(0.041)**	(0.024)**	(0.042)**	(0.025)**
Administration	–0.026	–0.021	–0.128	–0.085	–0.123	–0.083
	(0.039)	(0.042)	(0.031)**	(0.034)*	(0.032)**	(0.033)*
Transportation	0.059	0.017	0.086	0.044	0.089	0.045
	(0.030)*	(0.026)	(0.027)**	(0.026)	(0.027)**	(0.026)
Education	–0.010	–0.014	–0.067	–0.065	–0.066	–0.063
	(0.025)	(0.024)	(0.023)**	(0.021)**	(0.023)**	(0.021)**
Service	0.020	0.011	0.059	0.035	0.049	0.027
	(0.027)	(0.025)	(0.024)*	(0.024)	(0.024)*	(0.025)
Private	–0.046	–0.017	–0.067	–0.036	–0.061	–0.031
	(0.021)*	(0.016)	(0.021)**	(0.016)*	(0.020)**	(0.016)
Foreign	0.011	0.004	–0.008	–0.010	0.009	0.004
	(0.053)	(0.054)	(0.056)	(0.053)	(0.055)	(0.054)
Unemployed	–0.016	0.023	–0.006	0.027	–0.039	0.001
	(0.034)	(0.028)	(0.032)	(0.027)	(0.031)	(0.027)
Income variables	Yes	Yes	No	No	Yes	Yes
Demographic variables	Yes	Yes	No	No	No	No
Regional dummies	Yes	Yes	Yes	Yes	Yes	Yes
Month dummies	Yes	Yes	Yes	Yes	Yes	Yes
Corr. Coefficient	0.691	0.691	0.727	0.727	0.720	0.720
Log-Likelihood	–3,834	–3,834	–4,051	–4,051	–4,007	–4,007
Sample Size	4,124	4,124	4,124	4,124	4,124	4,124

Notes: 1. Standard errors are reported in parentheses. 2. Significance levels of 5 percent and 1 percent are denoted by (*) and (**), respectively. 3. The reference category for sector of employment is manufacturing. 4. The columns Socialism and Market reform denote preferences to return to socialism (*StopCourse* = 1) and to stop market reform (*StopMarket* = 1), respectively.

Labor Market Characteristics. The importance of labor market characteristics, such as employment status, industry of employment and enterprise ownership, is considered next. We restrict the sample to include only those individuals who are in the labor force, and estimate three different specifications. Both income and demographic variables are used as explanatory variables. The estimation results are presented in Table 7. The coefficient estimates imply that individuals employed in the finance sector are consistently more likely to support the reform process than individuals employed in manufacturing. The magnitude of this effect is between 10 and 15 percent, depending on the specification. The effect of working in the private sector is analogous, although the results are significant only for the return-to-socialism specification.

Economic Gains and Losses. The most direct test of the economic hypothesis is to examine whether the individual preferences over reform are affected by changes in the economic well-being of respondents during the transition period. Round 8 of RLMS contains questions whether the respondents lived better, worse or the same 5 years before the interview, and whether they expect their standard of living to improve in the next 12 months. These variables are incorporated in our baseline regression. The marginal probability estimates are shown in column (1) of Table 8. In Table 8, the reference categories are *LivedSame* and *ExpectSame*. The results indicate that people who claim that they lived better before were approximately 11 percent more likely to be anti-reform than those who said that they lived in the same way. In addition, individuals who expect to have a lower standard of living in 12 months are 12 percent more likely to favor the return to socialism and 6 percent more likely to oppose market reforms.

The specifications in column (1) and column (2) of Table 8 are identical. The difference between the estimates of the four subjective variables comes from the fact that the sample in column (2) is restricted to include only those individuals who appear in Rounds 5–8 of the RLMS. The sample size decreases from 5,468 to 3,124 observations. We use the income and consumption data provided in the different rounds of the survey to construct absolute and relative measures of the real income and consumption changes experienced by individuals during the period from 1994 until 1998. The coefficient estimates of these variables tell us that individuals who moved down in the distribution of income between 1994 and 1996 are 6 percent more likely to support the return to socialism. The corresponding coefficient for relative consumption losses is also significant. Its magnitude suggests that individuals who moved down in the distribution of real consumption between 1994 and 1996 are 5 percent more likely to favor the return to socialism. Another result is that the absolute income loss between 1996 and 1998 has a significant positive effect on the propensity to prefer the old regime. A 10 percent decline in real income between 1996 and 1998 is associated with a 1 percentage-point drop in the support for market reform. Note that the August crisis occurred during this period.

Explaining Regional Reform Preferences

The estimation results from the previous section reveal that there is a considerable amount of regional variation in the attitude towards reform that cannot be explained by the characteristics of their residents, as the regional dummies are strongly significant in all specifications. In this section, our objective is to relate the varying degree of support for reform to a number of regional economic factors.[14]

[14]The relationship between regional economic performance and reform attitude has been analyzed in the literature. For example, Mau and Stupin (1997) establish that proreform regions have higher unemployment and nominal income than antireform regions. Van Selm (1998) finds some evidence that conservative regions experienced a stronger decline in industrial output than liberal ones. According to Grigoriev, Nagaev, and Woergoetter (1994), regions with higher income per capita, level of urbanization, and favorable industry structure were more likely to vote for proreform parties during the 1993 constitutional referendum.

Table 8. The Effect of Economic Gains and Losses on Reform Attitudes

(Marginal probabilities)

	(1)		(2)		(3)		(4)	
	Socialism	Market Reform	Socialism	Market Reform	Socialism	Market Reform	Socialism	Market Reform
Lived Better	0.109 (0.023)**	0.112 (0.026)**	0.087 (0.031)**	0.105 (0.029)**	—	—	—	—
Lived Worse	0.018 (0.042)	0.019 (0.037)	–0.013 (0.053)	–0.01 (0.039)	—	—	—	—
Expect Better	–0.105 (0.035)**	–0.019 (0.055)	–0.12 (0.053)**	0.042 (0.073)	—	—	—	—
Expect Worse	0.116 (0.019)**	0.059 (0.023)**	0.105 (0.024)**	0.054 (0.03)**	—	—	—	—
Relative income[a] gain, 1994–1996	—	—	—	—	0.001 (0.023)	–0.035 (0.025)	—	—
Relative income loss, 1994–1996	—	—	—	—	0.063 (0.026)**	0.029 (0.020)	—	—
Relative income gain, 1996–1998	—	—	—	—	–0.043 (0.030)	–0.031 (0.017)	—	—
Relative income loss, 1996–1998	—	—	—	—	0.02 (0.025)	0.008 (0.021)	—	—
Absolute income[b] gain, 1994–1996	—	—	—	—	0.004 (0.002)	–0.003 (0.002)	—	—
Absolute income gain, 1996–1998	—	—	—	—	0.000 (0.001)	–0.001 (0.000)**	—	—
Relative consumption[c] gain, 1994–1996	—	—	—	—	—	—	–0.005 (0.023)	–0.005 (0.021)
Relative consumption loss, 1994–1996	—	—	—	—	—	—	0.047 (0.029)**	0.008 (0.025)
Relative consumption gain, 1996–1998	—	—	—	—	—	—	–0.024 (0.026)	–0.019 (0.017)
Relative consumption loss, 1996–1998	—	—	—	—	—	—	0.03 (0.027)	–0.013 (0.019)
Absolute consumption[d] gain, 1994–1996	—	—	—	—	—	—	–0.006 (0.006)	–0.001 (0.002)
Absolute consumption gain, 1996–1998	—	—	—	—	—	—	–0.01 (0.007)	–0.007 (0.005)
Other Controls[e]	yes	yes	yes	yes	yes	yes	yes	yes
Region dummies	yes	yes	yes	yes	yes	yes	yes	yes
Month dummies	yes	yes	yes	yes	yes	yes	yes	yes
Corr. Coefficient	0.689	0.689	0.691	0.691	0.701	0.701	0.700	0.700
Log-Likelihood	–5,350	–5,350	–3,133	–3,133	–3,462	–3,462	–3,552	–3,552
Sample Size	5,468	5,468	3,124	3,124	3,428	3,428	3,501	3,501

Notes: 1. Standard errors are reported in parentheses. 2. Significance levels of 5 percent and 1 percent are denoted by (*) and (**), respectively. 3. The columns Socialism and Market reform denote preferences to return to socialism (*StopCourse* = 1) and to stop market reform (*StopMarket* = 1), respectively.

[a]Upward movement between income groups, constructed with respect to region-specific poverty line.

[b]Percentage change in real per adult household income. Nominal income is deflated by region-specific poverty line.

[c]Upward movement between consumption groups, constructed with respect to region-specific poverty line.

[d]Percentage change in real per adult household consumption.

[e]Age, education, settlement, and gender dummies.

The level of regional income, unemployment rate and industrial restructuring are considered in order to capture the macroeconomic conditions in the regions. The oil-abundant Khanty-Mansiiskij region has the highest nominal income per adult. The poorest region in our sample is the Kabardino-Balkar Republic, which is also one of the most conservative regions in the sample. The unemployment rate is below 6 percent in Nizhnij Novgorod, Kalinin Oblast, and Cheliabinsk Oblast, and above 15 percent in Pezenskaya Oblast, Kabardino-Balkar Republic, and Tambov Oblast. In our classification, the last three regions fall consistently in the antireform category. On the other hand, not all regions with low unemployment rates are proreform.

The impact of enterprise arrears, industry and ownership composition and foreign investment in the region is analyzed as well. The highest proportion of the working population affected by enterprise arrears can be found in the Kabardino-Balkar Republic as well. The level of foreign investment, measured by the fraction of the working population employed in foreign-owned enterprises, is non-negligible in Altaiskij Krai (Kur'inskij Rajon), Moscow City, Kalinin Oblast, Tatarstan, Krasnodar, Vladivostok, and Orenburg Oblast. All of these regions show no preference for stopping market reform. The share of workers employed in the service sector is used as a proxy for industrial structure. We also control for the ethnic composition and crime rate of each region. Finally, we construct a regional dummy for oil and natural gas extraction.

We include these region-specific variables in our probit regressions instead of the regional dummies, and correct their standard errors for clustering.[15] The advantage of our approach is that it takes into account the effect of compositional factors, that is, the age, education, settlement type and income of the population on the public support for reform in the given region.[16]

The bivariate probit coefficients of the regional variables are shown in column 1 and column 2 of Table 9. The corresponding marginal and joint probabilities are presented in the next four columns. Individual-specific covariates (same as in the previous subsection) are included in the regression, but their coefficients are not reported.

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[15]We also conduct our analysis using a two-step methodology, as in Di Tella, MacCulloch, and Oswald (2001). In the first stage, we regress *StopCourse* on the individual-level demographic and socioeconomic variables for each of the 38 regions in the sample. The mean residuals of these regressions are used as the dependent variable in the second stage of the estimation, which has the characteristics of the regions as explanatory variables. The main findings of this section are qualitatively the same using this estimation procedure.

[16]Previous studies have attempted to classify Russian regions into progressive (proreform) and conservative (antireform) and relate the political attitude of the population to regional economic performance and policies. On the basis of their enthusiasm for privatization, Hanson (1995) identifies as proreform the following regions: Stavropol, Tambov, Krasnodar, Rostov, Kemerovo, Omsk, St. Petersburg, and Nizhny Novgorod. In the paper by Mau and Stupin (1997), St. Petersburg, Novogorod, Samara, Rostov, and Chuvash Republic are progressive regions, whereas Ulyanovsk, Tatarstan, Voronezh, Krasnodar, and Stavropol are conservative regions. Using the results from the constitutional referendum on December 12, 1993, Grigoriev, Nagaev, and Woergoetter (1994) also identify proreform and antireform regions. In their classification, Tambov and Chuvash Republic are among the conservative regions. In contrast to these studies, we analyze the attitudinal differences towards reform at the regional level in a statistical framework that controls for effect of individual-specific demographic and socioeconomic factors.

Table 9. Reform Preferences and Regional Characteristics

	Probit Coefficients		Marginal Probabilities		
	Socialism	Market reform	Socialism	Market reform	Joint Probabilities[a]
Unemployment	0.974	0.185	0.373	0.059	0.131
	(0.965)[d]	(1.227)	(0.370)	(0.391)	(0.306)
Arrears	1.555	1.818	0.596	0.579	0.499
	–0.486	(0.675)**	(0.179)**	(0.212)**	(0.143)**
Foreign	0.821	1.984	0.315	0.632	0.459
	(1.346)	(2.230)	(0.511)	(0.709)	(0.484)
Private	0.001	0.046	0.000	0.015	0.009
	(0.403)	(0.467)	(0.154)	(0.149)	(0.117)
Service	–0.850	0.169	–0.326	0.054	–0.051
	(0.875)	(1.153)	(0.334)	(0.368)	(0.279)
Income	0.000	–0.001	0.000	–0.0002	–0.0001
	(0.0002)	(0.0002)**	(0.000)	(0.0001)**	(0.000)**
Ethnic	–0.001	0.006	–0.001	0.002	0.001
	(0.002)	(0.002)**	(0.001)	(0.001)**	(0.000)*
Fall	–0.001	–0.002	0.000	–0.001	–0.001
	(0.003)	(0.005)	(0.000)	(0.002)	(0.001)
Oil	0.098	1.347	0.038	0.429	0.267
	(0.332)	(0.426)	(0.127)	(0.133)**	(0.267)**
Crime	0.0000	0.0001	0.000	0.000	0.000
	(0.0001)	(0.0001)	(0.000)	(0.000)	(0.000)
Other covariates[b]	Yes	Yes	Yes	Yes	Yes
Corr. Coefficient	0.695	0.695			
Log-Likelihood	–6,480	–6,480			
Sample Size	6,508	6,508	6,508	6,508	6,508

Notes: 1. Standard errors are reported in parentheses, and are adjusted for clustering by region. 2. Significance levels of 5 percent and 1 percent are denoted by (*) and (**), respectively. 4. The columns Socialism and Market reform denote preferences to return to socialism (*StopCourse* = 1) and to stop market reform (*StopMarket* = 1), respectively.

[a]Joint probability of supporting the return to socialism and the end of market reform: Prob(*StopCourse* = 1 and *StopMarket* = 1).

[b]The regression contains the following individual-level covariates: age, education, settlement type, gender, income, assets, and month-of-interview dummies.

The empirical results suggest that residents of high-arrears regions are more likely to favor the return to socialism. The coefficient estimate of *Arrears* is positive and statistically significant in both equations.[17] Therefore, respondents from high-arrears regions are also more likely to oppose market reforms, even after controlling for their own socioeconomic status. In other words, the resistance to political and economic reforms is greater in regions with a higher proportion of employees who haven't been paid for their work.[18] The marginal probability estimate of *Socialism* indicates that a one-standard deviation increase in *Arrears* from

[17]We run the same regression in a sample that includes only employed individuals, and add dummies for receiving wages during the last month, industry, and enterprise ownership. The region-specific variable *Arrears* remains positive and significant.

[18]The results do not change if we incorporate pension arrears in our computation of *Arrears*.

its mean value of 0.20 to 0.30 raises the probability of favoring the return to socialism by 0.06 on average. The effect of the same change in enterprise arrears on the probability of opposing market reforms is almost identical in magnitude.

The coefficient of regional nominal income is negative and statistically significant in the market reform equation. Hence, residents of poor regions are more likely to oppose market reforms. The marginal probability coefficient of *Income* implies that a hundred-ruble increase in the nominal income of the region is associated with a decline in the probability of opposing market reforms of 0.02, on average. Note that the effect of nominal income is insignificant in the socialism equation.[19]

Contrary to our expectations, the regional unemployment rate, industry structure, decline in manufacturing sector, foreign investment and ownership structure have no significant effect on the likelihood that an individual would have a negative attitude towards reform. The coefficient estimate of the unemployment rate, however, becomes insignificant only after the variable *Arrears* is included in the regression.[20] Furthermore, the extent of privatization in the region, captured by the variable *Private*, has no significant effect on the probability of opposing the reform process in all specifications. The same is true for foreign investment. Hence, we cannot establish a link between the attitude of respondents towards reform and the privatization and foreign investment policies of their regions.

The estimate of the variable *Crime* from the market reform equation suggests that the residents of regions with lower crime rates are more likely to have proreform views. The proportion of ethnic Russians in the population, that is, the variable *Ethnic*, has a statistically significant effect on the probability of opposing market reform. The sign of the coefficient implies that an increase in the proportion of ethnic Russians in the population is related to a lower probability of supporting market reform. The size of this effect, however, is small. The oil production variable has a significant effect on the probability of giving an affirmative answer to the *StopMarket* question as well. The result that oil-abundant regions are more likely to be antireform is hardly surprising, since the pressure to reform may be smaller for oil-abundant regions.

The main finding of the empirical investigation in this subsection is that the degree of regional exposure to arrears is highly correlated with the reform attitudes of the residents of the region, that is, regions with a large proportion of workers who have not received in-kind or wage payments during the last month, are more likely to be antireform. This relationship emerges even after we control for other characteristics of the regions (income level, unemployment rate, etc.) and their residents. Our preferred explanation is that a given level of wage arrears causes the regional reform attitude to be proreform or antireform. However, we cannot rule out the possible endogeneity of these variables.[21]

[19]The effect of nominal income becomes insignificant only after we control for the individual characteristics of the respondents.

[20]The correlation coefficient between the variables *Arrears* and *Unemployment* is 0.61.

[21]The standard solution to this problem is instrumental variables. Unfortunately, finding valid instruments in our setting is a daunting task.

VI. Conclusion

This paper examined the empirical determinants of the reform preferences of Russian people. Our findings suggest that both economic and ideological factors play a role in shaping individual attitudes toward reform. The validity of the economic hypothesis is demonstrated in several ways. First, we establish that individuals who experienced a decline in their economic status during the transition period were more likely to favor the return of the old regime. Second, we show that the pattern of reform opposition across educational levels is consistent with the changes in the returns to education during transition.

Our empirical results imply that ideology is partly responsible for the observed pattern of reform preferences. The effect of age and university education on the support for reform is robust across specifications. This result holds even after we restrict our sample to include only retired individuals, that is, people who are out of the labor force. We find that the resistance to reform increases (almost) monotonically with age. This finding is not surprising if we recognize the importance of generational effects in the attitude formation.

Finally, we acknowledge the significance of regional economic factors in explaining the attitudes toward reform of the regions' residents. Taking into account the demographic and socioeconomic characteristics of the respondents, we find that people who live in high-arrears regions are more likely to oppose reforms.

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