Born in Transition: The Effect of Economic Shocks in Early Childhood on Health and Educational Outcomes

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Abstract

This paper estimates the effect of economic shocks that affect families with young children on children's health, educational and behavioral outcomes in adolescence. Transition period in Russia provides a natural experiment setting for estimating this effect. During the economic turmoil of early transition many people lost their jobs, experiences salary declines or occupational downgrading. These individual labor market shocks were mainly caused by the structural changes in the economy. Analyzing household survey data from Russia I find that children who were under the age of five and whose parents were negatively affected during the early transition have poorer health in adolescence and are less likely to have completed high school. For the comparison group – children who were at the school age during the early transition – there is an effect on educational outcomes and risky behaviors but not on health. Absence of a father in a family during the early transition years has a negative health effect only for the younger age group. I also find differential effects for boys and girls, by mother and father.

Keywords: economics shocks, early childhood, health, education

JEL Codes: J13, J24, I12

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1. Introduction

The effect that various influences during early childhood years (usually under the age five) have on the child development, human capital accumulation and economic and social outcomes later in life are increasingly studied by the economists. Existing studies show that the influence of certain factors during prenatal period and early childhood may have long-lasting negative effects on individual health, education and other outcomes. Such factors include infections, poor nutrition amount and quality, poor ecological conditions and economic shocks (see the recent survey by Almond and Currie 2010).

This study aims to estimate the effect of the negative labor market events faced by the parents of a child under age five on his/her outcomes later in life. The adverse labor market events may include loss of job, unemployment, salary decline, forced change of job and occupation, occupational downgrading. However, observed individual labor market shocks may be correlated with the unobservable characteristics of parents that also affect their children. In this case the estimate may be biased. The economic transition in Russia provides a unique natural experiment setting that allows estimating the causal relationship.

During the first years of transition in Russia economic decline was dramatic. Gross domestic product had fallen by 40 percent during the first half of 1990s. Unemployment had risen from non-existent to almost 10 percent in 1995. The structural shifts in the economy have lead to a large scale labor reallocation across sectors. Employment in the industry declined while employment in the new sector of the economy – market services – surged. About 42% of employed people permanently changed occupations between 1991 and 1998 (Sabirianova 2002). Another specific feature of economic transition in Russia was the large scale non-payment of wages by enterprises to their workers. Consequently, many families in Russia experienced negative labor market events, such as job loss, salary decline or non-payment and occupational downgrading, caused by the turmoil of transition and fundamental structural changes in the economy. Children born during the early transition years are likely to be affected as well.

In order to estimate the effect I use the data from the panel survey of households in Russia for 1994-2009. In 2006 round people were asked a number of questions concerning their labor market experiences during the transition since 1991. I select individuals who were born in 1989-1995 – their early childhood and in many cases prenatal period coincided with the initial stage of transition. I estimate the effect of labor market shocks experienced by their parents in 1991-1995 on their health indicators and educational outcomes in 2009 when they were at the age of 14 to 20. I also conduct the same analysis for the comparison group of people who were born in 1981-1986 and who were at the school age during 1991-1995.

The results show that children whose families were negatively affected during the early transition when they were under age five have poorer health in adolescence and are less likely to have completed high school. For the comparison group – children who were at the school age during the early transition – there is a negative effect on educational outcomes and increased incidence of smoking and alcohol consumption but no effect on health. Absence of a father in a family has detrimental effect on health for those who were young children during the early transition but not for those who were of school age at that time. Thus, it is shown that in terms of health children under age five are more vulnerable to the economic shocks to their families than older children, particularly in single-parent families.

There may be different mechanisms behind these effects. Labor market shocks affect two inputs that parents invest in their children's development: money and time. Unexpected income decline may result in worse nutrition and reduced investments in education. Forced change of job and additional work result in increased working time and less time spent with children. Stress of economic hardships experienced by parents may directly affect psychological conditions of children. In addition stress may lead to more smoking and alcohol consumption by parents which can be later taken up by children. Finally, work-related stress and income decline may affect health of a mother before or during pregnancy which translates into the worse health of a child. This may be one of the reasons why we find more pronounced health effects for children born during transition.

This paper aims to contribute to the small but growing literature on the effect of economic shocks in early childhood on various outcomes later in life. There are some studies showing negative effect of family income decline during childhood on life expectancy and health in adulthood. Banerjee et al. (2007) shows that shocks to the family income around time of birth affect the person's height in adulthood, which is in turn related to the economic success. There are studies of the effect of parent's job displacement on the labor market outcomes of children: Oreopulos (2005) finds negative effect for Canada, Bartberg et al. (2008) find no effect for Norway. Siedler (2011) shows that children whose parents were unemployed are more likely to express radical political attitudes later in life. However this area is still under-explored, yet very important and potentially relevant for the design of early intervention policies.

There is vast literature on the intergenerational transmission of human capital (see the surveys in Solon 1999, Black and Devereux 2010). Part of this literature looks at the effect of parental income on the outcomes of children. Many of the studies find that children's outcomes later in life are more sensitive to the parental income during early childhood than during late childhood. However, it is usually the level of income that is considered in these studies. In contrast, I am looking at the effect of the unexpected shocks to parents' income and employment.

Another strand of related literature includes papers that study the effect of economic crisis during the transition in Russia on various aspects of household well-being (Stillman 2001, Stillman and Thomas 2004, Padma and Idson 1998, Guariglia and Kim 2003).

The rest of the paper is organized as follows. Section 2 provides background information on the economic transition in Russia and describes the individual labor market histories using survey data. Section 3 describes the empirical model and variables used in the analysis. Section 4 presents the empirical results. Section 5 concludes.

2. Economic transition and individual labor market shocks

The structure of the Russian economy underwent dramatic changes during the transition period. After price and trade liberalization in the early 1990s, different sectors of the economy experienced differential demand shocks depending on the degree of their technological backwardness and the competitiveness of their products with imports. The decline in total GDP amounted to almost 60% between 1990 and 1996 (see Figure 1). This decline was not accompanied by a rise in unemployment to the same extent (see Figure 2). Instead, labor market adjustments were mostly through declining real wages, wage arrears and various forms of underemployment (see Gimpelson and Kapeliushnikov 2011, Gimpelson and Lippold 2001; World Bank 2003).

At the same time, economic restructuring was accompanied by major labor flows across sectors and occupations. The aggregate reallocation of labor across major sectors in the economy is illustrated in Figure 3. Employment in industry and construction declined by 40% from 1990 to 1998. Employment in agriculture also fell after 1994 and declined by 20% from 1990 to 2002. In contrast, employment in the market services sector, which was underdeveloped in the Soviet economy, had increased by 40% by 2002, while employment in non-market services (mainly education, medicine and state governance) remained virtually unchanged. Thus, labor was reallocated from industry and agriculture to the market services sector.

Within the industrial sector, which comprised 30% of total employment in 1990, there were also different trends in output and employment as some industries suffered more severe demand shocks than others. Figure 4 illustrates the extent of the output decline by sector. The output declined least in the energy and fuel sector (between 20% and 40% of the 1990 level) while the deepest decline was observed in the textile industry (almost 90% decline by the end of the 1990s).

Such a decline in the industrial sectors and the massive shift of labor into the services sectors must have affected labor market position of the large part of the working population. The individual-level data from the Russian Longitudinal Monitoring Survey provide information on

individual labor market histories. This is a panel household survey that is conducted annually starting from 1994 (with the exception of 1997 and 1999)[2]. The survey collects a wealth of information on various characteristics of individuals and families, including data on person's work, education and health.

In 2006 round of RLMS survey respondents were asked a number of retrospective questions about their labor market history since 1991[3]. In particular, the following questions were asked:

- What were the three worst years of your professional activity in the last 16 years (*that is, during 1991-2006*)?

Tell me, please, from 1991 till now has it happened that you:

- Lost a place of work, because the enterprise where you had been working closed or conducted sudden reductions in staff members
- You had to change a place of work for another permanent job, which didn't correspond to your qualifications and you didn't like it
- You had to agree to additional work, which didn't correspond to your qualifications and you didn't like it
- Your salary decreased substantially

Respondents were asked in which years these events happened to them. Figure 5 shows the incidence of these events in 2006 sample by year. It shows that during the early, most destructive, years on transition the incidence of the negative labor market events was the highest. The worst year by almost all indicators was 1993.

Using these questions I construct five indicators of the negative labor market events - loss of the job, occupational downgrading, additional work, salary cut, and worst working years. Each of these indicators is equal to one if the event happened to a person at least once during 1991-1995. I take this period as it was the period of the deepest economic decline and the most profound structural shifts in the economy. The individual changes in the labor market position during this period were most likely to be exogenous.

Table 1 shows the incidence of labor market shocks experienced during the early transition in 2006 sample, separately for men and women. 11% of the total sample lost jobs due to plant closure or downsizing, almost 8% had to downgrade to a less qualified job, and 12.5% faced substantial salary cuts. Almost 20% had their worst working years over the period 1991-

[2] The description of the RLMS survey and the actual data can be found here: http://www.cpc.unc.edu/projects/rlms-hse

[3] These questions were asked only to people who were born before 1978, e.g. those who were of the working age in the beginning of 1990s.

2006 during 1991-1995 (37% say that there were no such years). For men the incidence of economic shocks is only slightly higher than for women.

Another acute work-related problem that people faced during the transition is wage arrears (non-payment), which was wide-spread during 1990s. As RLMS data show 40% of employees experienced wage arrears in 1995, 60% - in 1996, with average delay in payment of about 3 months. I construct a measure of wage arrears equal to the number of months for which wage was not paid in 1996. Unfortunately, due to sample attrition this variable has lower number of observations than other indicators on labor market shocks.

To further confirm the external nature of the changes in the labor market positions I regress five indicators of the negative labor market events on the measure of the degree of decline in the person's pre-transition sector of employment controlling for the individual characteristics[4]. The degree of sectoral decline is measured by the ratio of sectoral employment in 1995 to employment in 1990. The results of this estimation are presented in Table 2. They show that persons initially employed in sectors that collapsed the most during 1990-1995 were more likely to lose their job, experience occupational downgrading and salary decline, and were more likely to experience worst working years during this period.

3. Empirical model and variables description

In the next section I estimate the following general model:

$$Y_i = \alpha + \beta Z_i + X_i^{'}\gamma + F_i'\theta + \varepsilon_i$$

Where Y is one of the outcome variables measured in 2009, Z is an indicator or a group of indicators of the labor market shocks for parents (described in the previous section), X is a vector of individual characteristics, F is a vector of family or parents' characteristics.

The first of the outcome variables is self-rated health. RLMS survey questionnaire has a section on health where a number of questions are asked about different aspects of a person's health and health-related behaviors. In particular, respondents were asked to rate their health on a scale from 1 (best) to 5 (worst). This measure is widely used in health studies. Although it is a subjective measure of health, it has been shown to be highly correlated with objective health

[4] To obtain information about a person's occupation and sector of employment before the transition, I use data from the 2000 round of the survey, where respondents were asked about their occupation and sector of employment in 1985 and 1990..

measures, such as mortality (Idler and Benyamini 1997). Thus, it has a benefit of universality and comparability to other studies, while a potential drawback is that it is subjective and may be affected by unobserved characteristics of a person. I transform the variable so that the value 1 corresponds to the worst health and the value 5 to the best health, which is more intuitive.

Two other outcome variables are indicators of health-related behaviors - smoking and alcohol consumption. In the long run, these risky behaviors may have negative health effects. It is by now well established that smoking negatively affects long-term health as it is a leading cause of lung cancer and other lung diseases and a major cause of heart disease and stroke (Chaloupka 2000). Negative health effects of alcohol consumption are due to both short-term consequences of intoxication (increased probability of accidents and violence) and long-term effects of chronic heavy drinking (cirrhosis, coronary heart disease) (Cook and Moore 2000).

In RLMS survey, a number of questions about smoking and alcohol consumption were asked. I use the question on whether a person smokes and whether he/she ever drank alcohol.

Indicators of educational outcomes include an indicator for whether a person completed high school (this is relevant only for age 18 and above) and an indicator for whether he/she studies or studied in an advanced school or class. These are gymnasiums, lyceums, specialized schools or classes at the level of high school that give an advanced training in a number of subjects. Such schools or classes are usually highly selective, so it is more able and better prepared students who get there.

Control variables include individual's age, gender, location (urban vs. rural), family size and log household income per capita – all measured in 2009. I also control for the mother's education, whether mother was not working since 1990, whether father is absent[5], whether a person lives with at least one of the parents[6].

The indicators of the labor market shocks are defined separately for the mother and the father. In cases when the father is absent the father's indicators are set to zero. I also construct a combined indicator for whether any of the parents experienced a particular labor market shock.

Most of the dependent variables are binary indicators; for them binomial probit is used in model estimation. For the self-rated health ordered probit model is employed. Standard errors in all regressions are clustered at the level of the mother to account for the possible correlations among siblings.

[5] In 2009 some children born in 1989-1995 and in 1981-1986 already lived separately from their parents. I searched for the parents in all rounds of the survey. Father is said to be absent when there is no father found in the family of a person in any of the survey years starting from 1994.

[6] In 2009 86 percent of persons aged 14 to 20 years old and almost 40 percent of persons aged 23 to 28 years old lived with at least one of the parents.

I estimate all equations separately on two subsamples: persons born in 1989-1995 and persons born in 1981-1986 in order to test whether the period of childhood when family faces labor market shock matters.

4. Empirical results

Table 3 presents the results of estimation of the empirical model for the two subsamples where the family labor market shock is measured by whether the parents had their worst years work-wise over the whole transition period during 1991-1995. This is an aggregate indicator of the severity of the labor market shocks which is equal to one for the families most negatively affected by the early transition.

The results show that the negative labor market experience faced by the father during 1991-1995 adversely affects health of a child in 2009 and reduces the likelihood of high school completion (for the children born during the transition). The same effects are not observed for the children born before the transition. However people who were at school age during 1991-1995 and whose parents faced labor market shocks are more likely to smoke and consume alcohol, that is, they are more likely to have behavioral problem.

Also note that the absence of a father in a family has detrimental effect on health for those who were young children during the early transition but not for those who were of a school age at that time. It means that in terms of health children under age five are more vulnerable to the economic shocks to their families than older children, particularly in single-mother families.

Tables 4 and 5 present estimations of the same equations separately for girls and boys. Negative health effects are observed both for boys and girls but boys' health is more sensitive to father's shocks. Negative effect of economic shocks on high school completion is found only for girls. An interesting pattern by gender is revealed for risky behaviors in older age group. I find an increased incidence of smoking for the girls whose mothers suffered economic shocks and increased incidence of alcohol consumption for the boys whose fathers were affected.

Tables 6 and 7 present the estimates of the effect of the more specific negative labor market events. Indicator (or two indicators for mother and father) of each labor market shock was included in the regression separately. Only coefficients on these indicators are shown.

For the children born during the transition, their health in adolescence is negatively affected by occupational downgrading and salary cuts experienced by any of the parents in 1991-1995. Wage non-payments to the father also show negative health effect. For children from the older cohort, only father's salary cut affects their health.

Schooling outcomes – high school completion and probability to study in advanced school - are negatively affected by parents' labor market shocks in both cohorts. For children

born in 1989-1995 it is mother's problems that mainly affect educational outcomes. For the older cohort both parents' economic shocks play role.

The incidence of risky behaviors is also affected for both cohorts. Occupational downgrading and the need to take additional work increase the incidence of drinking among the people born in 1989-1995. At the same time, salary cut faced by the father reduces probability of smoking. For the older cohort the loss of job by father increases incidence of drinking and smoking. Additionally, occupational downgrading and wage non-payments occurring to parents cause higher incidence of alcohol consumption.

An aggregate indicator of any of the four labor market shocks experienced by any parent has significant effect on health, drinking and school completion for a younger cohort. No significant effects are found for older cohort. These results indicate that the negative impact of the economic shocks in the family was stronger for the children who were younger at that time.

5. Conclusions

In this paper I study the impact of labor market shocks experienced by parents on their children's health, educational and behavioral outcomes. Transition period in Russia provides a natural experiment setting for estimating this effect. During the economic turmoil of early transition many people lost their jobs, experiences salary declines or occupational downgrading. These individual labor market shocks were mainly caused by the structural changes in the economy.

The results show that children whose families were negatively affected during the early transition when they were under age five have poorer health in adolescence and are less likely to have completed high school. For the comparison group – children who were at the school age during the early transition – there is a negative effect on educational outcomes and increased incidence of smoking and alcohol consumption but almost no effect on health. Absence of a father in a family has detrimental effect on health for those who were young children during the early transition but not for those who were of school age at that time. Thus, it is shown that in terms of health children under age five are more vulnerable to the economic shocks to their families than older children, particularly in single-mother families.

The results obtained in the paper are potentially important for understanding the long run consequences of economic crises for human capital accumulation. The fact that younger children are more susceptible to the economic hardships in the family means that early intervention policies may be needed to remedy the potential negative effects.

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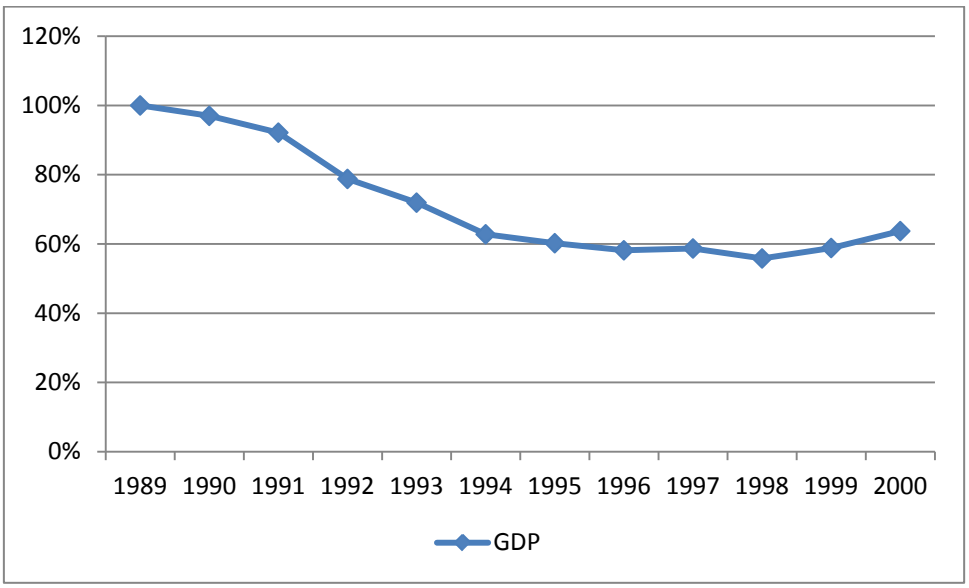
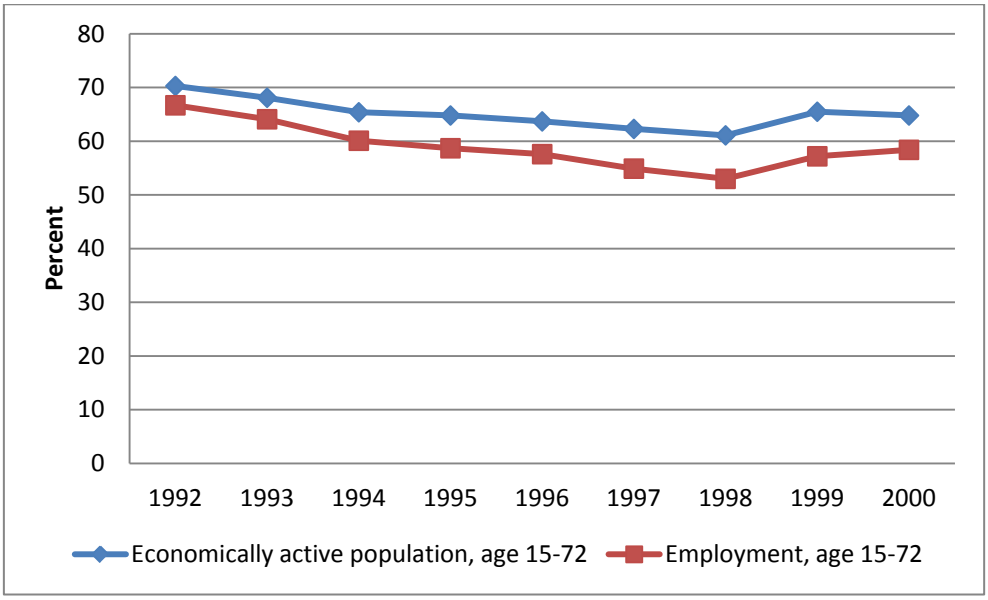
Figures and Tables

Figure 1. Real gross domestic product in Russia



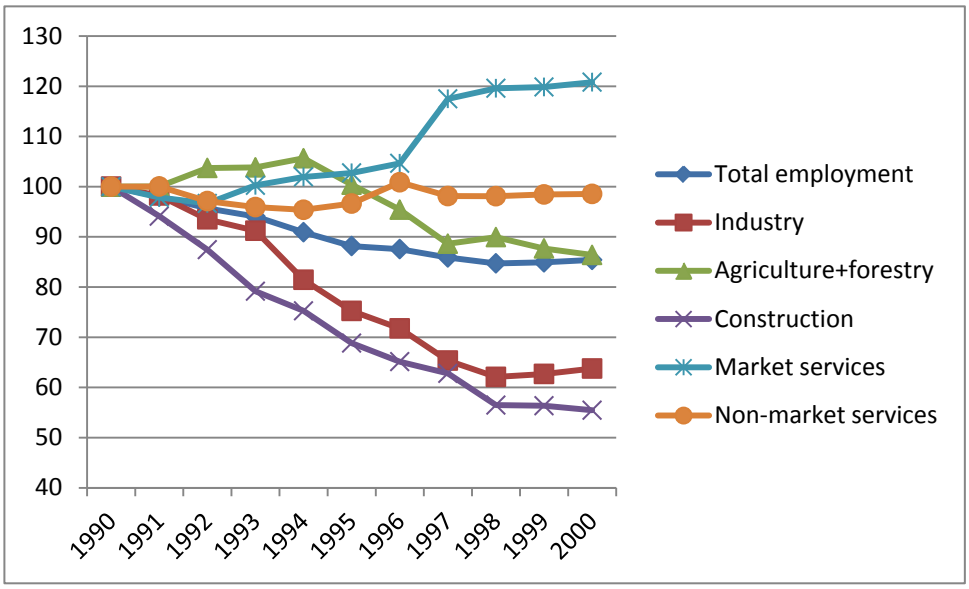
Source: Rosstat data

Figure 2. Economically active population and employment rates in Russia



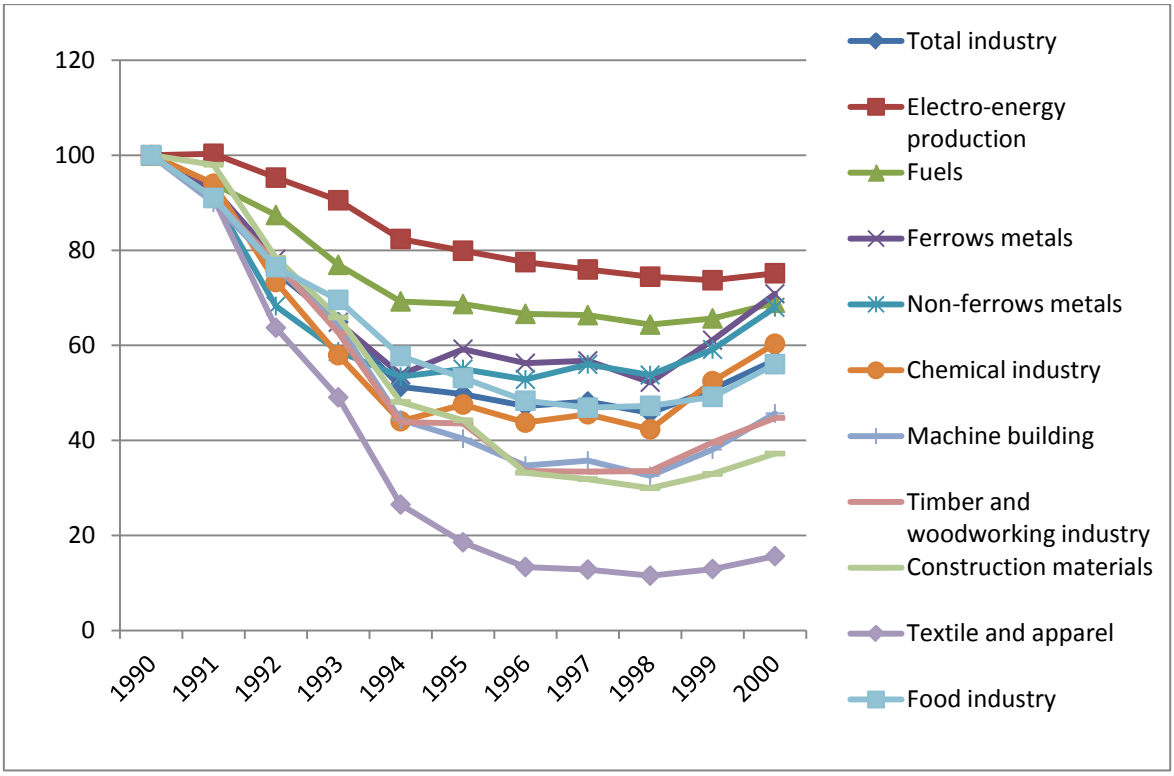
Source: Rosstat data

Figure 3. Dynamics of the sectoral employment, 100% in 1990



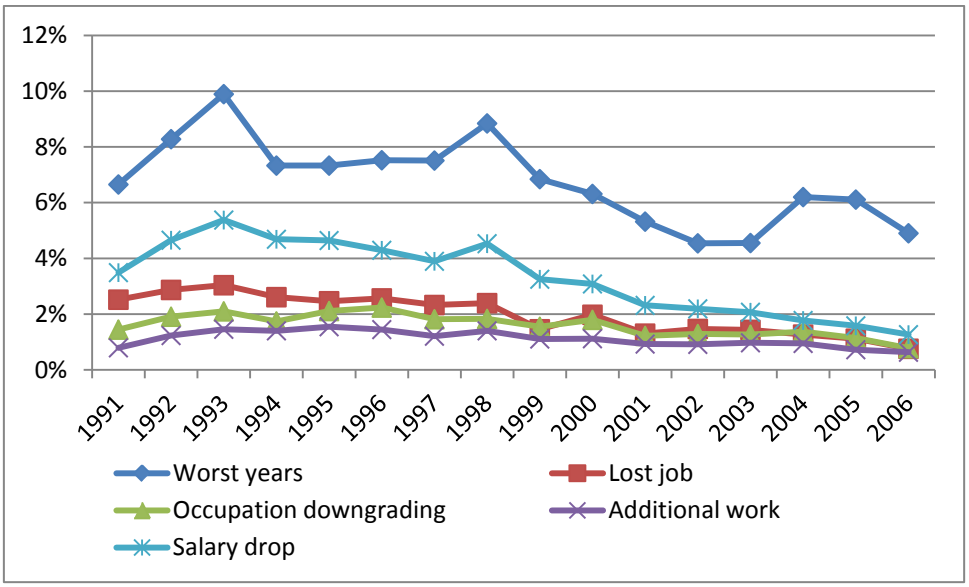
Source: Rosstat data

Figure 4. Dynamics of industrial output by sector, 100% in 1990



Source: Rosstat data

Figure 5. Percent of respondents in 2006 who faced labor market shocks since 1991, by year



Source: survey data

Table 1. Incidence of the negative labor market events during 1991-1995

	Women	Men
Did not work after 1990	14,9%	5,4%
Lost job	10,5%	11,9%
Occupational downgrading	7,1%	8,5%
Additional work	3,6%	3,8%
Salary cut	11,7%	13,7%
Any of the above	20,2%	22,9%
Worst working years 1991-1995	17,6%	20,8%
N obs	5,254	3,603

Table 2. Structural shifts and individual labor market shocks, adults

	(1) Worst years 1991-1995	(2) Lost job 1991-1995	(3) Occupational downgrading 1991-1995	(4) Additional work 1991-1995	(5) Salary cut 1991-1995
Ratio of sectoral employment 1995 to 1990	-0.090*	-0.062*	-0.063**	-0.013	-0.121***
	(0.046)	(0.033)	(0.028)	(0.019)	(0.043)
Occupational. concentration across sectors	-0.081**	-0.077***	-0.069***	-0.034**	-0.028
	(0.032)	(0.023)	(0.022)	(0.015)	(0.028)
Age	0.008	0.015**	0.001	-0.001	0.013*
	(0.008)	(0.006)	(0.005)	(0.003)	(0.007)
Age squared	-0.000	-0.000***	-0.000	0.000	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Male	0.025	-0.020	-0.007	-0.010	-0.001
	(0.018)	(0.013)	(0.012)	(0.008)	(0.016)
Years of education	0.010***	-0.003	0.000	0.002	0.001
	(0.003)	(0.002)	(0.002)	(0.001)	(0.003)
Urban area	0.033*	0.007	0.029**	0.014*	0.060***
	(0.020)	(0.014)	(0.012)	(0.008)	(0.017)
N	2233	2233	2233	2233	2233
pseudo R^2	0.015	0.030	0.038	0.022	0.019

Marginal effects; robust standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3. The effect of parents having worst working years in 1991-1995 on their children's outcomes in adolescence

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Born 1989-1995				Born 1981-1986				
	Self-rated health	Self-rated health	Completed high school (age 18-20)	Completed high school (age 18-20)	Self-rated health	Self-rated health	Smokes	Smokes	Ever drinks
Worst years 1991-1995 – any parent	-0.227**		-0.116*		-0.092		0.111**		
	(0.095)		(0.060)		(0.107)		(0.049)		
Worst years 1991-1995 – mother		-0.036		0.064		-0.004		0.114**	0.016
		(0.112)		(0.066)		(0.127)		(0.058)	(0.042)
Worst years 1991-1995 – father		-0.273**		-0.277***		-0.194		0.113*	0.086**
		(0.127)		(0.086)		(0.141)		(0.066)	(0.040)
Mother's education[(1)]	0.006	0.006	0.041***	0.035***	-0.015	-0.017	-0.028***	-0.027**	-0.010
	(0.017)	(0.017)	(0.012)	(0.012)	(0.021)	(0.021)	(0.011)	(0.011)	(0.008)
Mother not working after 1990[(1)]	-0.025	-0.002	0.173	0.165	-0.221	-0.218	0.130	0.147	-0.052
	(0.253)	(0.256)	(0.110)	(0.106)	(0.275)	(0.281)	(0.152)	(0.152)	(0.120)
Lives with parents	0.126	-0.019	0.195	0.181	-0.059	-0.082	-0.107*	-0.097*	-0.046
	(0.233)	(0.256)	(0.140)	(0.144)	(0.118)	(0.122)	(0.056)	(0.057)	(0.038)
Father absent	-0.253**	-0.295***	-0.056	-0.109	-0.123	-0.170	0.125**	0.145***	0.035
	(0.099)	(0.106)	(0.063)	(0.067)	(0.112)	(0.119)	(0.052)	(0.054)	(0.040)
Age	-0.030	-0.030	0.044	0.047	-0.024	-0.024	0.012	0.014	0.007
	(0.021)	(0.021)	(0.036)	(0.037)	(0.029)	(0.030)	(0.013)	(0.013)	(0.010)
Male	0.232***	0.214**	-0.121**	-0.126**	0.088	0.086	0.439***	0.452***	0.106***
	(0.084)	(0.087)	(0.055)	(0.056)	(0.100)	(0.101)	(0.040)	(0.040)	(0.033)
Family size	0.081*	0.082*	0.027	0.028	-0.017	0.000	-0.015	-0.014	-0.027**
	(0.042)	(0.043)	(0.024)	(0.024)	(0.036)	(0.035)	(0.017)	(0.018)	(0.011)
Log household income per member	-0.038	-0.007	0.123***	0.133***	0.100	0.116	-0.043	-0.047	0.047*
	(0.079)	(0.081)	(0.047)	(0.047)	(0.074)	(0.075)	(0.038)	(0.038)	(0.028)
Urban area	-0.352***	-0.365***	-0.022	-0.047	-0.371***	-0.312**	0.001	-0.006	0.026
	(0.107)	(0.109)	(0.066)	(0.066)	(0.135)	(0.136)	(0.056)	(0.058)	(0.047)
N	732	698	336	323	581	565	581	565	565
pseudo R^2	0.040	0.038	0.086	0.099	0.014	0.014	0.166	0.181	0.061

Marginal effects; standard errors in parentheses, clustered at the level of mother; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
(1) In few cases when mother is missing variable is defined for father

Table 4. The effect of parents having worst working years in 1991-1995 on their children's outcomes in adolescence, girls

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
	Born 1989-1995				Born 1981-1986				
	Self-rated health	Self-rated health	Completed high school (age 18-20)	Completed high school (age 18-20)	Self-rated health	Self-rated health	Smokes	Smokes	Completed high school (age 18-20)
Worst years 1991-1995 – any parent	-0.287**		-0.152*		0.049		0.169***		-0.105*
	(0.133)		(0.080)		(0.152)		(0.060)		(0.061)
Worst years 1991-1995 – mother		-0.182		0.117		0.129		0.192***	
		(0.168)		(0.089)		(0.185)		(0.066)	
Worst years 1991-1995 – father		-0.181		-0.391***		-0.127		0.140*	
		(0.167)		(0.114)		(0.184)		(0.084)	
Mother's education(1)	0.002	0.000	0.062***	0.051**	-0.029	-0.031	-0.022*	-0.021*	0.044***
	(0.021)	(0.023)	(0.018)	(0.020)	(0.027)	(0.028)	(0.012)	(0.011)	(0.013)
Mother not working after 1990(1)	0.182	0.160	0.118	0.130	-0.258	-0.256	0.287	0.305	-0.037
	(0.238)	(0.241)	(0.137)	(0.124)	(0.429)	(0.430)	(0.204)	(0.201)	(0.062)
Lives with parents	-0.028	-0.153	0.208	0.171	0.121	0.094	-0.089	-0.071	-0.147**
	(0.268)	(0.286)	(0.166)	(0.166)	(0.169)	(0.175)	(0.065)	(0.066)	(0.069)
Father absent	-0.296**	-0.296**	0.007	-0.059	0.058	0.010	0.131*	0.154**	-0.025
	(0.146)	(0.151)	(0.089)	(0.098)	(0.176)	(0.189)	(0.069)	(0.071)	(0.017)
Age	-0.021	-0.020	0.059	0.059	-0.058	-0.063	0.003	0.003	0.008
	(0.029)	(0.031)	(0.050)	(0.050)	(0.042)	(0.043)	(0.015)	(0.015)	(0.022)
Family size	0.122**	0.128**	-0.031	-0.020	0.005	0.033	-0.005	-0.003	0.076*
	(0.056)	(0.058)	(0.038)	(0.039)	(0.050)	(0.046)	(0.020)	(0.020)	(0.042)
Log household income	-0.014	0.025	0.066	0.076	0.187*	0.193*	-0.027	-0.032	-0.336**

per member									
	(0.109)	(0.114)	(0.067)	(0.071)	(0.099)	(0.101)	(0.039)	(0.038)	(0.170)
Urban area	-0.219	-0.275*	-0.026	-0.033	-0.362*	-0.280	0.105*	0.080	-0.117*
	(0.148)	(0.152)	(0.092)	(0.094)	(0.205)	(0.208)	(0.060)	(0.062)	(0.060)
N	364	342	166	159	278	268	278	268	277
pseudo R^2	0.036	0.036	0.120	0.156	0.020	0.022	0.077	0.094	0.111

Marginal effects; standard errors in parentheses, clustered at the level of mother

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1) In few cases when mother is missing variable is defined for father

Table 5. The effect of parents having worst working years in 1991-1995 on their children's outcomes in adolescence, boys

	(1)	(2)	(4)	(5)	(6)	(7)
	Born 1989-1995		Born 1981-1986			
	Self-rated health	Self-rated health	Self-rated health	Self-rated health	Ever drinks	Ever drinks
Worst years 1991-1995 – any parent	-0.177		-0.215		0.094**	
	(0.128)		(0.151)		(0.040)	
Worst years 1991-1995 – mother		0.076		-0.112		0.033
		(0.148)		(0.175)		(0.048)
Worst years 1991-1995 – father		-0.374**		-0.247		0.090**
		(0.183)		(0.208)		(0.042)
Mother's education(1)	0.014	0.015	-0.008	-0.010	-0.006	-0.007
	(0.023)	(0.024)	(0.031)	(0.032)	(0.010)	(0.010)
Mother not working after 1990(1)	-0.302	-0.228	-0.085	-0.062	-0.129	-0.134
	(0.416)	(0.420)	(0.378)	(0.390)	(0.134)	(0.135)
Lives with parents	0.725	0.547	-0.239	-0.264	-0.082*	-0.090**
	(0.452)	(0.576)	(0.158)	(0.162)	(0.044)	(0.044)
Father absent	-0.227*	-0.310**	-0.239	-0.283*	0.006	0.024
	(0.130)	(0.145)	(0.148)	(0.156)	(0.046)	(0.046)
Age	-0.041	-0.039	0.001	0.006	0.013	0.012
	(0.029)	(0.029)	(0.041)	(0.041)	(0.012)	(0.012)
Family size	0.057	0.048	-0.049	-0.041	-0.016	-0.014
	(0.056)	(0.057)	(0.052)	(0.052)	(0.013)	(0.013)

Log household income per member	-0.053	-0.019	0.029	0.066	0.020	0.018
	(0.101)	(0.103)	(0.111)	(0.112)	(0.034)	(0.034)
Urban area	-0.471***	-0.457***	-0.430**	-0.400**	-0.007	0.000
	(0.142)	(0.147)	(0.176)	(0.178)	(0.050)	(0.052)
N	368	356	303	297	303	297
pseudo R^2	0.041	0.038	0.028	0.028	0.057	0.054

Marginal effects; Standard errors in parentheses, clustered at the level of mother

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1) In few cases when mother is missing variable is defined for father

Table 6. The effect of negative labor market events for parents during 1991-1995 on their children's outcomes in adolescence (children born in 1989-1995)

	(1)	(4)	(5)	(6)	(7)
	Self-rated health	Smokes	Ever drinks	Advanced school	Completed high school (age 18-20)
Lost job in 1991-1995 - mother	-0.133	-0.047	0.010	-0.074***	0.030
	(0.131)	(0.039)	(0.068)	(0.025)	(0.078)
Lost job in 1991-1995 - father	0.120	0.047	0.094	0.063	-0.056
	(0.144)	(0.051)	(0.071)	(0.052)	(0.088)
Occ.downgrading 1991-1995 – any parent	-0.213**	0.006	0.182***	0.008	-0.044
	(0.108)	(0.035)	(0.053)	(0.033)	(0.072)
Occ.downgrading 1991-1995 –mother	-0.205	-0.044	0.179**	-0.057*	0.180
	(0.144)	(0.038)	(0.076)	(0.029)	(0.172)
Occ.downgrading 1991-1995 – father	-0.122	0.034	0.119	0.085	0.210
	(0.153)	(0.051)	(0.073)	(0.058)	(0.135)
Add. work 1991-1995 – any parent	-0.114	-0.054	0.161**	0.005	-0.109
	(0.144)	(0.041)	(0.076)	(0.042)	(0.099)
Add. work 1991-1995 – mother	-0.061	-0.048	0.059	0.015	-0.248*
	(0.222)	(0.061)	(0.101)	(0.077)	(0.144)
Add. work 1991-1995 – father	-0.250	-0.075	0.178*	-0.002	0.049
	(0.188)	(0.053)	(0.104)	(0.053)	(0.134)
Salary cut 1991-1995 – any parent	-0.213*	-0.058**	-0.007	-0.005	-0.140*
	(0.117)	(0.029)	(0.052)	(0.030)	(0.074)
Salary cut 1991-1995 – mother	-0.005	0.002	0.027	0.010	-0.109
	(0.176)	(0.050)	(0.075)	(0.046)	(0.094)
Salary cut 1991-1995 – father	-0.150	-0.089***	-0.015	-0.000	-0.184*
	(0.150)	(0.031)	(0.065)	(0.039)	(0.100)
Any shock – any parent	-0.182**	-0.005	0.081*	-0.008	-0.115**
	(0.091)	(0.026)	(0.042)	(0.024)	(0.056)
Wage arrears in 1996 – mother	-0.017	0.009	-0.016	0.011	0.007
	(0.033)	(0.008)	(0.016)	(0.008)	(0.024)
Wage arrears in 1996 - father	-0.051*	-0.002	0.001	-0.006	-0.024
	(0.029)	(0.008)	(0.012)	(0.010)	(0.019)

Marginal effects; standard errors in parentheses, clustered at the level of mother

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Each group of indicators was separately included in regressions. Controls included in all regressions are the same as in Tables 3-5, not shown.

Table 7. The effect of negative labor market events for parents during 1991-1995 on their children's outcomes in adolescence (children born in 1981-1986)

	(1)	(2)	(3)	(4)	(5)
	Self-rated health	Smokes	Ever drinks	Advanced school	Completed high school (age 18-20)
Lost job in 1991-1995 - mother	-0.030	0.083	-0.037	0.009	-0.051
	(0.148)	(0.067)	(0.055)	(0.034)	(0.064)
Lost job in 1991-1995 - father	0.026	0.183**	0.103**	0.006	-0.059
	(0.194)	(0.081)	(0.047)	(0.042)	(0.075)
Occ.downgrading 1991-1995 –mother	0.029	0.123*	0.090*	0.004	0.019
	(0.173)	(0.075)	(0.046)	(0.030)	(0.069)
Occ.downgrading 1991-1995 – father	-0.050	0.069	0.016	-0.055***	0.050
	(0.259)	(0.124)	(0.079)	(0.019)	(0.097)
Add. work 1991-1995 – mother	-0.062	0.160	0.051	-0.051**	-0.001
	(0.317)	(0.126)	(0.072)	(0.021)	(0.104)
Add. work 1991-1995 – father	0.205	0.131	0.110	-0.050**	
	(0.310)	(0.151)	(0.075)	(0.021)	
Salary cut 1991-1995 – mother	0.047	0.045	0.054	0.034	0.029
	(0.148)	(0.065)	(0.045)	(0.032)	(0.059)
Salary cut 1991-1995 – father	-0.394**	0.027	0.044	-0.020	-0.066
	(0.165)	(0.081)	(0.053)	(0.027)	(0.077)
Any shock – any parent	-0.062	0.066	0.049	0.017	-0.026
	(0.101)	(0.045)	(0.034)	(0.020)	(0.042)
Wage arrears in 1996 – mother	0.015	0.012	-0.005	-0.002	-0.025*
	(0.025)	(0.014)	(0.011)	(0.009)	(0.013)
Wage arrears in 1996 - father	0.006	-0.015*	0.013*	0.001	0.001
	(0.025)	(0.009)	(0.008)	(0.007)	(0.010)

Marginal effects; standard errors in parentheses, clustered at the level of mother

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Each group of indicators was separately included in regressions. Controls included in all regressions are the same as in Tables 3-5, not shown.