



ISSN 1749-8279



World Economy & Finance
Research Programme
Working Paper Series

WEF 0019

**Economic Crisis and Political Participation in a Transitional Economy:
Evidence from Russia**

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April 2007

PRELIMINARY DRAFT-WORK-IN-PROGRESS
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Economic Crisis and Political Participation in a Transitional Economy:
Evidence from Russia

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Prepared for presentation at the International Studies Association Annual Convention,
Chicago, 28 February – 4 March, 2007.

¹ This paper has been written with the support of the Economic and Social Research Council's grant RES 000-156-0016, *The political economy of pro-poor adjustment*, within the Council's World Economy and Finance programme, and we are grateful to the ESRC, and to our colleagues Ben White and Jean Grugel, for their support.

1. Introduction

The experience of countries adjusting in the wake of the global crisis of 1997-2000 has awakened many debates related to the political economy and social costs of adjustment. Amongst these, the experience of Russia is particularly controversial, both because of the great severity of the shock experienced by a large number of Russians during the process of *perestroika*, and because of the political consequences, which in many provinces have involved street protests and demonstrations and in some, also violence and demands for secession (Giuliano 2006). These political consequences are relevant to the general question of the political feasibility of adjustment in the circumstances of the present decade, which is examined in several papers within our research project (e.g. Mosley 2007a, 2007b).

In this paper, we examine within this context political participation and wage inequality during the 1998 financial crisis in Russia. We use two household survey data sets. The VTsIOM household survey dataset, conducted in 1998 and 1999, was used to analyze individuals' response patterns to escalating economic hardship. Data from the Russian Longitudinal Monitoring Survey (RLMS) was employed in our analysis of the welfare impacts of the crisis.

We address two key questions. Firstly, we attempt to identify major factors behind individuals' propensity to take part in a political protest. In particular, we look at what determines individual support for reform and whether individual propensities change with the targeted audience. Secondly, we attempt to determine who are the winners and losers from the crisis, in the spirit of the earlier analysis of Brainerd(1998).

In particular, we analyse whether wage inequality widened during the crisis and whether wage discrimination worsened. These questions are of interest for several reasons. Firstly, the pace and extent of the crisis had a dramatic impact on Russia's economy which, in turn, may have influenced political mobilization motivated by claims for policy reversals. Secondly, if financial crisis generated wage inequality, it is important to identify the extent, pattern, and nature of the wage inequality for effective policy formulation.

The structure of this paper is as follows. In Section 2, we examine the economic crisis. In the next section, we introduce the data set and variables used for the analysis. Section 4 presents our methodology and Section 5 provides the empirical results. Section 6 concludes the paper.

2. Background

Following failed attempts aimed at steering Russia away from the economic crisis which involved dismissal of the Cabinet and \$22 billion assistance package from the IMF, on 17 August 1998, the Russian Government was forced to default on its private domestic debt, devalue the rouble, and announce a 90-day moratorium on foreign debt repayment. Two major exogenous factors induced these drastic measures. Firstly, the Asian financial crisis which started in April 1997 and hit Russia in the following year. Secondly, the sharp fall in oil prices by nearly 40% (from \$23 per barrel in mid-1997 to \$11 per barrel in mid-1998), with a parallel drop in prices of non-ferrous metals by between 20% and 40%, contributed to a decline in revenue from Russia's main export staples, and thence to the economic downturn.

The August default was preceded by major setbacks on the home front. By the end of 1996, with output falling by 42% since 1991, Russia's federal budget deficit had risen to nearly 8% of GDP and federal tax revenues had fallen from 28.4% of the GDP to 23.7% in 1997 (Lopez-Claros and Alexashenko, 1998; Desai, 2000). The conditionality attached to the associated IMF standby operation, aimed at reducing inflationary pressure, forbade borrowing from the Central Bank of Russia (CBR) and provided loans which ensured the fixed exchange rate regime. To finance the increasing budget deficit, the Russian Government turned in May 1993 to short-term treasury bills. The gross issues of the Russian treasury bills (GKO), consisting of very short-term maturities (1-3 months), increased significantly in 1996. The GKO market boomed, with yields averaging around 40% in 1996-97. The policy of exchange rate stability, which led to an overvalued rouble, together with the partial removal of restrictions on foreign capital flows, attracted foreign investors, as well as domestic investors who were borrowing abroad to invest in the GKO market. In mid-1997 to mid-1998, falling commodity prices hit Russia's balance of payments and, in turn, contributed to the fall in the GKO market. As the CBR continued to support the rouble, the first \$4.6bn tranche of the 1998 IMF assistance package which came in July in support of the fixed exchange rate disappeared in two weeks (Desai, 2000). The inability of the government (Russian commercial banks) to redeem the foreign share of the GKO-OKZ securities (private foreign debt) which accounted to \$6bn (\$16bn) become evident and the Russian Government opted for an outright default (Desai, 2000). As a result, the rouble depreciated from 6 per \$US in August 1998 to 21 in December 1998.

By 1998, Russia's output had fallen by 45 per cent in relation to the start of *perestroika* in 1990?, while unemployment had risen to 13.2 percent, its highest post-

transition level, with youth (aged 15-24) unemployment levels reaching 26.8 percent (UNICEF, 2005). The crisis imposed an additional shock on to an already declining economy, with average household income falling by 20 percent in real terms, the share of wages in total income falling from 41 percent to 36 percent in relation to 1996 data (Lokshin and Ravallion, 2000), and dramatic deteriorations in health and mortality rates through the decade (Brainerd 2001, Stillman 2005). The 1998 crisis led to a rise in the incidence of wage arrears, which, as our subsequent analysis suggests, may partly be responsible for the rising wage inequality. Lehman, Wadsworth and Acquisti (1999) show that around 65 percent of the workers were owed money at the height of the problem in November 1998. Mitra and Yemtsov (2006) argue that wage inequality was a major driver of overall inequality, with the Gini index for monthly wages rising to around 0.46 in 1998 (Figure 4). Following the crisis, the gender pay gap widened, with the substantial part of the wage gap explained by discrimination. Gerry, Kim and Li (2004) show that 18-34 year old women experienced the largest discrimination following the 1998 crisis. Welfare indicators from the RLMS show that the poverty rate increased from 22 percent in 1996 to 33 percent in 1998 (Lokshin and Ravallion, 2000).

With growing wage arrears and fading confidence in Russia's financial stability as the Asian crisis peaked in October 1997, investors pulled back from the GKO market. The CBR was unable to halt the outflow of capital, which reached \$1.8bn in January 1998 (Buchs, 1999). In light of the Government's failure to keep the promise it made to clear public sector wage arrears by the end of 1997, public protests and strikes escalated in the first quarter of 1998 which eventually led to the dismissal of Prime Minister Chernomyrdin for failure to solve the wages problem.

In sum, deficit financing through the medium of the GKO, combined with the East-Asian crises and a fall in the commodity price was one of the main apparent causes of the crisis. Yet inherent state of economy and political system was susceptible to the external factors (Perotti, 2002). Asset dollarization, weak fiscal discipline, capital flight, state capture (heightened following 1996 Presidential elections), dubious supervision policy of Russia's commercial banks, and IMF supported exchange rate regime which led to overvalued rouble played a significant role.

3. Data

In the first part of the analysis we use the VTsIOM data set. The survey for the data was conducted by the Russian Centre for Public Opinion Research (or VTsIOM, its Russian acronym) in January 1998, May 1998, September 1998, January 1999, May 1999, September 1999 and January 2000. The survey covers around 2,500 individuals. Interviews were conducted in all of the country's 11 major economic-geographical regions, plus Moscow city. The sample survey was randomly selected, based on multistage stratified sampling. This ensured that each individual had an equal opportunity of being selected. Some of the territorial-administrative regions in the South Caucasus (due to the military conflict) and in the Far North (due to remoteness) were excluded.

Data were collected, among other things, on a range of basic demographic, health and education indicators, labour market behaviour and outcomes, voting behaviour, attitudes toward reform and willingness to participate in political protest. We do not have information on the actual number of years of schooling. Education is coded by respondent's completed years of schooling. The dependent variable used in the earnings equations is the log of monthly cash earnings received from the main job.

The VTsIOM survey does not ask questions about hours worked. It is important to note that the use of the monthly wage variable may be problematic since it may be distorted due to possible differences in the average hours of work of male and female workers.

In Table 1, we present summary statistics for the VTsIOM sample. To focus on working age adults, we exclude students, children who are less than 16 years of age, disabled and pensioners. In addition, there are some respondents who did not report their wage, education, or household composition. These observations are also excluded from the analysis. Our empirical analysis of earnings is restricted to the sample of individuals whose wage was positive at the time of the survey.

The second data source is Rounds 8 and 9 of the RLMS, conducted in the autumn of 1998 and 2000. The RLMS is a nationally representative longitudinal panel of around 4,000 households. We focus on individuals who completed the adult questionnaire and use the cross-sectional feature of the data. Thus we exclude individuals who moved from the original sample. Our final sample consists of 7,894 individuals in Round 8 and 7,568 individuals in Round 9.

To focus on working age adults, we exclude students, children who are less than 16 years of age, disabled and pensioners. In addition, there are some respondents who did not report their wage, education, or household composition information. These observations are also excluded from the analysis. Our empirical analysis of earnings is restricted to the sample of individuals whose wage was positive at the time of the survey. The sample retained includes around 4,000 individuals between the ages of 16 (the school-leaving age) and 60 (55) in the case of men (women), who also report a wage from the main job (60 is the state retirement age for men and 55 is for women).

The dependent variable used in the earnings equations is the log of hourly monthly wages received from the main job net of payroll and income taxes.

4. The Model

We assume that an individual's choice of whether to be politically active is dependent on an economically rational comparison of the expected utility from the two possible outcomes, which can be viewed as the decision to become involved in political action protesting against the government ($g = 1$) and non-participation in such action ($g = 0$). The separate utilities (U) for the two outcomes are approximated as:

$$U_1 = \alpha_1 + \beta_1 X + u_1 \text{ for } g = 1 \quad (1)$$

and

$$U_0 = \alpha_0 + \beta_0 X + u_0 \text{ for } g=0$$

where α and β are the parameters to be estimated; X_i is a set of explanatory variables which influence utility; (u_1, u_0) are independently distributed with mean zero and variance σ^2 .

In this model, individuals become politically active if $U_1 > U_0$. Thus, the probability of selecting g can be expressed as:

$$\begin{aligned} P(g = 1) &= P[\alpha_1 + \beta_1 X + \varepsilon_1 > \alpha_0 + \beta_0 X + \varepsilon_0] \\ &= P[(\alpha_1 - \alpha_0) + (\beta_1 - \beta_0)X > \varepsilon_0 - \varepsilon_1] \\ &= F((\alpha_1 - \alpha_0) + (\beta_1 - \beta_0)X) \end{aligned} \quad (2)$$

where $F(\cdot)$ is the operator for the CDF; the parameter, α , indicates the utility level attached to the state when $g=1$ relative to $g=0$; the parameter, β , represents the effect of the covariate on the utility.

Following McFadden (1974), if the error terms in (1) are assumed to be independent and identically distributed, their difference (between different outcomes) follows a logistic distribution, so that $F(\cdot)$ in (2) can be expressed as the CDF for the logistic function $\Phi(\cdot)$. Thus, a logit model is applied to obtain the log odds ratios in our analysis of utility- maximizing behaviour.

Before we proceed to estimating the wage inequality, we assume that individual earnings are determined subject to the following specification:

$$\ln Y_i = \beta X_i + \varepsilon_i \quad (3)$$

where $\ln Y_i$ is the natural logarithm of the observed wage for individual i , X_i is a vector of observed characteristics which includes an expanded set of explanatory variables and β is the corresponding vector of coefficients to be estimated.

Eq. (3) is estimated using an OLS regression. The specification of the earnings equation is a simple human capital model with a basic set of regressors which includes conventional human capital characteristics, personal characteristics, occupational characteristics as well as a variable that captures labour market conditions.

5. Empirical Evidence

Poverty and Wage Inequality

Table 1 suggests that the initial dispersion at the top of the wage distribution was similar for both genders. However, there was a significant rise in the overall wage distribution in May 1998. For men, the 90th to 10th decile ratio increased significantly to 3.46 log points and further to 3.75 log points in January 1999. For women, the dispersion in the top half of the distribution rose from 3.261 but then fell to 1.47 log points in January 2000. The 90th- to- the- median ratio remained essentially unchanged. For men, the dispersion at the bottom of the tail narrowed. For women, the dispersion narrowed but then rose to 0.79 log points. In sum, the right tail of the distribution significantly thickened for men and women immediately after the crisis. Changes in the returns to human capital may partly explain the increase in inequality. If returns to human capital were affected by the crisis, we should expect to see a widening of the wage distribution if the highly skilled have gained whereas the less skilled have lost. In addition, these findings may be explained by imperfect wage indexation.

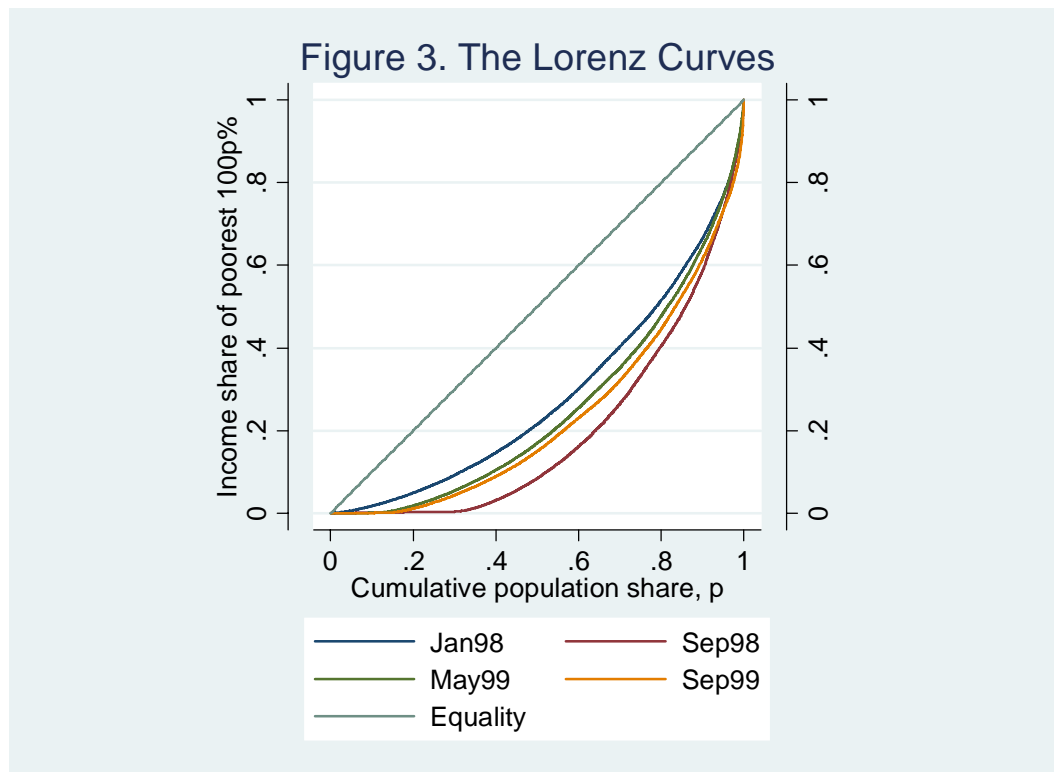
Table 1. Distribution of the Log Wage, Jan 98 through Jan 1999

	Jan 98	May 98	Sep 98	Jan 99	May 99	Sep 99	Jan99
<i>Men</i>							
90-10	1.372	3.459	3.459	3.459	3.644	3.644	3.751
90-50	1.133	1.154	1.188	1.117	1.159	1.159	1.193
50-10	0.826	0.334	0.343	0.323	0.318	0.318	0.318
Variance	0.646	4.394	5.092	3.750	3.077	3.900	3.418
<i>Women</i>							
90-10	1.353	3.263	3.263	3.358	3.372	3.459	1.477
90-50	1.121	1.154	1.197	1.176	1.131	1.163	1.170
50-10	0.828	0.354	0.367	0.350	0.335	0.336	0.793
Variance	0.589	3.064	4.089	2.638	2.321	2.717	2.177
<i>All</i>							
90-10	1.377	3.358	3.411	3.459	3.459	3.561	3.644
90-50	1.148	1.153	1.223	1.174	1.137	1.150	1.159
50-10	0.834	0.343	0.358	0.339	0.329	0.323	0.318
Variance	0.679	3.611	4.507	3.142	2.654	3.245	2.742

Source: Own estimations based on VTsIOM data.

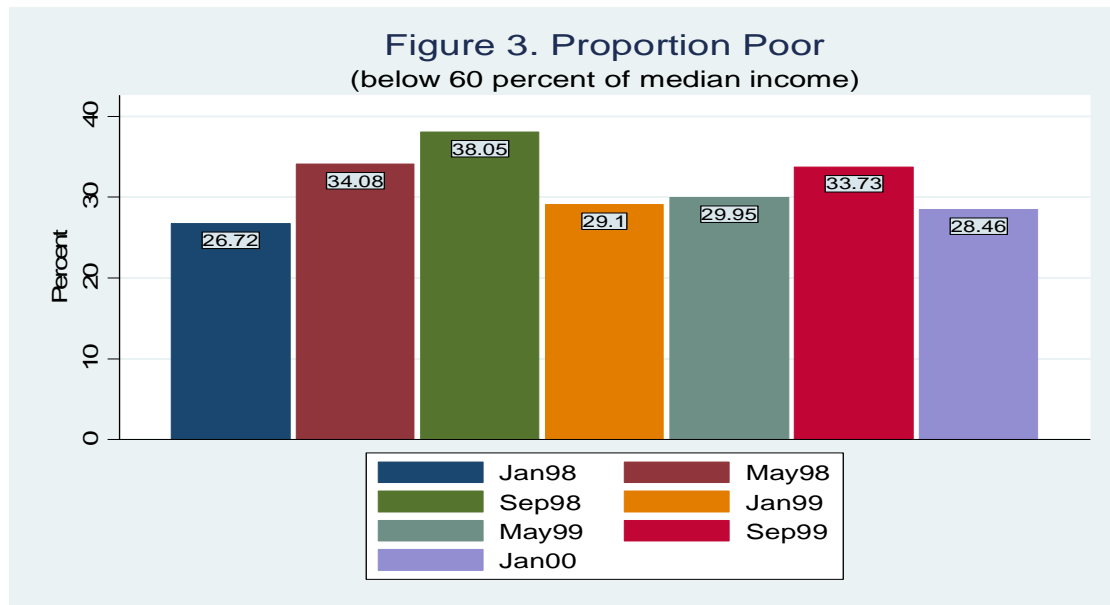
Lorenz curves representing the distribution of income between January 1998 and January 2000 are presented in Figure 1. They show that income inequality has risen, and

that the curve for September 1998 was the furthest from the line of equality, as compared to the curves for May 1999 and September 1999: in other words that there was a sharp increase in income inequality in the immediate post-crisis period, followed by some lessening of inequity thereafter.



The percentage of the population below the standard Russian low-income threshold (60 percent of the median income) showed dramatic changes. The proportion of people below this low-income threshold grew by 11 percent between January and September 1998. Data from January 2000 shows that there was a 10% decline in the

percentage of people living with income below 60 percent of median income.



Participation in political protests

In Table 2, we present our estimates of participation in political protest actions for the period January to May 1998, just before the crisis. The MNL model allows us to determine whether explanatory variables determine the likelihood that a given outcome will occur. Columns 1-3 of Table 2 are the marginal relations, typically referred to as "marginal effects," given by the partial derivative of the probability of the outcome occurring with respect to the explanatory variable. The marginal effects indicate the percentage point changes in the probability of full participation attributable to a unit change in each independent variable as calculated with all other independent variables at their sample means. The MNL models for the protest analyses are trinomial, in that only three outcomes are possible (e.g., the individual will participate, not participate, and uncertain).

Column 1 shows that participation in protest action is:

- reduced by marriage, by age and by education (the younger, the unmarried and the less educated are more likely to participate in a protest).

- decreased by a prior decision to vote for Yeltsin in 1996 (in other words, those whose votes were reformist were less likely to engage in protest actions)
- increased by a high level of wage arrears, incorporating the personal bitterness of those who had not been paid;
- Strongly correlated with those with strong fears of future inflation, suggesting that protest is heavily associated with pessimism about future economic prospects.

In addition, individuals living in the regions outside Moscow show a higher propensity to participate in political action against local governments but a smaller likelihood of protest action against the president and the federal government. This may be related to their perception of the relative risks associated with different behaviours.

Table 2. Marginal Effects of Protest Participation Decisions (Jan98-May98)

Dependent Variable:	LOCAL	PRESIDENT	GOVERNMENT
Age	-0.0023115***	0.0007426	-0.0007499
Married	-0.0498023**	-0.0778002**	-0.0762147***
North-Western	0.1740956***	0.0619314	0.0504222
Central	0.2211768***	0.000688	-0.0005778
Volga	0.0982122**	0.0360389	0.0214354
Black Earth	0.1086295**	0.1058264**	0.0473834
Povolzhskiy	0.0581564	-0.0366064	-0.0013264
North Caucasus	0.0924265**	0.1353635***	0.068773*
Ural	0.1650153***	0.0481307	-0.062385**1
West Siberia	0.1282425***	0.1412241***	0.0791122**
East Siberia	0.2695659***	0.1346907***	0.1003041**
Far East	0.2950344***	0.1440298***	0.0967296**
Voted Yeltsin	-0.0671998***	-0.3110281***	-0.2130521***
Public Sector	0.0234965	0.0039667	0.0052319
Male	0.0201288	0.0427011**	0.0483424***
Years of Schooling	-0.0077959***	-0.0053348	-0.0071521
Managerial Job	-0.016096	0.0136038	-0.0027049
Arrears	0.0901917***	0.1715025***	0.0737011***
Expected Inflation	0.0996641***	0.1248748***	0.1357525***
Dependent Ratio	-0.0107441	0.0069531	0.000774
Improved Status	-0.056136***	-0.1224278***	-0.1322447***
<i>N</i>		3,135	

The analysis of Table 3, which applies the same analysis to the post-crisis period September 1998 – May 1999 (after a sharp increase in inequality, as our earlier analysis showed) discovers a similar pattern of results, but with two interesting novelties: managerial status, which is insignificant in 1998, becomes negatively associated with protest in 1999 (post-crisis, managers appeared to have more fear of political involvement) and improved status, which is significant in 1998, becomes insignificant in 1999.

Table 3. Marginal Effects of Protest Participation Decisions (Sep98-May99)

Dependant Variable:	LOCAL	PRESIDENT	GOVERNMENT
Age	-0.0016406***	-0.0001049	-0.0031179***
Married	-0.0452842**	0.0161996	-0.0342688
North-Western	0.4008417***	0.1155422***	0.0345371
Central	0.2456677***	0.0474512*	0.0003927
Volga	0.1151917**	0.1196945***	0.1013207**
Black Earth	0.3328971***	0.0812109**	0.0729365
Povolzhskiy	0.2353181***	0.0556575*	0.0444467
North Caucasus	0.1370633***	0.0945209***	0.0508271
Ural	0.2283733***	0.0589728*	0.0451912
West Siberia	0.3256738***	0.092494***	0.1577768***
East Siberia	0.4135337***	0.172617***	0.1762922***
Far East	0.4751094***	0.2207497***	0.2811258***
Voted Yeltsin	-0.0684409***	-0.1791069***	-0.0906516***
Public Sector	-0.0149953	0.0358737	-0.0039197
Male	0.024366	0.0290456*	-0.0030436
Years of Schooling	-0.0026973	-0.0050424	-0.0094166***
Managerial Job	-0.0449865**	-0.0298281	-0.0289071
Arrears	0.0692185***	0.0791331***	0.0712413***
Expected Inflation	0.0579498***	0.1155863***	0.0637164***
Dependent Ratio	-0.0207692	-0.081657**	-0.0086913
Improved Status	0.0094908	0.0318046	-0.0109922
<i>N</i>		4,667	

All these effects persist forward into 2000 (Table 4) with the exception that improved status becomes negatively significant again. The general pattern is one of those who have most to lose being least likely to protest.

Table 4. Marginal Effects of Protest Participation Decisions (Sep99-Jan00)

Dependant Variable:	LOCAL	PRESIDENT	GOVERNMENT
Age	-0.0018447***	-0.0006829	-0.0033377***
Married	-0.0077699	-0.0456299*	-0.035926**
North-Western	0.2002495***	0.0627182**	-0.0100697
Central	0.2443966***	0.0759936***	-0.0172481
Volga	0.0218448	0.0074176	-0.0481866*
Black Earth	0.27046***	0.0769527**	0.0126227
Povolzhskiy	0.0873528***	0.0715351**	0.0069953
North Caucasus	0.140773***	0.0602187**	0.0362908
Ural	0.2093777***	0.0850504***	0.0134622
West Siberia	0.0840042***	0.1187945***	0.0479219
East Siberia	0.1817471***	0.1705126***	0.0418214
Far East	0.2253818***	0.0897273**	0.0585288*
Voted Yeltsin	-0.0508213***	-0.2146185***	-0.0988628***
Public Sector	-0.0002693	0.0293346	0.030284*
Male	0.0229733**	0.0095956	0.0089649
Years of Schooling	-0.0097642***	-0.0069322**	-0.0112326***
Managerial Job	-0.0075924	-0.0646452***	-0.0590877***
Arrears	0.0302931*	0.0790676***	0.0318364*
Expected Inflation	0.0545896***	0.0905081***	0.0595865***
Dependent Ratio	-0.0203362	-0.0501194*	-0.0643779**
Improved Status	-0.0157257	-0.0994842***	-0.1048619***
<i>N</i>		3,095	

5. Conclusions

This preliminary analysis suggests that the Russian financial crisis of 1998 imposed a further increase in inequality and poverty on to a process which had already (Brainerd, 1998) taken Russia from one of the most equal societies in the world to one whose levels of inequity surpass those of the United States. There was a slight reversion to lower levels of inequity and poverty after the peak of the crisis in September 1998, but not going back as far as pre-crisis levels.

We then examined the determinants of political protest in the period during and immediately following the crisis. We found that, in general, those most likely to protest are those who have least to lose – those who are unmarried and without managerial jobs and with relatively low economic status. However, past bitter experience of wage arrears and expectations of future crisis predispose towards protest. Finally, remoteness from Moscow - in Siberia, the Far East, and the North Caucasus – also is associated with a propensity towards protest. (Can this be related to later separatist movements? – see Giuliano, 2006)

Subsequent drafts of this paper will seek to explore the correlation of protest with poverty, unemployment and ill-health themselves, to embed the analysis within a framework of simultaneous causation, and to link the participation in political protest analysed here with political developments in Russia subsequent to 2000.

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Appendix. OLS Estimated Earning Equations

Period:	Jan98-May98	Sep98-May99	Sep99-Jan00
Dependant Variable:			
Age	-0.0273073	0.0346397	0.0456504
Age ²	0.0003534	-0.0004802	-0.0005636
Married	-0.1360672	0.0927674	0.0783486
North-Western	-0.5722448***	-0.3983671***	-0.2130264
Central	-0.6442835***	-0.8452298***	-0.3114399**
Volga	-0.7800852***	-0.7465859***	-0.4112161**
Black Earth	-0.9095893***	-0.9761594***	-0.9204116***
Povolzhskiy	-0.6549957***	-0.8849477***	-0.6362255***
North Caucasus	-0.4647329***	-1.195144***	-0.6686659***
Ural	-0.8119889***	-1.063455***	-0.671162***
West Siberia	-0.5014036***	-0.7566903***	-0.4977792***
East Siberia	-0.7812843***	-1.063861***	-0.4387063**
Far East	-0.5826589***	-0.4339978***	-0.5566319***
Sector Public	-0.5113453***	-0.7880301***	-0.3778866***
Male	0.2924866***	0.2130652***	0.2850263***
Manager	0.6176561***	0.2873205**	0.6966692***
Specialist	0.1188922	0.1503279*	0.1466798
Years of Schooling	0.0649929***	0.048197***	0.0797769***
Constant	6.463872***	5.7154	4.915226
R ²	0.103	0.097	0.082
N	1833	3039	1869