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## **Individual Income Gains and Losses in Ukraine, 1993–1996**

### **A Test of the Human Capital and Mental Adjustment Hypotheses**

*Abstract: Using the 1993–96 panel data from the national Ukrainian survey, we test two complementary hypotheses pertaining to income determinants and income change. First, we stipulate that, despite a slow pace of economic reforms during the initial phase of the post-communist transition, the impact of education on income increases over time. Second, we hypothesize that support for systemic change at the beginning of the process is an important determinant of further income gains or losses. Our analysis shows that neither hypothesis can be rejected on statistical*

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*grounds. Indeed, the correlation of education with income increases substantially from very low to moderate. The impact of support for systemic change appears to be positively associated with income gains at the significant level. Both these effects remain noticeable even if they are controlled for other variables, including gender and age. In the article, we discuss the theoretical implications of our main findings, emphasizing that individuals' attitudes toward systemic change should be considered in a broad context of values conducive to the development of the market economy.*

The aim of this paper is to elucidate some aspects of the societal transformation that is taking place in Ukraine. The specific objects of the present analysis are individual income gains and losses in the period of radical social change. Although this change touches upon various aspects of life, it is most evident in measurable domains. One of the best examples of the latter is income distribution, upon which we will concentrate.

According to the Ukrainian Household Budget study, as of the mid-1990s 10 percent of the richest households receive 40 percent of all income. For this period, the income ratio of the 10 percent richest group to the 10 percent poorest group exceeds 65. The Gini coefficient equals .57 (Makeev and Kharchenko 1998). For comparative purposes, we can contrast these figures with those for the end of the 1980s, the last years of the communist system. In this case, we refer to the Soviet Union, because as a part of it, Ukraine did not significantly differ from other republics. In 1986, the income ratio of the 10 percent of richest to the 10 percent poorest households was about 3.3 (Rimashevskaiia and Rimashevskii 1991) and the Gini coefficient was .256 (Atkinson and Micklewright 1992). Still in 1992, the Gini coefficient for Ukraine was .257 (World Bank 1997: 222). Thus, it is obvious that income inequality increased enormously during the initial stage of the post-communist transformation.

The increase in income inequality has not resulted from the basic economic reforms and any substantial modification of social structure. In 1993-96 economic reforms proceeded rather slowly and occupational composition in official economy has remained stable (cf., Tedstrom 1995; Kuzio 1998; Hare et al. 1998). How could one explain the enormous increase in income inequality? In order to answer this question, we focus on individual income gains and losses that can be calculated in a relatively precise way as a difference between earnings at two



points in time: when Ukraine crossed the "nonreversal" point on the path to its independence (1993) and when some reforms—especially those pertaining to privatization—started to have clear effects on people's lives (1996). We examine the main variables referring to the theory of human capital (education) and to theorizing on post-communist mental adjustment (support for systemic change) as the primary determinants of income. For our analysis, we explore two waves of the 1993–96 panel survey, that was conducted based on a national sample of the adult population throughout Ukraine.

### **Theoretical Background**

Sociological and economic analyses of earnings emphasize two factors: level of skills and job characteristics (Mincer 1974; Becker 1975; for a review, see Willis 1986). According to the functional theory of social stratification, the most important positions in society demand talents, which are limited in each society, and long-term training, which, in turn, demands human effort and material investments. In order to encourage talented and educated individuals to occupy these positions, society should ensure them adequate rewards, large enough to cover their educational expenses. In this way, in an effective economy the close association between education and income forms a base for a meritocratic society (Krauze and Slomczynski 1985; Slomczynski 1989). Human capital theory, in agreement with the functional theory of social stratification, regards income differentials as returns for human capital, that is, to investments in education and training (Mincer 1974; Becker 1975).

In the capitalist system, rewards are in close relation to the quantity and quality of labor. The key mechanisms of regulating rewards at the individual level are formal and informal negotiations between employers and employees, as well as institutionalized disputes between these parties that also involve the government. Initially, in the Soviet economy wages were also defined as corresponding to the "quality and quantity of invested labor" and involved bargaining (Karpuchin and Ananjeva 1977; Kirsch 1972). Pay scales, elaborated beginning in 1917, were purported to tie earnings to different characteristics of jobs. These pay scales allowed earnings to be differentiated according to job complexity with great accuracy, which ensured relative equality of payments for groups of workers performing similar tasks (Czajka 1990).

However, the dominance of political goals in Soviet economic policies turned this tool of income regulation into an ineffective one. At first, pay scales did not provide distributive justice for the nonproductive sphere, because the development of heavy industry became a political priority. This led to a serious distortion in payments when the earnings of highly educated specialists in a tertiary sector fell far below those of industrial workers. This fact caused the profanation of educational values and a widely observed practice among specialists with higher and technical education to become employed in workers' positions.

In addition, the economic reforms of the Soviet system aimed at attaining social equality. This made pay scales a less effective instrument of wage diversification within the group of industrial workers as well. While in the 1930s wage differentials for workers were 4.4, in 1956–65 they were reduced to 1.8–2.0 (Kapustin 1974). Reforms of the 1960s and 1970s established new pay scales, with a smaller number of gradations and broadly understood job conditions (Czajka 1990).<sup>1</sup> Actually, various extra and additional payments became instruments for keeping workers in unattractive workplaces. This led to a general lack of interest in improving one's occupational skills and labor efforts, and, consequently, to a drop in labor productivity. Moreover, income in the Soviet system included not only earnings from work but also extra payments derived from various funds that were invoked to ensure social justice. These funds, however, were frequently misused (Krencik 1990). Consequently, this provided people with living standards that were only weakly connected to the quantity and quality of their labor.

As a result of unsuccessful reforms of the Soviet economic system, Ukraine and other republics of the Soviet empire were left not only with a low level of income inequality but also with *low efficiency of human capital utilization* (Kornai 1992). The most dramatic evidences of this situation were the low value of Gini coefficients and the low value of the correlation between education and income. One would expect any reform in the direction of a free market economy necessarily to result in changing these coefficients. In this article, we focus on the impact of education on income. According to the *human capital hypothesis*, this impact should increase during the initial phase of the post-communist transformation.

A complementary hypothesis, called here the *mental adjustment hypothesis*, involves people's psychological reaction to systemic change.<sup>2</sup> We say that people are averse to such change if they perceive more



threats within the new system than opportunities brought by it, and if they prefer the old system over a new one. For such people change is worse than no change. Aversion to systemic change also implies a negative reaction to "new things." This is a generalized attitude closely related to fatalism (cf. Slomczynski et al. 1998).

Usually, sociologists test the hypothesis according to which a position of individuals in the dimension of material well-being has an effect on value orientation. The entire series of studies conducted by Kohn and his collaborators (Kohn 1967; Kohn and Schooler 1983; Slomczynski and Kohn 1989; Kohn and Slomczynski 1993; Kohn et al. 1990; Kohn et al. 1997) shows that people who occupy privileged positions in the social stratification system tend to be more open-minded and self-directed than those who occupy disadvantaged positions. In these studies, one can extract a clear regularity: the higher the income the stronger the support for change.<sup>3</sup> In an extension of these studies it was found that:

in both Poland and Ukraine economic success, education, gender, and age have significant effects on aversion to systemic change. . . . Economically successful, better-educated, male, and younger individuals are less averse to systemic change than economically unsuccessful, less educated, female, and older individuals. In both countries, the dominant factor is economic success. (Slomczynski et al. 1998: 107)

There are two types of sociopsychological mechanisms of forming aversion to systemic change that operate in the initial phase of the post-communist transformation. First, those people who have experienced particular difficulties during the ongoing transformation will generalize this negative experience to various aspects of life and will reject the idea of change as such. The learning-generalization hypothesis developed by Kohn and Schooler (1983; see also Kohn and Slomczynski 1993) provides an explanation: Those who are members of privileged social classes and exercise occupational self-direction would support systemic change while those who are from deprived social classes would oppose it. Second, those persons who can rationally expect some loss during the ongoing transformation try to avoid unwanted consequences and defend the status quo or status ante. This assumption is drawn from theorizing about the defense of group interests (Przeworski 1991 and 1993; Kolarska-Bobinska 1994).

We hypothesize that not only a specific type of experience of the

transition from the communist system to democracy and a market economy influences attitudes toward systemic change, but also that these attitudes impact on economic success. In the classic modernization theory it has been argued that during the development of new social order, people's value orientations play an important role in how they shape their lives (Inkeles and Smith 1974). During the post-communist transition, the "egoistic positive charge" performs a role of "concentrated means" for changing one's position in the emerging social structure (Klimova 1994). Studies on mental adjustment to the post-communist system imply that *those who support systemic change will benefit from the ongoing social transformation because they adapt better*. In this article, we take this implication seriously and subject it to a test.

## Data

Our analyses are based on the two-wave panel study conducted in Ukraine.<sup>4</sup> Both waves involved face-to-face interviews among representative samples of all men and women living in urban areas. The surveys were mainly devoted to the study of the relationship between social structure and psychological functioning under conditions of radical social change (Kohn et al. 1997; Slomczynski et al. 1998).

The Ukrainian sample was drawn by using the method of area representation of people (commonly households) living at the same address. Thus, at the first stage, districts, post offices, buildings, and living quarters were randomly selected. At the second stage, the names of adult residents, living at the predetermined addresses of the first stage, were recorded and subjected to random selection according to the Kish method (Kish 1965). This sampling procedure was intended to overcome the limitations of past procedures for selecting samples in the former Soviet Union as well as the poor quality of official statistics in Ukraine.

The interview schedule was pre-tested. The survey was carried out by the Kiev International Institute of Sociology, a private research center, currently cooperating with the National University of Kiev Mohyla Academy.

In the first wave, completed in January of 1993, a total of 2,356 people were interviewed. The rate of completion was 82 percent. The obtained sample adequately mirrors various characteristics of the population from which it was drawn.



The fieldwork of the second wave was carried out in March–June 1996. This wave consists of 910 cases, with a completion rate of 75 percent. In the present article we focused only on the economically active population, twenty-five to sixty-five years of age. This limited the sample size to 706 cases.

### **Hypotheses and Analytical Strategy**

The human capital hypothesis used in the context of the post-communist transition implies that the impact of education on income increases over time and that education determines individual income gains and losses. Thus, according to this hypothesis, the proportional return for education should be higher in 1996 than in 1993. Moreover, in comparing the 1996 and 1993 income, we would expect higher education to produce higher gains. On average, for low education we would expect income losses.

The mental adjustment hypothesis is dynamic in nature and as such deals only with income gains and losses. We anticipate that those who support systemic change experience income gains and those who are averse to systemic change experience income losses. In its original form, this hypothesis implies that the effect of individuals' orientation to systemic change in shifts in income over time is evident above and beyond the effect of education on the same overall shifts.

We will begin the presentation of our statistical analysis with Mincerian earnings equations in which estimated coefficients denote proportional rates of return on education (Mincer 1974). However, in order to test our hypotheses about income gains and losses, we employ the panel regression model in the following form:

$$\log Y_{1996} = a + b_1 Y_{1993} + b_2 X_1 + b_3 X_2 + \dots b_n X_{n-1}$$

where  $Y$  refers to income in 1996 and 1993, respectively,  $X_1$  to  $X_{n-1}$  refer to determinants of income,  $a$  is an intercept and  $b_1 \dots b_n$  are estimated coefficients of the rates of return. Note that coefficients  $b_2 \dots b_n$  can be interpreted in a dynamic manner, because in an equivalent formula:

$$\log Y_{1996} - b_1 Y_{1993} = a + b_2 X_1 + b_3 X_2 + \dots b_n X_{n-1}$$

where the left part defines the exact shift in relative (rescaled) income

that occurred over three years, and the right part contains the explanation of this shift. According to our hypotheses, the coefficients *b* accompanying education and support for systemic change should be *positive and significant*, even if other variables are controlled. However, before testing these hypotheses, we present some preliminary analyses pertaining to income dynamics.

### Income Gains and Losses Between 1993 and 1996

During 1993-96 Ukraine faced inflation of 1,268 percent (International Monetary Fund 1997). In constant currency, the individual personal income was 8,911.3 karbovanets in 1993 and 8,021.8 karbovanets in 1996.<sup>5</sup> Thus, the earnings show a sizable decline of about 10 percent.

The 1993 income explains only a very small proportion of the 1996 income variance: the adjusted *R* squared equals .047. Could such a low correlation over time result from the direct misreporting of earnings during the interviews or from indirect bias in the income variables? To answer this question, we eliminated all cases in which income was highly atypical for a given occupation, or in which reported education in 1996 was lower than education in 1993.<sup>6</sup> Eliminating 104 "suspicious" cases from our sample, we obtained the adjusted *R* squared of .079. This result can be treated as evidence that even a very rigorous control procedure does not result in a decisively better explanation of the variation in the 1996 income. Moreover, further analysis convinced us that the *individual shifts in income are dispersed and only weakly depend on the size of income in 1993*.<sup>7</sup> Thus, what does account for these individual shifts? This is a central question of the remaining sections of this article.

### Education and Income Gains and Losses

In Table 1 we provide basic data on the relationship between education and income in Ukraine. Elementary education means schooling up to eight years. Secondary education is a heterogeneous category because it includes some vocational schools attended after completion of the elementary education. Technical post-secondary education includes *technicums* and secondary specialized schools; it produces mainly semi-professionals. College/university education is a category that refers to



Table 1

**Monthly Personal Income by Educational Categories in Ukraine, 1993 and 1996**

Educational categories	Income in 1993 (A)	Income in 1996 (B)	Difference (B - A)	N
A. Mean value (in constant karbovanets)				
Elementary	7,109.5	4,186.5	-2,923.0	42
Secondary	8,441.2	6,236.6	-2,204.6	254
Technical post-secondary	8,921.5	8,313.3	-608.2	187
College/university	9,964.9	10,955.4	+990.5	183
Total	8,911.3	8,021.7	-826.1	706
B. Income differentials (as percent of total)				
Elementary	79.8	52.2	-27.6	42
Secondary	94.7	77.7	-17.0	254
Technical post-secondary	100.0	103.6	+3.6	187
College/university	111.8	136.6	+24.8	183
Total	100.0	100.0	0.0	706

the academies, the higher educational institutions known as *vuzy*, and the higher party schools.<sup>8</sup>

In 1993 a person with a college/university degree earned 2,855.4 karbovanets more than a person with elementary education. This difference constitutes 40.2 percent of the earnings of a person with elementary education. In 1996 the analogous proportion ( $10,955.4 - 4,186.5$ )  $\div$  4,186.5, is much higher and amounts to 161.7 percent. Actually, in the period 1993-96, the category of persons with college/university degrees is the only one that gained in terms of personal income. Persons with elementary education lost evidently more than persons with secondary and technical post-secondary education.

In the period 1993-96, the differences between educational categories widened in relative terms. In 1993, persons with college/university degrees earned only 111.8 percent of the average. Three years later they earned 136.6 percent of the average. Comparable figures for per-

sons with elementary education are: 79.8 percent and 52.2 percent, respectively. Overall, we can claim that *during the initial phase of the post-communist transition the better educated became wealthier while the less educated became poorer.*

### ***A Test of the Human Capital Hypothesis***

To present a general picture of earnings-related education premiums, we estimated a standard Mincerian human capital earnings function, which gives a direct estimate of the rate of returns for an additional year of schooling (Mincer 1974). Generally, our regression results show a *substantial increase in the education premium for the period 1993-96.*

As Part A of Table 2 demonstrates, in 1993 an investment in one more year of education yielded a rate of return of less than 5 percent, disregarding the impact of other potentially important variables. In 1996 the analogous rate of return was around 8 percent. Is this increase statistically significant? To answer this question, we computed the 95 percent confidence intervals for the education coefficients. For 1993, this interval is .022 to .060; for 1996 it is .069 to .106. Since these intervals do not overlap, we reject the null hypothesis that the education coefficients for 1993 and 1996 are the same. For 1996 the coefficient (.088) is statistically higher than for 1993 (.041).

In Part B of Table 2 we control for potential work experience, expressed as a difference between the current age of the respondents and their age when they left the educational system. We also control for gender. Adding these variables to the equation does not change the impact of education for either 1993 or 1996. For both these years, the impact of work experience is statistically insignificant. The effect of gender on income appears to be very pronounced in 1993. In practical terms being a man yields a 51 percent premium. Although in 1996 the impact of gender on income diminishes considerably, it remains statistically significant, yielding a 19 percent premium.

Since the proportion of the variance explained by education and experience increased in time, *we consider the human capital hypothesis a valid description of reality in Ukraine in the period of 1993-96.* As documented by the adjusted *R* squared, in 1996 the human capital factors were able to account for a higher proportion of the total variation in income than in 1993. The role of the firm and individual specific factors



Table 2

**Regression of Personal Income on Education and Control Variables in Ukraine, 1993 and 1996**

Independent variables	Dependent variable: log monthly personal income					
	1993			1996		
	estimate	standard error	beta	estimate	standard error	beta
A. Education only						
Intercept	8.331	.122	—	7.657	.122	—
Education	.041	.010	.156	.088	.010	.326
Adjusted <i>R</i> squared	.023	—	—	.105	—	—
B. Education, experience, and gender						
Intercept	7.987	.166	—	7.676	.165	—
Years of schooling	.046	.011	.117	.086	.011	.320
Experience <sup>a</sup>	.003	.009	.033	.008	.009	.115
Experience squared (/100)	-.001	.018	-.004	-.010	.018	-.072
Gender (1 = male, 0 = female)	.506	.052	.341	.239	.054	.158
Adjusted <i>R</i> Squared	.136	—	—	.133	—	—
C. Education, experience, gender, and earlier standard of living or earlier earnings						
Intercept	7.730	.165	—	7.597	.178	—
Years of schooling	.044	.010	.172	.080	.011	.312
Experience <sup>a</sup>	.005	.009	.008	-.005	.009	-.079
Experience squared (/100)	-.005	.018	-.004	.006	.019	.042
Gender (1 = male, 0 = female)	.496	.051	.335	.186	.058	.125
Earlier standard of living <sup>b</sup>	.142	.021	.232	—	—	—
Earnings in 1993 (/1000)	—	—	—	.018	.004	.170
Adjusted <i>R</i> squared	.186	—	—	.164	—	—

<sup>a</sup>Experience (potential) = age - years of schooling - 6.

<sup>b</sup>Respondent's subjective evaluation of the change of standard of living in the past three years (from 1 for worse to 5 for better now).

influencing compensation have decreased in the initial phase of the post-communist transition.

The human capital hypothesis holds even if we consider the relative income gains, as evidenced in Part C of Table 2. For simplicity, in the equation for 1996, consider only those whose income in 1993 was on the average level. In standardized form, the value of their 1993 income is zero. Thus, the difference between the 1996 and 1993 incomes is equal to the *z*-scores of the 1996 income. Consequently, the beta coefficients show the proportion of income gains in terms of their standard deviation. For example, in 1996 the increase in education by one standard deviation results in the increase of income gains by .312 of the standard deviation.

The same reasoning can be applied for 1993. Since for this case we do not have earlier earnings, we use a subjective evaluation of the change of standard of living in the past three years. For those who provided this evaluation on the average level, the beta coefficients are interpretable as coefficients referring to the 1993 income gains. For example, in 1996 the increase in education by one standard deviation results in the increase of income gains by .172 of the standard deviation.

Summarizing our analysis of this section, we declare that the human capital hypothesis provides a valid explanation of income gain and losses during the initial phase of the post-communist transformation in Ukraine. During the period 1993-96, the impact of education on income increased in terms of the premiums computed for the beginning and the end of this period, and in terms of the *proportion of an explained variance of income growth*, treated as a dynamic measure.

### Support for Systemic Change and Income Gains and Losses

Systemic change means not only a new pattern of relationships between elements of a system but also the emergence of "new things." We say that people are averse to such change if they perceive more threats within the new system than opportunities brought by it, and if they prefer the old system over a new one. For such people change is worse than no change: they do not know how to cope with new difficulties. We measure support for systemic change on the basis of the following questionnaire items:

1. Changes occurring in our country bring with them both new oppor-



Table 3

**Measurement of Support of Systemic Change in Ukraine, 1993 and 1996**

Questionnaire items	Mean value	Standard deviation	Factor loading
Changes occurring in our country bring with them both new opportunities and new threats. For people like you, do these changes bring more new opportunities or more new threats?	1.46	.74	.801
In general terms, for people like you, is Ukraine of three to four years ago or Ukraine of today a better country in which to live?	1.29	.61	.803
Many people think that they will not be able to cope with new difficulties. Do you think that you will not be able to cope with new difficulties?	2.14	.92	-.537

tunities and new threats. For people like you, do these changes bring more new opportunities or more new threats?

2. In general terms, for people like you, is Ukraine of three to four years ago or Ukraine of today a better country in which to live?

3. Many people think that they will not be able to cope with new difficulties. Do you think that you will not be able to cope with new difficulties?

In 1993 in Ukraine the feeling of fear about the future was obvious: almost 70 percent of respondents perceived more threats than opportunities in coming years. The same percentage of respondents thought of Ukraine in the past as a better place to live than in the present. Surprisingly, the answers pertaining to the last question were, for the most part, more optimistic: almost one-half of the respondents believed that they would be able to cope with difficulties.

We paid considerable attention to the large proportion of respondents (from 24 percent to 35 percent) who answered these ques-

Table 4

**Regression of Support for Systemic Change on Gender, Age, and Education in Ukraine, 1993**

Independent variables	Dependent variable: support for systemic change (1993)		
	estimate	standard error	beta
Intercept	-.602	.236	—
Gender	.275	.075	.145
Age	-.011	.004	-.117
Education	.061	.013	.181
Income 1993 (/1000)	.013	.005	.096
Adjusted <i>R</i> squared	.092	—	—

tions, "I don't know" or "It is difficult to say." After examining how such answers correlate with answers to other questions on similar topics, we decided to treat them as a mid-category. Usually they indicate some ambivalent or equivocal standpoint.

Table 3 provides the mean value for all three questions related to support for systemic change, the standard deviation, and factor loadings. Note that factor loadings are considerably large. On the bases of these scores, we created a three-indicator scale, with mean value equal to zero and standard deviation equal to 1.

Although our scale differs from that developed on the basis of the same data by Slomczynski et al. (1998), there are substantive and formal similarities. Substantively, there is a considerable overlap of items: Our scale lacks only one item that was included in the scale developed earlier. Formally, both scales correlate highly ( $r = .895$ ). As in the case of the previously used scale, economically successful, better educated, male, and younger individuals are more supportive of systemic change than economically unsuccessful, less educated, female, and older individuals. Table 4 shows, however, that the impact of economic success on support for systemic change is much lower than the impact of education. This interstudy difference is partially a methodological artifact, because in the previous study the composite index of economic success was used, while in



Table 5

**Monthly Personal Income by Levels of Support of Systemic Change in Ukraine, 1993 and 1996**

Support for systemic change	Income in 1993 (A)	Income in 1996 (B)	Difference (B - A)	N
A. Mean Value (in constant karbovanets)				
Aversion to systemic change <sup>a</sup>	8,039.2	7,068.0	-971.2	246
Neutral stance <sup>b</sup>	8,374.0	7,656.2	-717.8	176
Support for systemic change <sup>c</sup>	10,579.4	10,620.5	41.1	107
Total	8,784.8	7,962.7	-822.1	529 <sup>d</sup>
B. Income differentials (as percent of total)				
Aversion to systemic change <sup>a</sup>	91.5	88.8	-2.7	246
Neutral stance <sup>b</sup>	95.3	96.2	0.9	176
Support for systemic change <sup>c</sup>	120.4	133.4	13.0	107
Total	100.0	100.0	0.0	529 <sup>d</sup>

<sup>a</sup>Factor scores from -.875 to -.505.<sup>b</sup>Factor scores from -.196 to .482.<sup>c</sup>Factor scores from .700 to 2.890.<sup>d</sup>After leastwise deletion.

the present study we limit this dimension to income. However, both studies established essentially the same patterns of the determinants of support for systemic change.

In Table 5 the high level of support for systemic change means a firm belief in new opportunities, an acceptance of contemporary Ukraine as a relatively good place to live, and optimism about dealing with new difficulties. Conversely, the aversion to systemic change covers fear of threats, adherence to the past, and pessimism toward new difficulties. The neutral stance toward systemic change refers mainly to answers of the type "I don't know" and "It is difficult to say," or to the lack of response to these questions.

Our measure of support for systemic change refers to the begin-

Table 6

**Regression of the 1996 Personal Income on Education and Support for Systemic Change, with Control Variables, Ukraine, 1993 and 1996**

Independent variables	Dependent variable: log monthly personal income in 1996					
	basic model			extended model		
	estimate	standard error	beta	estimate	standard error	beta
Intercept	7.662	.186	—	7.259	.255	—
Years of schooling	.075	.0121	.285	.035	.015	.130
Experience <sup>a</sup>	-.003	.010	-.051	.003	.010	.005
Experience squared (/100)	.001	.021	.010	-.010	.022	-.071
Gender (1 = male, 0 = female)	.154	.061	.103	.118	.062	.079
Earnings in 1993 (in 1,000)	.017	.004	.163	.016	.005	.144
Support for systemic change <sup>b</sup>	.074	.033	.093	.085	.033	.105
Number of jobs <sup>c</sup>	—	—	—	.376	.184	.081
Job complexity <sup>d</sup>	—	—	—	.113	.027	.210
Stable job <sup>e</sup>	—	—	—	.154	.059	.103
Adjusted R squared	.169	—	—	.207	—	—

<sup>a</sup>Experience (potential) = age - years of schooling - 6.

<sup>b</sup>The 1993 scale expressed in z-scores.

<sup>c</sup>1 = one job, 2 = two or more jobs.

<sup>d</sup>Scale of overall job complexity, from 1 to 8.

<sup>e</sup>Respondent's subjective assessment of stability of his or her job (1 = stable, 0 = otherwise).

ning of the 1993-96 period. Over time, we observe an increase in the value of the *eta* coefficient—from .193 for 1993 to .233 for 1996. This means that our psychological variable explains a larger proportion of income variance for the later point in time by about 2 percent.

In comparison with those who were averse to systemic change, persons who supported this change enjoyed much higher income not only in 1993 but also in 1996. Actually, on average, the first

group experienced a significant income loss while the second group experienced some income gain. The intergroup differences are substantial and statistically significant.

### *A Test of the Mental Adjustment Hypothesis*

Table 6 demonstrates that the effect of support of systemic change on income in 1996 is relatively strong even if income in 1993 and education are controlled (basic model). This effect becomes even stronger if other variables enter the equation: number of jobs respondent had in 1996, complexity of his or her job, and its stability (extended model). Thus, we conclude that the *mental adjustment hypothesis should be treated as a very plausible explanation of individual financial success during the post-communist transition*. It supplements the human capital hypothesis.

We will make four additional comments pertaining to the results contained in Table 6. First, in the basic model the return to education amounts to 7.5 percent for one year of schooling. This should be compared to the return of 7.4 percent for one standard deviation on the scale of support for systemic change.

Second, the coefficients for potential work experience are not statistically significant. However, the coefficient for gender is large and statistically significant. In 1993, men obtained 15.4 percent premium in comparison with women, other variables holding constant. This net gender premium diminished to 11.8 percent in 1996.

Third, a conservative test of the mental adjustment hypothesis requires that the alternative hypothesis be treated favorably. For this reason, to give some advantage to a human capital hypothesis, we included into the equation additional variables characterizing the respondents' work situation. Those who performed two or more jobs simultaneously in 1996, those who worked with complex tasks, and those whose jobs were relatively secure gained in income in the past three years. The premium for holding more than one job is 37.6 percent. The premiums for job complexity and a stable job are in the range of 19–15 percent. Since the number of jobs, job complexity, and a stable job are related to skills, they diminish the impact of education on earnings. However, they do not diminish the impact of support for systemic change.

Fourth, we should also note that in their study, Slomeczynski et al. (1998) considered aversion to systemic change as grounded in a deep



psychological structure—that is, depending on personality. In particular, one facet of psychological functioning, usually labeled “fatalism,” was considered to be causally linked with aversion to change. In Ukraine, the correlation between measures of aversion to change and fatalism was noticeable ( $r = .138$ ) and statistically significant (at  $p < .01$ ). For this reason, in our analysis for this article, we also controlled for fatalism in the most extensive model. Since the coefficient for fatalism proves to be insignificant and the impact of our scale of support for systemic change on income in 1996 was not affected, we do not include these results here. For the same reason, we do not include results with variables describing respondents’ views of the reforms in Ukraine. However, it is important to note that the coefficients of the extensive model in Table 6 are stable with additional variables.

## Conclusions

In the Soviet Union, in the 1960s the relatively high correlation between education and income was ensured by centrally regulated mechanisms. These mechanisms eroded in 1980 to the extent that the earnings became almost independent of education. When Ukraine started to build its own economy, it inherited a very distorted labor market. Our study shows that in 1993 education accounted for only 2.3 percent of income variance. During the initial phase of the post-communist transition, education became a commodity to be sold on the labor market for a better and better price. In 1996 Ukrainians had already witnessed the recovery of a substantial and significant education-income relation. In that year education accounted for 10.5 percent of income variance. Between 1993 and 1996 the change proved to be dramatic.

The changes in the income structure emerging in Ukraine are typical of those in other transitional economies in Central and Eastern Europe. The predominant pattern has been summarized as follows:

Virtually all these economies have witnessed a pronounced increase in earnings inequality. The changes of the earnings distribution took place largely at the upper end. While the relative position of low-paid workers somewhat deteriorated, there has been a substantial improvement in the relative status of highly paid workers. In the majority of cases the reason of the widening of wage differentials is a rise in returns to education.

Existing estimates of the earnings function indicate an increase in the rate of return to schooling. (Rutkowski 1996: 101)

This description fits Ukraine in 1993–96 very well.

Analysis of psychological variables shows that support for systemic change is a significant factor of individual financial success, despite the impact of education. During the initial phase of the post-communist transition, adaptive abilities become a matter of primary importance for securing relatively higher income. It was already recognized that those who experienced various difficulties during the first stage of the transformation—unsuccessful in economic terms, poorly educated, females, and older persons—are particularly averse to systemic change (Slomczynski et al. 1999). In this article we have shown that *aversion to systemic change at the beginning of the post-communist transition has a negative effect on the financial standing of people at a later time*. This effect becomes particularly strong when earlier earnings, education, and job characteristics are controlled. Thus, both the *human capital hypothesis* and the *mental adjustment hypothesis* render plausible explanations for income losses and gains in the period of radical social change.

At the beginning of the 1993–96 period, Volovich and Makeev (1993) predicted that in Ukraine during the initial phase of transition overlapping groups of individuals who were educationally and psychologically better prepared for radical social change could locate themselves at the top of a new social hierarchy. They also pointed out that those with less education and those unwilling or unable to accept the transformation might find themselves at the bottom. Interpreting this prediction in terms of human capital and mental adjustment to change, we find strong support for it. We should add that a closer relationship between education and income usually leads to greater economic efficiency and may become one of the major stimulators of the Ukrainian economy. It seems, however, that those who mentally adjust to the post-communist transition will have a larger share in the fruits of economic growth in the meritocratic-oriented society.

## Notes

1. For a basic description of income inequality in the Soviet society, see McAuley 1979; Connor 1979 and 1991; Yanowitch 1977; and Lane 1982.



2. In recent years, various aspects of the public's stance toward the post-communist transformation were investigated through survey methods: see, Duch 1993; Finifter and Mickiewicz 1992; Miller et al. 1994; Rose and Haerpfer 1994; Rose and Mishler 1994; Shabad and Slomczynski 1999.

3. In a dynamic manner, the hypothesis on the impact of economic success on support for change may be inferred from several mobility studies. For example, Goldthorpe (1987) argued that in Great Britain upwardly mobile individuals distinctively reveal a stronger tendency to rely upon their own efforts and to see broader opportunities for individual growth than do downwardly mobile individuals. In Russia, an advancement to a new business class is related to self-directed orientation (Kachanov and Shmatko 1994). In contrast, downwardly mobile persons support guaranteed employment and oppose privatization (Czernysh 1993).

4. This survey was part of a large international project *Social Structure and Personality* involving data from the United States, Japan, and Poland, coordinated by Melvin L. Kohn of Johns Hopkins University. For comparison of Polish and Ukrainian data, see Kohn et al. 1997 and Slomczynski et al. 1998.

5. Ukraine remained in the ruble zone until 1993 when it introduced a temporary currency, the coupon or karbovanets. A permanent new currency, the hryvnia, was introduced in September 1996.

6. The educational system in Ukraine is complex and could thus have led to some confusion during the interview. For example, "completed secondary education" might have been interpreted by respondents in different ways: as vocational school after seven to eight grades of secondary school, vocational school after ten to eleven grades of secondary school, and post-secondary technical school. In the period 1993-96 respondents might have easily substituted one kind of education for another. A careful examination of the data, case by case, convinced us that about 20 percent of respondents might have chosen different educational categories because of response bias. We assumed, that this bias could have some effect on the response bias pertaining to income.

7. The standard deviation of the 1996-93 income difference equals 8,051 and is almost ten times greater than the mean of the difference. The coefficient of determination for the income difference over time and the 1993 income is equal .50.

8. For a description of the educational system in the Soviet Union, see Matthews 1982; see also Gerber and Hout 1995.

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