

Test of Permanent Income Hypothesis on Czech Voucher Privatization

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In 1992 the Czech Republic privatized state assets, which resulted in some citizens receiving an unexpected windfall. Whether the windfall was consumed or saved provides a clear test of the permanent income hypothesis in a transitional economy. Analysis of data from a survey conducted specifically to test this hypothesis indicates that only a small number of transferred assets were consumed, a finding which supports the permanent income hypothesis. (JEL D31, E21, H24)

Since the sudden demise of Communism in the late 1980s economists have regarded the transition from command to market economies in Central and Eastern Europe with intense interest. In addition to studying the transition per se, they have begun using the region as a testing ground to investigate the validity of classic propositions. In this paper the Czech voucher privatization scheme, which transferred state assets to Czech citizens from 1992 to 1994, is used to repeat the classic direct tests of the PIH originally conducted by Bodkin (1959) and Kreinin (1961).¹ The transfer of property to Czech citizens through the voucher scheme was of a windfall nature and should not have been fully consumed under the permanent income hypothesis. Hence we test whether the one-time transfer from privatization was cashed in and consumed and, if it was, at what size.

The upcoming sections contain a brief overview of the Czech economy and voucher privatization process, followed by a discussion of the data set based on a sample survey, an analysis of our findings, and our conclusions.

I. Voucher Privatization Scheme

Prior to the end of 1989, the Czech economy was extremely centralized. The private sector produced only a negligible fraction of GDP (estimates vary from 0.5 to 3 percent), while the vast majority of output came from about 5,000 enterprises, cooperatives and other organizations under state control. Transferring these vast assets from public to private ownership began almost immediately after the Velvet Revolution on November 1989 and proceeded on several fronts. During 1990 and 1991, the former Czechoslovakian's parliament authorized both restitution, which restored small properties to their former owners, and a public auction program called small-scale privatization.² The bulk of the transfer, however, occurred under a program called large-scale privatization, which began in 1992 and involved state-owned enterprises whose worth totalled more than CZK 900 billion (more than \$30 billion).

Although large-scale privatization took several forms, the most common procedure involved first transforming an enterprise into a joint stock company. Almost half the value of state enterprises transformed into joint stock companies was then privatized under the voucher scheme. The first wave took place between May and December 1992 and involved 988 Czech enterprises. The second wave, which was delayed slightly, largely because Czechoslovakia split into the Czech and Slovak Republics in January 1993, added another 676 firms and finished at the end of 1994. With total property transferred worth more than CZK 343 billion (US\$ 11 billion), voucher privatization formed the single most important type of asset transfer, representing over 10 percent of the country assets.

The voucher scheme was organized as follows (chronology is described in Table 1). All Czech citizens over the age of 18 who resided in the Czech Republic (and for the first wave, in the Slovak Republic) could participate in the voucher process. Approximately 6 million Czechs representing 75 percent of those eligible chose to participate. For each wave every eligible citizen was authorized to buy a voucher book that contained 1,000 investment "points" for CZK 1,000 (about one week's wages). Note that the voucher book contained investment points in values of 100, 200, 500 and 1,000; therefore, the smallest bid was 100 points.³

Dividing the total book value by the number of participants gave each voucher book an accounting value of CZK 35,000 in the first wave and 25,000 Kc in the second wave (see Table 2).⁴ We can conclude, therefore, that the financial wealth of individuals increased significantly as a result of participating in the voucher process.

Before the bidding started (January-April 1992), however, individuals had the option to assign some or all of their points to Investment Privatization Funds (IPFs). Prior to this pre- or zero round, these IPFs had to publish basic facts about their ownership and management as well as their investment strategy. In the first wave, about 72 percent of all voucher points were deposited into one of more than 400 privatization funds, but in the second wave, the percentage dropped to less than 64.

After the pre-round (May 1992), at the start of the bidding process, the public was given basic financial information about each enterprise to be transferred including employment, wages, capital, sales, costs, profit or loss, liabilities, foreign trade and ownership structure. Following the pre-round the actual bidding started. In this process citizens and IPFs used their voucher points to buy shares of available firms in a series of price-administered bidding rounds. To avoid end of game problems, the total number of rounds was not set. Nevertheless, observers suspected that the total number of bidding rounds would be between three and seven (Actually, the first wave had five rounds and the second wave ended up with six rounds). One can point out that the process was by no means a standard auction, since investors' bids were quantities and the prices were in fact administered by the privatization authority.⁵

Each bidding round could be divided into four stages. In the first step participants were told the administered price of the shares of each firm and the number of shares offered. Then, participants bid for shares of chosen firms. In the third stage bids were collected, matched and analyzed.⁶ The last stage of the bidding round in fact coincided with the first stage of the next round; results of the bidding were announced and the Price Committee set the prices for the next round.

The bidding rounds continued until the privatization authority revealed the end of the wave when a

negligible proportion of unsold shares along with disposable investment points remained.

The final stage of both waves of voucher privatization was the real transfer of the purchased shares. For each participant, a share account at the Central Register was created, and shares of the companies were transferred to this account by June 1993, for the first wave and by February 1995, for the second wave. Those individuals who allocated part or all of their 1,000 points to (an) IPF(s) obtained the shares of the IPF(s) immediately after the issue (See Table 1 for detailed timing of the transfers).

II. Privatization Transfers and the PIH

When studying the PIH, it is necessary to address the key question of whether a windfall was expected or not. In terms of the Czech voucher privatization scheme, we must take into account peoples' expectations about the program before it was implemented. As we have mentioned before there were two waves of voucher privatization in the Czech Republic, the first in 1992 and the second in 1994. While we can claim that for the first wave the transfers were unexpected prior to when the first draft of the time framework was revealed (August/September 1991), and that the actual value of the windfall was unknown before of trading of shares began on the Prague Stock Exchange (September 1993), it is hard to use that argument for the second wave starting in 1994. Therefore, we will analyze the effects of the windfall from the first wave separately. Moreover, when the bidding process began it was hard to judge when it would end. Experts estimated that it would take between eight and sixteen months to finish the bidding, and another three to six months to place shares on organized markets.⁷

Additionally, as we can speculate from the pattern of voucher book sales (see Table 3), people did not attribute anything special to the voucher book and looked at the voucher scheme as some sort of national lottery. As we can see from Table 3, the first 9.3 percent represents the "good" citizens who bought voucher books because the government said to. The massive gap in buying coincides with the big advertising campaign initiated by the IPFs promising a large return on the initial investment/fee of CZK 1,000.

Therefore, starting at the end of December 1991, people understood that the voucher book should have a certain value and only from this moment forward could they take it as an asset with a positive (unknown) value. In addition, as we can see from the cumulative distribution of consumed windfall (See Figure 1), the observed pattern is consistent with the PIH; note that the break point (September 1993) corresponds to the period when the bulk of shares from the first wave started trading at the PSE, and the spending prior to this period is related to spending of advanced payments provided by several IPFs.

III. Specification of the Test

In the permanent income framework, the voucher privatization transfer itself represented a windfall increase in income, and according to the PIH, should have resulted in increased consumption that was spread out over an individual's remaining life rather than largely being consumed in the years immediately following receipt. On the other hand, expectations of a successful transition may have increased an individual's anticipated future labor and capital income due to rapid growth in the economy. If this individual was liquidity constrained, receipt of the one-time gain from voucher privatization may have enabled him to increase consumption in line with his expectations of greater future income, resulting in the windfall being largely devoted to current consumption. It is appropriate, therefore, to test what fraction of this one-time transfer was cashed in and consumed. The simplest specification for testing the PIH could be written as follows:

$$C_t = \alpha_0 + \alpha_1 Y_t + \alpha_2 W_t, \quad (1)$$

where C denotes consumption, Y is an income and W refers to privatization windfall. The coefficient α_2 stands for the fraction of the total windfall treated as a gain by the general public. This specification raises the Barro-Ricardian question discussed in Barro (1974). While we believe that $\alpha_2 = 1$, the coefficients α_1 and α_2 are not jointly identifiable, and we have two options: 1) assume that $\alpha_2 = 1$ for reasons discussed later and test whether the fraction of consumed windfall is in line with the PIH, or 2) denote $\alpha_1 = \alpha_2$ and estimate

* under the PIH. Since * is in this case identified, we can test if * = 1, to verify to what extent the public treated the privatization transfers as a real windfall.

Although we mentioned several problems associated with share transfers, we should highlight the major point. The vast majority of participants recognized that they had received a windfall, but until they cashed it in they did not know the value. Therefore, we suggest

$$C = \alpha W, \quad (2)$$

to study consumption from the windfall, where C refers to windfall consumed, while W stands for the total windfall. Since we observe C over a period of several years, our null hypothesis can be formulated as follows: Individuals receiving lump sum transfers from voucher privatization will increase consumption spending so as to amortize this income over their remaining life expectancy.

IV. The Data Set

The data for this study were collected in January 1996 by adding a special section to the regular Omnibus Survey (personal interviews) conducted by the research firm Median.⁸ The original sample size was 1,500 individuals, of whom 1,263 (84 percent of the sample drawn) were personally interviewed and verified. As part of the basic survey we had obtained information on respondents' sex, age, income, education, job and place of residence. Differences in characteristics between the actual sample and the Czech population were negligible according to standard tests. Although it is interesting to study reasons why people did not participate in the voucher scheme, it is beyond the scope of this paper. Our analyzed sample was reduced to approximately 75 percent of the original sample size by excluding of those who did not participate in voucher privatization. This was done for the following reasons. First, we wanted to study consumption from the privatization transfers and second, as we were told by the firm doing the survey, the missing data from the original sample drawn could be attributed mostly to two groups of "outliers": a) very old people, Gypsies, etc., basically people not very connected to society; and b) very busy people, usually newly incorporated

individuals who felt their time and other activities had much higher value than any possible return from the voucher scheme.

After determining whether the respondent had participated in the voucher process, we asked those who had how much of their receipts from voucher privatization had been (a) spent on goods and services,⁹ (b) invested elsewhere, (c) transferred to newly emerged pension funds,¹⁰ (d) given to a family member, and (e) retained in their original form as an investment. Windfalls that were cashed in were converted to 1995 Kc using the official Consumer Price Index for the date on which they were converted to cash.¹¹

Responses pertained to the full period between the beginning of voucher privatization, i.e. December 1991, and the survey in January 1996 (a period of four years). Respondents could convert their windfall into cash either by accepting shares and then selling them in the secondary market or by accepting advance payments from IPFs in return for pledging their shares to these funds. Given that a relatively liquid secondary market developed shortly after distribution of firm and IPF shares, the transfer could be regarded as equivalent to cash income. In order to limit problems with people's expectations of the privatization transfers, we focused only on results for the first wave of voucher privatization.¹²

V. Results

First, we looked at the different behaviour of various income groups. It is very likely that low-income individuals would tend to spend a larger share of their windfall than higher income ones. We divided the population into four monthly earnings categories: up to 5,000 Kc, 5,001-8,000 Kc, 8,001-12,500 Kc, and 12,501 Kc or more.¹³ The size of the windfalls, across the four income groups, for those who participated in the voucher process and knew the size of their windfall is shown in Table 4.

Both the mean and the variance of the windfall rise with income.¹⁴ Similar results are found with respect to education, where the mean (median) windfall for those with a basic school education was 13,600 Kc (11,500 Kc), a figure that increased to 15,000 Kc (11,900 Kc) for those with a high school education without

exams,¹⁵ 19,900 Kc (12,600 Kc) for high school graduates with exams, and 24,600 Kc (16,300 Kc) for university graduates. It can be argued that higher income (and better educated) groups allocated their vouchers or timed the disposition of their shares better.

Table 5 reports the first test of the PIH by showing how respondents reported using their windfalls. The key result is that only a relatively small number of individuals reported spending a part of their windfall on goods.

The basic test of the PIH is based on the prediction that under the PIH all transitory income is spent over the entire remainder of an individual's life. This suggests that the windfall from voucher privatization should be used to increase consumption throughout an individual's life. The population was grouped by age and sex, and the life expectancy for each group was determined using standard life tables from the 1996 Czech Statistical Yearbook. One central issue of our analysis is how to treat missing values. In an explanatory note from the firm making the survey it was argued that, many respondents indicated that they treated the shares from voucher privatization as an increase in their assets that they would spend later and that, since they did not follow the stock market, they did not know the actual value of these shares. On the other hand, those who spent a large portion of their windfall would have been likely to know how much was available to them and report a true value for its size. This pattern suggests that missing values are unlikely to be random.

There are three possibilities for dealing with these missing values. First, we could apply a Heckman (1979) two-step procedure (later labeled Heckman or H), using a probit equation to predict those who have no missing values and then analyze the consumption of this set including a sample correction variable. Second, we could perform the analysis using only the sub-sample with fully defined values (labeled as assumption A or A). Finally, we could use the full sample of those who participated in the first wave, replacing the missing values with appropriate predictions (labeled as assumption B or B). While the mean value of the windfall for individuals in the same income group would seem to be an appropriate value to substitute for missing windfalls, as we have argued above, the mean value of consumption is inherently

inappropriate for those who do not know this value. Indeed, these respondents are likely to have no consumption at all from their windfall.

Note that for some age groups estimated Heckman's selection equation fits presence of missing values extremely poorly (age 26-35), indicating either that the missing values were randomly distributed or that they were determined according to factors not captured in our data set.

The fraction of the individual's windfall that should have been spent during the four-year period covered by the survey, if the individual had annuitized the windfall over his or her remaining expected life, was calculated under the assumption that real interest rates were 5 percent.¹⁶ The annuitized value, a^* , was compared with the estimated fraction of the windfall spent over the same period according to the following model:

$$C = \alpha_M W(\text{Sex} = M) + \alpha_F W(\text{Sex} = F), \quad (3)$$

where C denotes the windfall consumed and W stands for total windfall.

Table 6 reports the estimates of α_M and α_F as well as the annuitized value a^* for several age and sex groups. We are of opinion that the results are consistent with the PIH. The fraction of the windfall consumed grows with age, as would be predicted from the lower remaining life expectancy of older consumers. More critically, under the treatment of missing values we regard as more appropriate (assumption B) the annuitized fraction of the windfall that should have been spent according to the PIH falls within the 95 percent confidence interval surrounding the estimate of the fraction of voucher privatization windfall actually spent for consumption for almost every age and gender group. Two relatively meaningless exceptions are women over age 66 (who consume too little based on their remaining life) and men aged 36 to 45 (who apparently also consume too little), although the annuitized amount falls within the 90 percent confidence interval surrounding the estimated share spent on consumption.

The most interesting apparent deviation occurs for both men and women aged 26 to 35, who apparently consume more than they would if the windfall were annuitized. The results for this group may represent the

fact that they were the most likely to use their windfall to finance a start-up enterprise.¹⁷ In addition, this finding is still fully consistent with the PIH, however, if this group is at a stage in their life-cycle where without the windfall, they would be borrowing to finance consumption associated with family formation, etc. Indeed, the PIH predicts that individuals who would otherwise borrow to finance consumption would consume the windfall up to the level equal to the annuitized fraction of the increase in lifetime income plus the full amount of the previously planned borrowing for consumption. Greater consumption would then be financed not from investing the windfall, but from avoidance of future repayment obligations for debts that would have been incurred without the windfall.

V. Conclusions

The Czech Republic has several strong advantages for the purposes of our analysis. First, the privatization process was transparent and occurred relatively quickly. Second, both the economy and consumer behavior have been very stable. Third, out of a total population of ten million Czech citizens, an astonishing six million, that is virtually every household, participated in the scheme. Fourth, the privatization transfers were unexpected before the voucher scheme actually started and the value of a windfall was not known until the shares began trading at the Prague Stock Exchange. In comparison to both Bodkin and Kreinin's studies, which dealt with only a small fraction of the population,¹⁸ Czech voucher privatization provides a sample for testing the PIH almost equivalent to a full population, thus avoiding problems with the distribution of windfalls.

The macroeconomic situation in the Czech Republic was stable throughout the entire period studied. For the purpose of our analysis we should mention four main points: 1) a stable inflation rate and a positive and stable interest rate for prevailed savings; 2) a majority of Czechs had positive savings prior to the voucher scheme (so liquidity constraint should not be very significant); 3) Figure 1 does not show any unusual

spending related to the only significant shocks that occurred in January 1993 (the introduction of the VAT and the split of Czechoslovakia) and 4) there was a very low and stable unemployment rate (below 4 percent), therefore no precautionary savings were needed.

When analyzing a transfer from the state to individuals, the Barro-Ricardian question of whether the public perceives the transfer as an increase in net wealth (Barro, 1974) must be considered. It can be argued that the state is only divesting itself of assets that would otherwise provide a future source of transfers. In other words, assigning these assets to individuals creates an offsetting change in the present value of potential future transfers, hence individuals are no better off after the transfer.

Several arguments exist to the contrary, however. First, changing inefficient state-owned enterprises from public to private hands should lead to higher efficiency. This occurrence alone increases the value of enterprises to citizens and creates a windfall increase in their portfolios. Second, and more important, the state and individuals had very different preferences during the transition. Despite government propaganda, it is doubtful that citizens of former Communist countries viewed government-owned enterprises as being operated in the citizens' best interest. Moreover, it is unlikely that the public saw the sophisticated links between the state budget, state-owned enterprises, and transfers to individuals. Third, these enterprises were neither the most important nor the only source of budget revenue. Finally, the transfers were not equal across the population. In addition, as can be seen from Table 6 and equation (2), α is identified under PIH, and therefore null hypothesis $H_0: \alpha = 1$ is not rejected. It shows, in other words, that under PIH, the public treated the privatization transfers as a real windfall.

Several problems remain, nonetheless, in implementing a direct test of the PIH using the Czech voucher program. First, the transfer occurred over more than two years as citizens exchanged their vouchers for shares in companies or shares in investment privatization funds (IPFs) offered under the scheme. Second, three types of windfalls were involved: (1) outright advance payment for vouchers offered by some IPFs; (2) shares in IPFs for those who assigned their points to these funds; and (3) shares in companies. For

simplicity's sake, liquidity constraints are not taken into account, and we consider only the real value of the transferred windfall.¹⁹ Third, and most important, based on the sample survey we cannot separate the substitution effect, i.e., we do not have any evidence to show if an individual used instead of his windfall, personal savings for consumption. Nevertheless, the savings rate for households and individuals was stable during the period studied except for a fall and steep rising in 1996-1997 which can be attributed to a lack of trust in banks, after several bank failures. After several actions of the central bank, the credit of banks was restored, and withdrawn money appeared in deposits again. Another reason why we do not believe that substitution effect played a significant role is a general suspicion of (young) financial markets in the Czech Republic. In other words, cashing in the windfall usually occurred prior to spending money from bank accounts. Finally, the survey does not contain information on dividend distribution, perhaps not so crucial, since in the first years only very few firms paid dividends, and dividend yield has been negligible (Prague Stock Exchange Annual Reports, 1993-1995).

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Table 1. Chronology of Voucher Privatization. The First Wave

Time framework of Voucher Privatization Revealed	8/91 & 9/91
Purchase and Registration of Voucher Books	11/1/91 - 2/15/92
Advertising Campaign of Privatization Funds	12/91 - 2/92
Assignment of Vouchers to Funds (If Desired)	3/1/92 - 4/26/92
Announcement of Participating Companies	5/13/92
Round 1	5/18/92 - 6/08/92
Round 2	7/7/92 - 7/28/92
Round 3	8/26/92 - 9/15/92
Round 4	10/14/92 - 10/27/92
Round 5	11/23/92 - 12/4/92
Distribution of Shares (Companies)	5/93 & 6/93
Issue of IPFs Shares	7/93 - 10/94
Trading of Voucher Shares	since 9/93

Source: Kuponova Privatizace [Voucher Privatization]

Table 2. Basic Facts about Czech Voucher Privatization

	Wave 1	Wave 2
No. of State Enterprises Entering the Voucher Scheme	988	861
Book Value of Shares Allocated for Voucher in the Particular Wave (CZK billions)	212.5	155.0
Millions of Participating Citizens	5.98	6.16
Average Accounting Value of Assets per Participating Citizen (CZK)	35,535	25,160
% of Voucher Points with Privatization funds	72.2%	63.5%

Source: Center of Voucher Privatization

Note that in addition to 676 new firms the second wave also included shares in 185 firms with a book value of 24.4 billion CZK unsold in the first wave.

Table 3 Pattern of Voucher Book Sales (percent). The First Wave

	Czech Republic	Slovak Republic
November 1993	2.9	2.0
December 1993	4.4	3.4
January 1994	88.1	89.1
February 1994	4.6	5.5

Source: Kuponova Privatizace [Voucher Privatization]

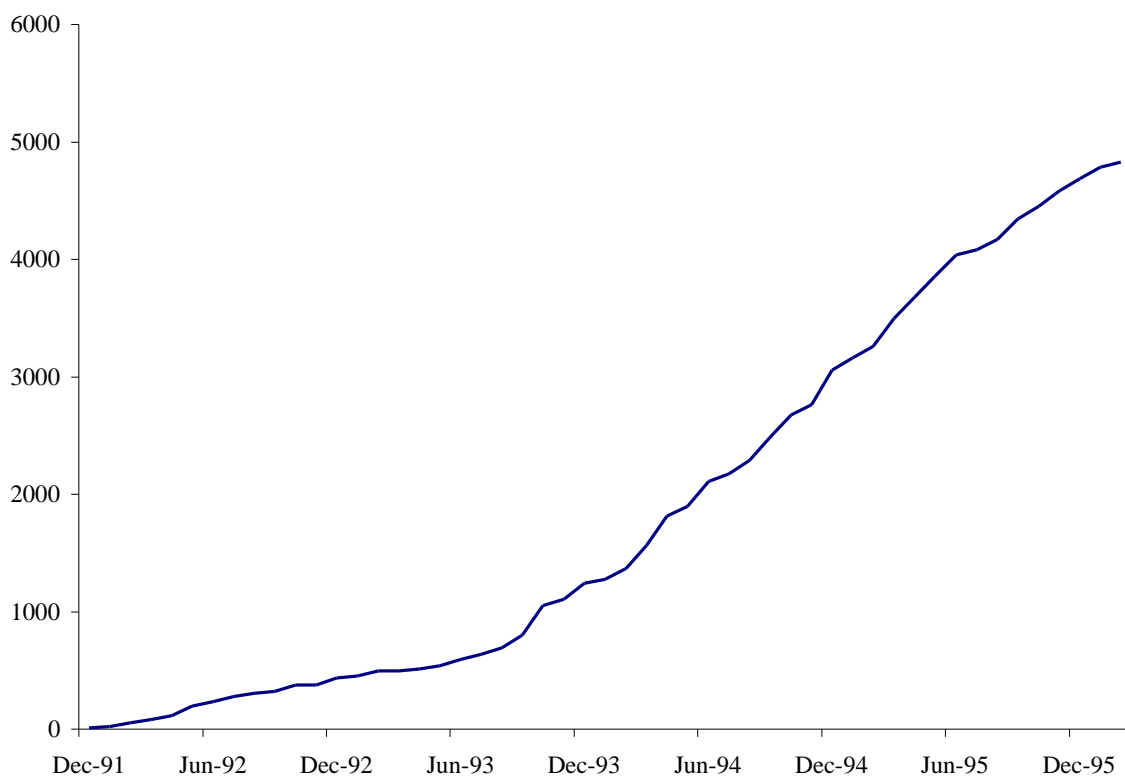
Table 4. Survey Results: Windfall from First Wave of Voucher Privatization (in thousands of Kc)

Income category	Observations	Mean	Median	Std. Dev.	Minimum	Maximum
< 5,000 CZK	210	14.30	11.72	10.08	0.98	82.83
5,000-8,000 CZK	149	15.56	12.13	13.60	1.98	110.13
8,000-12,500 CZK	66	20.56	12.34	20.39	0.96	121.63
> 12,500 CZK	35	31.84	14.54	31.84	5.64	411.37
TOTAL	460	16.94	12.13	22.94	0.96	411.37

Table 5. Survey Results: Handling of the shares from the 1st and 2nd waves of voucher privatization (a set of consequent questions)

Question	Wave 1			Wave 2		
	Yes	No	N/A	Yes	No	N/A
VP shares equivalent to a term deposit	43	36	21	62	21	17
VP windfall used to buy non-durables	27	48	25	13	62	25
VP shares turned into another investment	10	63	27	4	70	26
VP shares transferred into a pension fund	0.3	71	29	0.4	73	27
VP shares given to family members	3	68	28	2	72	26

Figure 1. Cumulative Distribution of Consumed Windfall (the First Wave Transfers)



FOOTNOTES

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¹ Bodkin used transfers to war veterans who received an unexpected National Service Life Insurance Dividend in 1950, while Kreinin dealt with war reparations paid by Germany to Israeli citizens in 1957-58.

² Estimates of the amount of property involved in restitution are sketchy since implementation was carried out by direct negotiation between current and former owners. At least 200,000 claims for agricultural land were settled during 1992 to 1996 and about 70,000 apartment buildings were returned to their former owners. Assets transferred through small-scale privatization programs amounted to approximately 30 billion CZK (\$1 billion).

³ In other words an individual's portfolio could be diversified into up to 10 different items, including shares of companies and investment funds.

⁴ We adopt standard Czech monetary notation. Prior to the split of the country the Czechoslovak koruna (crown) was abbreviated Kcs (CZK), placed before the numeric figure. After January 1993, the Czech koruna was abbreviated Kc and placed after the numerals. The mean value calculated one year later on the Prague Stock Exchange totaled about 60 percent of the book value for each wave. Therefore, the value of the assets received was more than 15 times the registration fee.

⁵ For a thorough discussion of the Czech bidding scheme, see Allen and Smidkova (1998), Hanousek and Kroch (1997), Filer and Hanousek (1997) and Singer and Svejnar (1994) among others.

⁶ The rules for accepting bids were as follows: If bids for a firm did not exceed its supply of shares, these demands were satisfied and the remaining shares were deferred to the next round. If the demand for a firm's shares exceeded supply by less than 25percent and the clearing of the market could be realized by prorating the IPFs' demand, then individual investors had their demand met while IPFs were rationed proportional to their bids. In such a case, all shares were sold and the firm was not available for purchase in the succeeding rounds. If demand overshoot supply by more than 25 percent, then no bids were accepted and all shares were deferred to the next round.

⁷ Note that the PSE was re-opened on April 6, 1993, but the bulk of shares coming from the first wave of voucher privatization began trading in September 1993.

⁸ Median is one of the major firms doing surveys in the Czech Republic. It specializes in media research and public opinion polls.

⁹ Note that in the Czech language it is hard to distinguish between durable and nondurable goods. Interviewers were instructed to try to explain that durable goods such as automobiles should be considered investments, but many respondents probably included them among other goods, thereby biasing the results reported below against the PIH.

¹⁰ There was a reason to shift assets into these funds to receive government matching funds provided to those who contributed to pension funds.

¹¹ .

¹² Nevertheless, including the second wave windfall in our computation did not change our findings.

¹³ Average monthly earnings in 1995 were about 8,000 Kc while the exchange rate was US\$ 1 = 26.6 Kc.

¹⁴ This result holds for the median windfall as well as the mean.

¹⁵ A proxy for vocational rather than academic training.

¹⁶ This seems an acceptable assumption given that the Czech Republic, like most emerging markets, suffers from a severe shortage of capital, and it is consistent with values in other emerging markets. Moreover, since a significant part of the windfall consists of shares, we should take into account mean returns in the Czech capital market. For example, the main index of the Prague Stock Exchange — PX50 — rose from 335.2 (September 1993) through 437.9 (January 1996) to 539.6 in December 1996.

¹⁷ The number of incorporated individuals totalled 892,000 in 1992 and 1 million in 1995, while the number of corporations increased from 57,000 in 1991 to 196,000 in 1995.

¹⁸ Note that only 4 percent of the Israeli urban population received personal restitution from Germany, while the number of veterans who received the National Service Life Insurance Dividends amounted to less than 9 percent of the U.S. population and were concentrated in certain age groups. In other words, both windfalls influenced a much smaller portion of the population than the Czech voucher transfer.

¹⁹ In general, advance payments were fully liquid, and shares in investment funds were less liquid than most shares of privatized companies.

Appendix. Part B of the questionnaire (related to the first wave)

We received the following information regarding the first wave. Similar question were asked for the second wave (denoted C):

B01 Did you participate in the first wave of privatization?

B02 If you did not participate in the first wave, can you explain why?

B03 How did you invest your voucher points in the first wave:

(a) yourself as an independent DIK (a holder of investment vouchers, abbr. from Czech)

(b) through an investment privatization fund

(c) combination (a part independently, another part through a fund)

B04 Which reasons contributed to your decision to invest vouchers yourself?

(a) you had enough information on companies

(b) you understood the process of privatization

(c) you believed you would be able to choose well

(d) you were disgusted with marketing by investment privatization funds

(e) you did not believe in credibility of funds

(f) other - which one(s)

B14 Shares acquired in the first wave of privatization:

	Amount in ,000 Kc	month, year
you hold as an equivalent of saving account		
you sold to spend on nondurables		
you sold and invested in a different way		
you transferred to a pension fund		
you transferred to (a) family member(s) as a gift		

Basic facts:

Gender

Age

Education (primary, secondary, secondary with diploma, university)

Present employment - specify (in detail)

Position (student, employee, a member of cooperative, entrepreneur without employees, entrepreneur with employees, household keeper, unemployed, working in retirement age, non-working in retirement age)

Income range (>5,000,<20,000)

Location (permanent address)

Size of municipality (as regards the permanent address)