The Informal Economy in Central Europe and the Baltics

CHAPTER 6

Why People Evade Taxes in the Czech and Slovak Republics: A Tale of Twins

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Introduction

This paper asks why people in the Czech and Slovak Republics evade taxes. We find that taxes may be of secondary importance in determining why people evade. The morality of evaders and their opportunities for evasion may in practice take precedence in the decisions people make on evasion.

Why people evade is a growing field of empirical research which is usually carried out with the help of questionnaires, administered by professional survey departments. We followed the spirit of these past surveys and commissioned a survey of Czechs and Slovaks in the year 2000. Ours is the first one of this sort for both countries and as such it adds to the growing body of international evidence on tax evasion.

Our survey is unique - it studies two nearly identical countries which were parts of the same state and which broke apart in 1992. The Czech and Slovak Republics are an example of what Ashenfelter has called "twins." Twins separated at birth are ideal for the study of natural experiments: one of them can be viewed as the control and the other as the experimental subject. When the Czech Republic and Slovakia had officially split in 1993, they shared similar demographics, culture and language, but set out on different political and economic paths. Slovakia chose a policy of high taxes and stern enforcement while the Czech Republic decided to keep taxes low and enforced their payment laxly. This divergence in tax policies between two nearly identical countries allows us to examine, without complicated methods of control, how tax policy influences tax evasion.

Control and experimental groups can only answer questions about how different policy treatment of the groups leads outcomes to differ. If we wish to understand other

reasons why people evade taxes we must search our survey for a link between evasion and variations in demographics and in beliefs about the morality of evasion and the chance of apprehension. Using simple cross-tabulations as well as more complicated multivariate methods, we find much in our survey to confirm stylized facts about evasion, which Andreoni et al. (1998) have catalogued.

We begin our paper by giving an overview of tax evasion in the Czech and Slovak Republics. We want to closely compare what our data tell us with stylized facts about evasion that have emerged in the last 20 years of research. Our main benchmark against which we will compare our data is research done on US TCMP audits. US data are the best known and most studied. These data must figure in any comparison with data from transition countries. With several exceptions we find that Czechs and Slovaks evade in patterns similar to those of Americans. Once we have established the ways in which our sample compares to stylized facts about evasion, we see what light our sample sheds on the controversial questions in tax evasion.[1] One of the most contested issues in the analysis of tax evasion is whether high taxes encourage evasion. As Andreoni et al. (1998) write, "Theoretical models generate no clear predictions on the effects of tax rates on compliance. The presence of both income and substitution effects complicates the analysis, and special assumptions about the form of penalties, distribution of income, and shape of preferences are often required to identify any comparative statis." Complicated econometrics have generally been required to isolate the effect of taxes on evasion. We believe that Czech and Slovak data may, with less arduous treatment, yield information on the link between taxes and evasion because of the possibility that both countries were "twins" when they separated. The latter part of our paper explains why we believe the Czech and Slovak Republics are similar enough to warrant being called "twins". We explain that they resemble each other along dimensions which are relevant to tax evasion. We then discuss how separation between the two countries and the ensuing difference in tax policies influence tax evasion. We find that the most important determinant of tax evasion in the case of the Czech and Slovak Republics is not a divergence between tax rates, but rather the difference in opportunities for tax evasion in each country.

Data Challenges and Survey Methodology

As Giles (2000) explains, there are several ways to measure tax evasion: tax audit surveys, money demand methods, latent variable techniques, tax overhang methods, labour force surveys, and surveys asking individuals how much they evade. Surveys are useful for understanding why individuals evade taxes at any point in time whereas macro-methods, such as latent variable analysis and tax-overhang approaches, are more appropriate for time-series analysis of tax evasion.

[1] An overview of the related subject of corruption in the Czech Republic is offered in detail by Lizal and Kocenda (2001).

At present, the only official estimates of the underground economy for the Czech and Slovak Republics are those of the Ministry of Finance which is primarily concerned about collecting unpaid backtaxes from firms. Until our survey was done, there were few independent academic estimates of the size of tax evasion in the Czech and Slovak Republics. There is a similar dearth of such estimates for other transition countries, yet understanding how tax evasion is evolving and why it evolves as it does is crucial for governments wishing to provide public goods at a reasonable tax-plus-deadweight cost.

We have chosen the survey method of analyzing tax evasion because this method is rich in demographic information. We can use demographic information to see what characteristics of respondents are associated with evasion. The survey method also allows us to ask respondents what they believe the probability of being caught evading is and what penalties they believe they face, whether they believe evasion to be moral, and whether they believe their wealth needs to be safeguarded by tax evasion. These subjective data allow us to probe the effects of incentives on the decision to evade. Survey data suffer from the lies respondents tell. We shall see that, even though lying may pervade the data, solid relations emerged between the questions we asked and whether people evaded.

In Western countries survey companies usually call respondents on the telephone. Czechs and Slovaks distrust phone surveys. The firm MEDIA carried out face-to-face surveys on a random stratified sample of 1,062 Czechs and 524 Slovaks. We include the questionnaire in Appendix B to the present paper. The standard demographic questions need no explanation.

The main problem we faced was in knowing how much tax people evade. The obvious problem when asking people about their participation in the underground economy is that they will be reluctant to confess their participation. Our survey tackles this problem in stages. First, we ask respondents whether they know of anyone who has participated in the underground economy. Respondents might not feel ashamed about answering this question honestly. Knowing people who participated in the underground economy could be a weak signal that the respondent also participates. Next, we ask whether the respondent has ever bought goods or services in the underground economy. Finally, and this is perhaps the question to which respondents will give the least honest reply, we ask whether they have themselves ever participated in the underground economy and what is the nature of this participation.

Table 1 summarizes the first ("soft") level of inquiry of our survey. Rows 1 and 2 show the answer to what people thought about the size of the underground economy. If people are rational observers of their surroundings, their opinions about the size of the underground economy might be a fair estimate of the actual underground economy. Giving an opinion about the size of the underground economy is not likely to threaten a respondent, so that we can expect the answers to be honest. Slovaks had a significantly larger estimate of the size of the underground economy than Czechs. This is a first, tentative sign that Slovaks evaded more taxes by the end of the 1990's than did Czechs.

This judgment rests on the assumptions that people can form consistent estimates of the size of the underground economy and that Czechs and Slovaks are similar in the way they form their judgments. We will justify the latter assumption later in the present paper.

TABLE 1: "SOFT" MEASURES OF PARTICIPATION IN THE UNDERGROUND ECONOMY

Survey question	*CR*	*SL*	*Significant difference*
Percentage of adults in country having unreported income (variable **A7** in appendix)	38.3	42.7	**
Percentage of neighbors having unreported income (variable **A8** in appendix)	33.2	38.8	**
Ever bought undeclared goods/services (variable **B1** in appendix)	9.4	5.0	

Source: Survey data, authors' computation

Row 3 of Table 1 summarizes the answers to more intimate questions than those summarized in rows 1 and 2. Here we ask whether the respondent has ever bought goods in the underground economy. The level of threat to respondents here is greater than in the questions in rows 1 and 2, but still fairly mild, as there is no effective legal sanction for those who buy goods from producers who evade taxes unless the law forbids the sale of these goods. There is no significant difference between what Czechs and Slovaks answered. Both groups claim with equal frequency to have bought from the underground sector. There is no contradiction between the finding that Czechs and Slovaks buy equally from the shadow sector and the earlier findings that Slovaks believe the percent of people with income from the shadow economy is higher than for the Czech Republic. Our questions to respondents up to this point in the discussion have been sufficiently vague to allow for several interpretations. Czechs and Slovaks may buy equally from the black market but Slovaks may spend more in their purchases. To get a more precise idea of how much tax people evade than the answers given to the questions in Table 1, we need to put the question of evasion to respondents baldly and hope that some respondents accept to answer our questions.

The most intimate questions in our survey ask the respondent with what frequency he has worked and not declared his income and how much money he earned from activities upon which he did not declare to the tax authorities. Table 2 shows that consistently throughout the 1990's Czechs declared working in the underground economy with greater frequency than did Slovaks. For all three categories and for each period the difference between the Czech and Slovak Republics was significant – at least 5 percent.

TABLE 2: PERCENT OF RESPONDENTS ANSWERING THE QUESTION "HAVE YOU EVER BEEN ENGAGED IN THE UNDECLARED SECTOR?" (Variable C01 in appendix)

Intensity of participation	*CR 2000*	*SR 2000*	*CR 1999*	*SR 1999*	*CR 1995*	*SR 1995*
Often	3.5	1.3	3.3	1.3	2.7	1.1
Occasionally	21.7	13.5	17.3	10.4	12.7	8.0
Never	74.8	85.2	79.4	88.3	85.4	90.9

Source: Survey data, authors' computation

Table 3 breaks down undeclared income into different income categories. Once again all differences are significant.

TABLE 3: PERCENT OF RESPONDENTS ADMITTING TO UNDECLARED INCOME WITHIN CERTAIN RANGES (Variable C12 in appendix)

Income range	*CR*	*SR*
<10,000 – 15,000 Crowns	34.8	44.8
10,000 – 15,000 Crowns	10.8	6.0
15,000 – 20,000 Crowns	11.1	7.0
20,000 – 25,000 Crowns	5.5	3.0
25,000 – 30,000 Crowns	7.3	4.4
30,000 – 35,000 Crowns	3.3	0.5
35,000 – 40,000 Crowns	4.6	4.1
>40,000 Crowns	5.6	3.6

Source: Survey data, authors' computation

Finally, we asked people the number of hours, on average, which they evaded per week. For the Czech Republic the average among those who answered this question was 3.2 hours and for the Slovak Republic this number was 5.7 hours. This result, combined with the data in Table 3, suggests that even though Slovaks work more hours on average in the underground economy Czechs engage to a greater degree of high level tax evasion than Slovaks. The columns in Table 3 do not add up to one hundred percent because some of those surveyed did not respond to our questions. How do we piece these findings together with the finding in Table 1 that Slovaks estimate the number of people deriving shadow income to be higher than what Czechs estimate? We can interpret these results saying that more people may be engaged in the shadow economy in Slovakia, but in the Czech Republic the level of tax evasion is higher.

Once again we must be careful not to consider the estimates of tax evasion in the above tables as 100 percent accurate. Respondents might tell us how much they evaded but there are two problems we must recognize while interpreting their responses. The first problem with the estimates in Table 3 is that people lie about their incomes. Horry,

Palda, and Walker (1992) found that in surveys of consumer finances for Canada respondents consistently underreported their incomes by 10 percent. They were able to arrive at this conclusion by comparing GDP imputed from the Canadian survey of consumer finances with GDP derived from the national accounts. If people lie about their legitimate income, chances are they will also lie about their shadow income. The second problem with the estimates in Table 3 is that some respondents chose to answer how much they evaded and others chose not to answer. The self-selection of responses is a warning that our sample of answers may not be representative of the population of answers. The direction in which this potential selection bias might go is not clear. Those who answer may have less to hide than those who do not answer. In this case answers would underestimate the size of tax evasion. If the biggest tax evaders are also the least risk averse people, then sample selection could have an upward bias on our estimates of the underground economy. If those who answered how much they evaded are a random mix of the above two types, then our estimate of the size of tax evasion will not be biased but may suffer from a large variance. These problems can damage attempts to measure the size of tax evasion but do not fuzz the answers to other questions. One question we seek to answer is whether the tax evasion of Czechs and Slovaks diverged after their countries split in 1992. Provided the direction of bias is the same in both countries, the bias will wash out when we measure differences between both countries.

Perhaps the most complicated problem posed by our measures of tax evasion is that it is difficult, if not impossible, in a survey to ask people exactly how much they evaded. We can pose questions about the range in which their evasion might fall but this form of question bunches all the highest evaders into one group. We have no idea of the upper limit of evasion in this highest group. Questions about how often people evade give us an idea of the number of people participating in the shadow economy but once again, their answers do not accurately weigh the degree of their involvement. These potentially frustrating aspects of the survey data are standard in this area of research and force us to dose our findings with a heavy degree of interpretation and nuance.

Comparison to Established Stylized Facts

Demographics

Now that we have explained how we measure evasion, we can look at simple averages in our data to see if evasion in the Czech and Slovak Republics is similar to what are now well-established stylized facts on international, and especially US evasion. The first question of interest is the influence of demographics on evasion. Tables 4(a) and 4(b) confirm several stylized facts known from analysis of US TCMP data. First, evasion seems to be mainly the business of men in both the Czech and Slovak Republics. This result is in line with Baldryís' (1987) experimental work. Households

whose head is married are strong evaders. In line with TCMP data is our finding that after the age of retirement tax evasion drops radically. The effect of education and age on evasion is not established in the research literature. We find no clear relationship between evasion and education, and age, at least, at this very basic level of analysis. We find that those who are unemployed or own their own businesses are categories of workers with the highest proportion of evaders. This finding is in strong agreement with General Accounting Office (1990) analysis of 1985 TCMP data.

Perceived Penalties and Audit Probabilities

Scholz and Pinney (1993) surveyed individuals and found little relationship to what people believed to be the probability of audit with the true probability of audit. In their expectations, people tend to grossly overestimate the probability of audit. Czechs cited an average probability of being caught evading taxes of 43.6 percent while Slovaks cited a probability of 43.9 percent. Whether this is an accurate estimate or not, it is hard to gauge. Though we were not able to establish an accurate figure, discussion with Ministry of Revenue officials revealed that a minuscule fraction of tax returns in the Czech and Slovak Republics are audited. The case is similar to that of the US where according to Andreoni et al. (1998) in the mid-1990s 1.7 percent of the returns were audited. Still, of those audited, a large fraction may be subject to penalty. Perhaps our respondents were thinking of the probability of being caught if one is audited. Our survey questions were not precise enough to refine our interpretation. Our data is not completely dumb on this point. Table 5 shows that those who evaded often had far more precise estimates of the probabilities of apprehension than those who evaded occasionally or not at all. This fits nicely with the view that those who are active in a market will have a better sense of the size of that market than those who prefer to get their news of the world from the morning papers. We also found that those who did not respond to the question of precisely how much undeclared income they earned had estimates of the penalties and probabilities of apprehension similar to those who responded that they evaded often or sometimes.

There are no studies, of which we are aware, which assess the accuracy of penalty assessments by taxpayers. In our survey we asked each respondent what he believed was the fine for delaying payment on 100,000 crowns of taxes owed to the state. The actual penalty is 20,000 crowns if the taxpayer himself brings his evasion to the attention of the authorities and 100,000 if the authorities discover his evasion. The average value cited by Czechs was 29,500 crowns while that cited by Slovaks was 28,600 crowns. Given that our survey question was not precise enough to distinguish between the two types of penalty, the answers given by Czechs and Slovaks seem remarkably well-informed. There was no statistical difference between the answers given by both groups. We were not able to establish the average penalty, but tax evasion officials confirmed with us that the estimates survey respondents gave us were not far off the mark.

TABLE 4A: STRUCTURE OF THE INFORMAL SECTOR IN THE CZECH REPUBLIC: RELATIVE % SHARES

			Active engagement in informal activities			*Puchase of informal*
	Total Sample		*Total % of individuals*	*Informal Salary (CZK)**		*goods/services*
				<10000	*<10000, 25000)*	*> = 25000*	*Total % of individuals*
Total	*1062*		*267*	*93*	*73*	*54*	*524*
% share of total sample	*100 %*		*25 %*	*9 %*	*7 %*	*5 %*	*49 %*
% share of informal sector			*100 %*	*35 %*	*27 %*	*20 %*	
		100 %	100 %	100 %	100 %	100 %	100 %
Sex							
Male	530	50 %	67 %	59 %	71 %	76 %	52 %
Female	532	50 %	33 %	41 %	30 %	24 %	48 %
Age							
18 to 24 years	183	17 %	22 %	31 %	19 %	19 %	17 %
25 to 39 years	338	32 %	35 %	27 %	38 %	41 %	35 %
40 to 59 years	440	41 %	40 %	40 %	40 %	39 %	41 %
Older than 60	101	10 %	3 %	2 %	4 %	2 %	6 %
Status							
Married	635	60 %	55 %	46 %	62 %	59 %	60 %
Single w. partner	61	6 %	7 %	9 %	5 %	9 %	6 %
Divorced/widow (er)	152	14 %	13 %	14 %	15 %	9 %	15 %
Single w/out partner	214	20 %	25 %	32 %	18 %	20 %	19 %
Level of education							
Primary	256	24 %	26 %	27 %	26 %	24 %	25 %
Without GCE	396	37 %	51 %	45 %	58 %	56 %	40 %
Witn GCE	49	5 %	18 %	18 %	14 %	19 %	27 %
Higher	14	1 %	5 %	10 %	4 %	2 %	7 %
Labor market position							
Full time job	633	60 %	55 %	56 %	58 %	59 %	60 %
Part time job	35	3 %	4 %	4 %	5 %	6 %	4 %
Entrepreneur (no empl.)	68	6 %	12 %	12 %	5 %	13 %	9 %
Entrepreneur (w. empl.)	23	2 %	4 %	3 %	3 %	6 %	2 %
Pensioner working	19	2 %	2 %	0 %	3 %	0 %	2 %
Pensioner not working	120	11 %	4 %	4 %	5 %	2 %	8 %
Unemployed	59	6 %	10 %	8 %	16 %	13 %	7 %
Student	65	6 %	6 %	10 %	4 %	4 %	5 %
Wife working in household	28	3 %	2 %	3 %	1 %	2 %	3 %

* *The response rate for income range is lower than 100%: 47 respondents, i.e. 4% in CR and 22 respondents, i.e. 4% in SR did not put down the income range*

TABLE 4B: STRUCTURE OF THE INFORMAL SECTOR IN THE SLOVAK REPUBLIC: RELATIVE % SHARES

			Active engagement in informal activities				*Puchase of informal*
	Total Sample		*Total % of individuals*	*Informal Salary (CZK)**			*goods/services*
				<10000	*<10000, 25000)*	*> = 25000*	*Total % of individuals*
Total	*548*		*83*	*37*	*13*	*10*	*276*
% share of total sample	*100 %*		*15 %*	*7 %*	*2 %*	*2 %*	*50 %*
% share of informal sector			*100 %*	*45 %*	*16 %*	*12 %*	
		100 %	100 %	100 %	100 %	100 %	100 %
Sex							
Male	278	51 %	80 %	78 %	95 %	97 %	55 %
Female	270	49 %	20 %	22 %	5 %	3 %	45 %
Age							
18 to 24 years	104	19 %	22 %	27 %	0 %	40 %	18 %
25 to 39 years	192	35 %	35 %	19 %	69 %	50 %	38 %
40 to 59 years	199	36 %	35 %	41 %	31 %	10 %	37 %
Older than 60	53	10 %	8 %	11 %	8 %	0 %	8 %
Status							
Married	312	57 %	46 %	43 %	69 %	60 %	58 %
Single w. partner	18	3 %	11 %	8 %	8 %	0 %	6 %
Divorced/widow (er)	64	12 %	13 %	14 %	15 %	0 %	10 %
Single w/out partner	153	28 %	31 %	35 %	8 %	50 %	26 %
Level of education							
Primary	191	35 %	35 %	38 %	54 %	0 %	36 %
Without GCE	160	29 %	37 %	30 %	38 %	80 %	33 %
Witn GCE	146	27 %	28 %	30 %	8 %	30 %	24 %
Higher	51	9 %	1 %	0 %	0 %	0 %	7 %
Labor market position							
Full time job	285	52 %	46 %	41 %	46 %	40 %	55 %
Part time job	9	2 %	4 %	0 %	0 %	0 %	3 %
Entrepreneur (no empl.)	22	4 %	10 %	11 %	0 %	30 %	3 %
Entrepreneur (w. empl.)	2	0 %	2 %	0 %	0 %	0 %	1 %
Pensioner working	5	1 %	0 %	0 %	0 %	0 %	1 %
Pensioner not working	76	14 %	10 %	11 %	15 %	0 %	11 %
Unemployed	86	16 %	28 %	27 %	46 %	30 %	17 %
Student	40	7 %	5 %	8 %	0 %	0 %	7 %
Wife working in household	17	3 %	0 %	0 %	0 %	0 %	2 %

* *The response rate for income range is lower than 100%: 47 respondents, i.e. 4% in CR and 22 respondents, i.e. 4% in SR did not put down the income range*

TABLE 5: INDIVIDUAL'S ASSESSMENT OF THE SIZE OF THE UNDERGROUND ECONOMY CROSS-TABULATED WITH HIS/HER SELF–ASSESSED FREQUENCY OF EVASION. CZECH AND SLOVAK REPUBLICS, 2000

Variable	*TOTAL*	*Frequent evader*	*Evades sometimes*	*Never evades*
Reaction of family and friends if they discover you have undeclared income (1=strongly agree, 5=strongly disagree) (variable *A10* in appendix)	2.98 (1.13)	1.79 (0.9)	2.4 (0.9)	3.2 (1.1)
What is the penalty for not declaring 100,000 crowns? (variable *A11* in appendix)	30,200	32,800	30,800	30,000
What is the probability of getting caught? (variable *A12* in appendix)	44.1	20.0	31.0	48.3
Correlation between the above two cells (A11, A12)	0.04	0.03	0.02	0.05
How many hours a day are you engaged in undeclared work? (variable *C05* in appendix)	3.85 (6.6)	4.69 (4.12)	3.7 (7.0)	Not applicable

Note: Standard deviations in brackets.

In the literature the question of how precisely people estimate the penalty for evasion has taken a back seat to the question of whether the estimates of this penalty vary with the frequency of evasion. Elffers, Weigel, and Hessing (1987) studied evasion in the Netherlands and found in the responses to their surveys that the perceived severity of penalty was unrelated to whether someone evaded taxes. Elffers et al. (1987) also failed to find a correlation between the perceived severity of the penalty for evading and the perceived likelihood of apprehension. Our data show a result that differs from that of Elfers et al. (1987). Frequent evaders estimated an average penalty of 32,800 crowns whereas infrequent evaders cited 30,800 and non-evaders cited 30,000. There was also a positive and significant correlation (0.04) between the perceived likelihood of apprehension for tax evasion and the severity of the penalty for tax evasion. That experienced evaders tend to perceive a higher penalty goes against the notion of "penalty illusion" whereby those who underestimate the penalty tend to evade more than those who have a proper estimate of the penalty. The above figures may be telling us that experienced evaders know the two-tier structure of penalties for evasion and take an average of these two tiers weighted by some probability of apprehension to come up with their estimates. They may also be reporting the expected penalty for those who evade frequently, which is more likely to be 100,000 crowns than 20,000 crowns.

This is not a random speculation on our part. As the previous paragraph indicated, frequent evaders seem to have a shrewder assessment of the probability of apprehension than infrequent and non-evaders do. This is the context in which judgments of the

accuracy of penalties by class of evader must be assessed. If the frequency of evasion improves the assessment of the likelihood of being caught, then education might also have an effect, even if we do not hold all other forces constant. Our data did not confirm this speculation. Education was uncorrelated with the assessment of the likelihood of being caught for evading and, as one could expect given the negative education result, income also bore no relation with the assessment of the likelihood of being caught.

Morals

The influence of morals on tax evasion is a recent but growing field of study. The literature to date has focused on three possible social factors which influence evasion: feelings of guilt and shame, belief that tax burdens are unfairly distributed, feelings that the quality of government services is poor. Our survey allows us to address the first two factors and a third factor not studied to date (bandwagon effects).

Erard and Feinstein (1994) found that incorporating "moral sentiments", such as guilt and shame, indirectly into an econometric model of tax evasion improved the model's fit. Their analysis did not use explicit information about whether people feel guilty or ashamed and relied on restrictive assumptions about the form of the utility function. We asked several questions that might proxy for shame and guilt. A question that proxies for shame is what a person believes will be the reaction of friends and family should they discover he is evading taxes. Table 6 suggests that where the disapproval of friends and family is high, evasion tends to be low.

This was borne out in statistically significant correlation between family reaction and frequency of underground work for the Czech Republic and the Slovak Republic.

A second proxy for shame is whether other people are also evading heavily. We asked each individual what percentage of adults in his country was evading taxes and what percentage of adults in his neighborhood were evading taxes. As Table 7 shows, both bandwagon variables show a strong positive correlation with an individual's evasion. Individuals who evaded frequently had by far the largest assessment of the underground economy. The most powerful correlation is between whether an individual evades and what percentage of people in his neighborhood he believes to be evading (0.23 correlation between the intensity of evasion and what percentage of individuals in the country the respondent believes to be evading–variable A07 in the appendix–and 0.31 correlation between the intensity of evasion and what percentage of individuals in his neighborhood the respondent believes to be evading–variable A08 in the appendix). The fact that the assessment of the underground economy falls as an individual evades less may be due to moral factors. An individual who believes few around him are evading may feel coerced by custom to evade little. Of course, the causality may run in the other direction. Those who evade frequently may justify their evasion by saying that it is alright because "everyone else is doing it." Our data cannot resolve this point, but merely show a relationship worthy of further study. We also found that the most

TABLE 6: PERCENT OF RESPONDENTS CROSS-TABULATED BY FREQUENCY OF UNDERGROUND WORK AND THEIR ASSESSMENT OF FAMILY REACTION

Family reaction (1 = surely agree, 3 = do not know, 4 = probably do not agree, 5 = surely do not agree)	*Frequency of underground work*								
	Often			*Occasionally*			*Never*		
	CR	*SR*	*Average*	*CR*	*SR*	*Average*	*CR*	*SR*	*Average*
1	38.89	83.33	45.24	16.44	15.07	16.10	4.46	9.86	6.51
2	41.67	0	35.71	38.81	46.58	40.75	18.71	22.77	20.25
3	16.67	16.67	16.67	34.70	30.14	33.56	36.98	34.98	36.22
4	0	0	0	8.22	6.85	7.88	23.88	22.07	23.19
5	2.78	0	2.38	1.83	1.37	1.71	15.97	10.33	13.83

frequent evaders are those who believe that there is little difference between how much people in their neighborhood evade and how much countrywide evasion there is. Frequent evaders may have wider contacts with the underground economy than infrequent or non-evaders, and thus assess that the field of evasion is equally well trampled on both sides of the fence. Those who have little experience of evasion may form tribal loyalties and believe that their neighborhood is less sinful than those that surround them.

TABLE 7: INDIVIDUAL'S ASSESSMENT OF THE SIZE OF THE UNDERGROUND ECONOMY CROSS-TABULATED WITH HIS SELF–ASSESSED FREQUENCY OF EVASION. CZECH AND SLOVAK REPUBLICS, 2000

Variable	*TOTAL*	*Frequent evader*	*Evades sometimes*	*Never evades*
According to you, what percent of adults	34.4	45.3	38.8	32.2
in the country have underground income?	(20.4)	(24.5)	(21.3)	(19.4)
(variable *A7* in appendix)				
correlation with intensity of evasion	*-0.18*			
According to you, what percent of adults	23.4	39.2	30.4	*20.1*
in your neighborhood have underground	(20.4)	(23.5)	(23.1)	(18.0)
income? (variable *A8* in appendix)				
correlation with intensity of evasion	*-0.27*			
Difference between top cell and cell	10.97	6.1	8.4	12.2
below (A7-A8)	(15.6)	(12)	(15.8)	(15.6)

Note: Standard deviations in brackets

A more direct approach to morals is not to seek out measures of guilt or shame but simply to ask people whether they believe evasion is moral and then see if there is any link between this sentiment and the individual's evasion. Table 8 shows the correlation between the answer to whether the respondent works in the shadow economy often (value of 1), occasionally (value of 2), or never (value of 3), and the morality variable in which respondents rank between 1 to 5 whether having undeclared income is strongly immoral (5) or strongly moral (1).

Table 8 shows a positive tendency between evading taxes and the belief that such evasion is moral. We also calculated the correlation between the rows and columns of Table 8 and found it to be statistically significant. The strong correlation that emerges between morality and evasion may be due in part to the simultaneity of these quantities. A person who evades may justify his evasion by saying it is moral while a person who believes it is moral to evade may feel himself free to evade. This is how morality and evasion may amplify each other. This does not invalidate the above result but underlines that the above correlations may not be uncovering purely structural relations.

Slovakia's average reported morality was higher than that of the Czech Republic, yet Slovaks estimated more of their countrymen to be participating in the shadow

economy than did Czechs. For Czechs the correlation between the two rows of Table 8 was three times as high as that of Slovakia. Czechs who believed evading taxes was moral felt themselves far freer to evade those taxes than did Slovaks. What can we make of these seemingly contradictory findings? Without having performed a multivariate analysis, conclusions are premature. Our strategy of presenting evidence in tabular form is meant to give a first impression. We will introduce regressions later and discuss their meaning. For the moment, our conclusion is that morality is a force with contradictory and, perhaps, non-existent effects on tax evasion.

The Effect of Taxes on Evasion

As mentioned earlier, the effect of taxes on evasion is theoretically ambiguous and subject to contradictory empirical findings. In this section we tackle the question in a novel manner. We show how the separation in 1992 between the Czech and Slovak nations can be used as a natural experiment that reduces the number of control variables needed to answer this question.

Background

After separating in 1992, the Czech and Slovak Republics took their finances along different paths. In the Czech Republic Prime Minister Vaclav Klaus followed a policy of vigorous privatization, deregulation and low taxation. His opposite number in Slovakia was slow to privatize and followed a policy of vigorous taxation. Table 9 shows that throughout the 1990s the Czech government progressively lowered its tax burden while the Slovak government kept its taxes at relatively high levels right until the new millennium. Czechs lowered this burden by reducing the top marginal tax rate on income from 47 percent in 1992 to 40 percent in 1997 whereas it took the Slovaks until 2000 to lower this rate from 47 percent to 42 percent. Slovaks made up for the shortfall in revenue by increasing marginal tax rates in the middle ranges of income. Czechs have had constantly lower rates on these middle income levels than the Slovaks. The same is true of the value added tax which in its lower tier was 5 percent in the Czech Republic in 2000 and 10 percent in the Slovak Republic, and 22 percent in its upper tier in the Czech Republic and 23 percent in its upper tier in the Slovak Republic. Throughout the 1990s the Czechs lowered their VAT rate whereas Slovaks increased theirs. A more detailed view of the Czech and Slovak tax systems can be found in the appendix, though we must warn that the tables found there do not reflect the intensity with which tax authorities of the two countries enforce collection. To date no single summary statistic of a tax system exists, so that our statement that the Slovaks have a more intrusive tax system than the Czechs must be recognized to have a subjective, or at least a less than perfectly defined objective component.

TABLE 8: CROSS-TABULATION OF MORALITY WITH FREQUENCY OF EVASION FOR CZECH AND SLOVAK REPUBLICS 2000

Morality index	*Frequency of underground work*								
(1 = strongly moral,	*Often*			*Occasionally*			*Never*		
5 = strongly immoral)	*CR*	*SR*	*Average*	*CR*	*SR*	*Average*	*CR*	*SR*	*Average*
1	17.65	16.67	17.50	2.70	0	2.03	0.41	2.32	1.13
2	26.47	50	30	18.92	27.40	21.02	7.19	12.53	9.19
3	50	33.33	47.50	59.01	61.64	59.66	43.57	50.35	46.10
4	2.94	0	2.50	18.47	10.96	16.61	40.11	28.07	35.62
5	2.94	0	2.50	0.90	0	0.68	8.71	6.73	7.97

Source: Survey data, authors' computation

TABLE 9: RATIO TOTAL TAXES/GDP

Country	1993	1994	1995	1996	1997	1998	1999	2000
Czech Republic	41.20	40.50	40.00	36.20	36.40	36.00	37.10	36.80
Slovakia	36.40	38.80	42.00	41.00	38.40	37.10	35.30	34.20

Source: Czech Statistical Office and Slovak Statistical Office

Differences in tax policies might lead to differences in tax compliance, though, as we have emphasized earlier, the theoretical literature is ambiguous on this point. The relatively larger incursion of the Slovak government into the Slovak economy may be cause for Slovaks to evade taxes more vigorously than Czechs. The brief survey of tax evasion in the Czech and Slovak Republics in section 2 suggests that Czechs evade more intensively than Slovaks even though their tax rates are lower. If we can believe that Czech and Slovak nations are identical in all but their tax policies, our findings that lower-tax Czechs evade more than higher-tax Slovaks may count as a further observation worthy of a notch in the international literature on the effect of taxes on evasion.

Before leaping to such a conclusion, we must be aware that simple comparisons of tax evasion may not be appropriate for drawing conclusions about behavior if the subjects tested differ along some dimensions relevant to tax evasion. Differences in tax evasion between Slovaks and Czechs may be due not simply to different tax levels, but also to variables for which we have not controlled. How can we test whether identical twins, subject to different tax levels, differed in the amount of tax they paid? If we can believe that the Czech Republic and Slovakia are "twins", there is no need for complicated models which control for differences between the two countries. "All" we need to do is measure the degree to which Czechs and Slovaks evaded taxes ten years after separating and hope that our twins are truly identical. In the next section we justify why we believe that complicated controls are not necessary in our analysis of the differences in tax evasion between the two countries.

Justifying the Assumption that Czechs and Slovaks Are Twins

As explained earlier, the present paper explores how tax evasion changes under the pressure of changes in taxes. Our means of exploring these changes is to compare tax evasion in two countries that are similar but that fell under different government policies. If we can believe that both countries are the same, we need not worry that differences in demographics, wealth, and culture can explain any difference we might observe in tax evasion and morality. To make our exercise credible, we must give some evidence that in 1992, when the Czech Republic split from Slovakia, both countries were "twins." Czechs and Slovaks speak a similar tongue. At the start of the 20th century this common cultural heritage of language was the main uniting feature of these

two peoples. On other dimensions, however, Slovaks and Czechs differed significantly. In 1920 Slovaks had a literacy rate of 72.3 percent whereas Czechs had a literacy rate of 96.7 percent. By the 1960s these literacy rates had converged to close to 100 percent. Literacy was not the only indicator on which Czechs and Slovaks converged. As Table 10 shows, newborn mortality converged over the century, as did the number of people per doctor, the number of high schools per thousand people and the average wage in both countries. The main message of Table 10 is that as the century wore on, Slovakia and the Czech lands converged on the above-mentioned indicators. The final great push toward convergence came during the communist era. Part of communist strategy for holding power was to flatten differences between groups of people, perhaps so that no concentrated interests could form to oppose their regime. By 1991 Czechs and Slovaks were so at ease with each other that they had a very high level of intermarriage. Of married Czech men 7.4 percent took Slovak wives.

TABLE 10(A): NEWBORN MORTALITY PER HUNDRED THOUSAND

Years	*Czechia*	*Slovakia*
1921-25	148.1	169.5
1936-40	92.0	142.0
1960's	20.0	28.0
1990's	10.8	12.0

Source: Czechoslovak statistical yearbooks 1921-1990

TABLE 10(B): NUMBER OF PEOPLE PER DOCTOR

Years	*Czechia*	*Slovakia*
1960's	535.0	675.0
1990's	265.0	274.0

Source: Czechoslovak statistical yearbooks 1960-1990

TABLE 10(C): NUMBER OF PUPILS IN MIDDLE SCHOOL

Years	*Czechia*	*Slovakia*
1960's	221,657	90,322
1990's	304,748	149,385

Source: Czechoslovak statistical yearbooks 1960-1990

Table 11 gives some summary statistics from our survey on demographic and economic variables for the Czech and Slovak Republics.

TABLE 10(D): AVERAGE WAGE IN SLOVAKIA AS PERCENTAGE OF CZECH REPUBLIC WAGE

Year	
1920	64.33%
1947	81.15%
1960	96.73%
1990	99.08%

Source: Czechoslovak statistical yearbooks 1921-1990

TABLE 11

Sample characteristics	*2000 Czech Republic*	*2000 Slovak Republic*	*Significant difference*
Divorce rate	10.5	7.3	**
% working full-time	59.5	51.1	
% Gypsies	0.2	0.6	
% ethnic	6.4	10.3	*
Average age	39.9	38.6	*
% population with high school or greater	9.2	9.2	
% living in towns of more than 20,000 inhabitants	45.7	40.9	*
% women	49.9	50.7	
Average size of household	3.0	3.7	**

Source: Survey, authors' computation

Table 11 shows that there are some differences in our survey between Slovaks and Czechs. There is a slightly higher percentage of ethnic populations in Slovakia than in the Czech Republic. Slovaks tend to be more "rural," though this must be qualified by noting that a detailed cross-tabulation shows that the difference arises largely from the fact that there are fewer towns of more than 100,000 in Slovakia. Detailed cross-tabulation showed that the percentage living in villages of fewer than 1000 inhabitants – the true rural setting – are identical in Slovakia and the Czech Republic. Slovaks have lower divorce rates in our survey and larger families than do Czechs. Whether these differences disqualify our sample as representing twins is not clear, but the possibility must be kept in mind. Variables that seem likely to be associated with tax evasion such as education, job satisfaction, and percentage of Gypsies, are the same in our sample for both countries. The main difference arises from the structure of incomes – detailed cross-tabulation showed lower average income for Slovaks.

The above tables show that the Czech Republic and Slovakia were twins only on some very broad demographic and economic aggregates. Since our study focuses on all factors, which might influence tax evasion, we must also consider moral factors. There are objective and subjective variables which can cast light on morality in both countries at the start of the 1990's. One objective variable to consider is adherence to religion. Table 12 shows that even as far back as the 1930's there did not seem to be strong differences between the countries, except in the percent of people who claimed to have no beliefs. Far more Czechs claimed to be without belief than Slovaks. On this score at least there is some call to be concerned that the twins differ in their moral outlook. This conclusion softens when we consider the answers given by Czechs and Slovaks to *subjective* questions about their views on society. Examination of a social survey from 1992 shows that for most questions Czechs and Slovaks have similar answers.

The list of variables we have presented in Tables 10 – 12 is not exhaustive. An important critique of our list is that it fails to measure some intangible barrier, such as "national spirit", which may come between the twins in our story and make them as different from each other as France is from England. Why did Slovakia and the Czech Republic split if not for some deep-rooted difference between the two countries? Was the similarity between the two not an artificial condition embalmed by a dictatorial communist regime? To answer such a question in detail it, would take us deep into the annals of historical scholarship, but some answer must be given to the critique that both countries split because they were fundamentally different. In 1992 the Czech Republic and Slovakia separated suddenly. Slovak politicians asked Czech politicians for the right to separate and Czech politicians granted their wish with little hesitation. No referendum was held to decide the future of both parts of Czechoslovakia and many Czechs and Slovaks were genuinely surprised that their country was breaking in two. According to the Institute for Public Opinion Research, the majority of citizens would not have voted for the breakup of Czechoslovakia. Those citizens who did not agree with separation tended to see separation as the work of distant politicians belonging to the Civic Democratic Party on the Czech side and the Movement for a Democratic Slovakia on the Slovak side. Forty-five percent of Czechs and forty-four percent of Slovaks believed that a referendum was the only acceptable way of dissolving their country.

TABLE 12: STRUCTURE BY RELIGION IN 1947

Religion	*Czechia (Moravia)*	*Slovakia*
Catholic	74.78% (78.40%)	71.61%
Orthodox Catholic	0.11% (1.90%)	6.42%
Missing or without belief	5.2% (10.04%)	0.61%

Source: Czechoslovak statistical yearbooks, 1950

The experience of Quebec's two referendum campaigns on separation in 1980 and 1995 suggests that as campaigns unfold and information about the consequences of separation are revealed, popular support for separation plummets. Referendum campaigns on separation present an opportunity to discuss the grievances of all parts of the country and to come to some form of understanding and accommodation. Much of the surprise and dismay with separation was seen on the faces of Czech businessmen who had sold goods on credit to Slovak businesses. After the split Slovak businesses defaulted heavily on their obligations to their creditors. This anecdote is one of many which suggests that Slovaks and Czechs were not seriously thinking about separation, and that the split was engineered or perhaps stumbled over by a few politicians.

By the end of the millennium Czechs and Slovaks still resembled each other on demographic and social dimensions, but differed in their average incomes and unemployment rates. By 2000 Slovakia's average income had fallen below that of the Czech Republic and Slovakia's unemployment rate was higher. These differences in economic variables pose a problem for our analysis. We wish to ask how changes in taxes change tax evasion in the Czech and Slovak twins. If the incomes of both countries differ significantly, how can we know that changes in tax evasion and tax morality are due truly to changes in taxes and are not to changes in income? Czech incomes are higher on average than Slovak incomes and it is well established in the evasion literature that evasion rises with incomes. We can meet the critique head-on by controlling for income through some statistical technique such as regression. This, of course, is what we had wished to avoid. Perfect twins need no statistical controls to establish the effect of an outside force which drives a wedge in the behavior of the twins. All is not lost. Having to control on just a few dimensions is always preferable to controlling on many dimensions because one can never be quite confident of the quality of controls one is using.

Untangling the Effects on Evasion of Income and Taxes

The results of this paper so far are that Czechs seem to evade more taxes than do Slovaks but also that more Slovaks work in the underground economy than do Czechs. Why do these twin countries differ in their degree of tax evasion? More precisely, why, if taxes are so much higher in the Slovak than in the Czech Republic, is the Slovak Republic not a clear-cut leader on all dimensions of tax evasion? We have already seen that Slovaks seem more bound by morality than Czechs, but we also noted the possibility of a strong simultaneity between self-reported morality and self-reported evasion. This leaves income as the major divider between the Czech and Slovak twins. Perhaps this difference in income accounts for the difference in tax evasion more than does the difference in taxes. As mentioned earlier, theory and empirical research are in agreement that evasion rises with income.

Table 13 is a cross-tabulation of income and the frequency of underground work where row percentages appear above each column percentage.

TABLE 13

Income third	*Frequency of underground work*		
	Often	*Occasionally*	*Never*
Lowest	3.3	20.1	76.6
	90.5	87.4	88.4
Middle	2.4	22.1	75.5
	8.4	12.6	11.4
Highest	20.3	n.a.	79.7
	1.2	n.a.	0.2

Source: Survey data, authors' computation

Table 13 shows that among those who evaded often and occasionally the intensity of evasion drops off with income, and that, controlling for the number of people in each income group (looking at row percentages), those with high incomes tend to evade most. This suggests that the tendency for the Czechs to intensively evade taxes is high because the Czech Republic has more high income people than does the Slovak Republic.

So far we have been content to present our results in tabular form because of our confidence in the "twinness" of the Czech and Slovak Republics. The value of the twins analogy comes from taking the Czech and Slovak Republics as our units of analysis. Our survey allows us to deepen our insight into the reasons for tax evasion by turning our heads from the perspective of countries and focusing on the individual. The natural experiment we explored for the Czech and Slovak Republics was one which allowed us to see whether changes in taxes led to changes in tax evasion. The only variable for which we had to control was income. Our natural experiment did not allow us to delve into the many reasons for which individuals in both the Czech and Slovak Republics evade. A multivariate analysis of both countries allows us to seek such knowledge. While we would expect the results from our natural experiment at the macro-level to carry over to the individual level, we must also be careful not to fall into the "fallacy of composition," also known as the "ecological fallacy" which researchers make when they leap to conclusions about the whole from findings on the individual, or vice versa. Table 14 shows probits taking intensity of work on the underground economy (1 – frequently, 2 – sometimes, 3 – never) as the dependent variable. We have chosen this as the dependent variable because it is the question on evasion to which we had the most responses. In fact, everyone answered this question. The large response to this question provides us with many observations on which to run our observation-hungry probit analysis, but leaves us with the uncomfortable feeling that many of the answers we were given were false. A more satisfying situation would have been one in which individuals who are prone to lie about their underground participation simply refuse to answer. In these circumstances, we could have performed a two-stage Hausman correction analysis for self-selection.

The second column of the table shows the raw probit coefficient estimates. The third to fifth columns are estimates of the marginal effects of the independent variables on the dependent variable. The third column shows these marginal effects for the group of frequent evaders. The fourth column shows marginal effects for occasional evaders and the last column shows marginal effects for non-evaders. Variables of significance are age (the older one is, the more one tends to evade, except for the class of sometime evaders), being female (for the class of frequent and sometimes evaders, being female has a negative effect on the chance of moving up a class), education (which has a generally positive effect on the intensity of evasion), if one believes many others to be evading (the bandwagon variable A08 had a positive effect on evasion except for the class of non-evaders), whether one bought goods in the underground economy (this factor seems to push non-evaders into a higher level of evasion). Being Czech had a negative marginal effect on evasion except for those who declared themselves to be non-evaders. We did not include income because of its high positive correlation with education and age. The coefficients attached to these latter variables suggest that income, as in the tabular analysis, also bears a positive relationship to tax evasion.

Implications

So far, the results of our analysis have been that tax evasion tends to bear no clear relation to morality or tax levels, but rather corresponds to income. There is nothing in the Allingham-Sandmo model of tax evasion which would make this a surprising result. In fact, Christian (1994) found that in 1988 in the US evasion, as measured by underreported income, tended to rise with income, but less than proportionally. Christian's analysis, though, cannot be taken as general because he did not look at income from corporations and businesses, nor did he consider those who did not fill out tax forms. Attention has focused mainly on whether higher taxes lead to higher evasion. Clottfelter (1983), for example, found that noncompliance is strongly positively related to the marginal tax rate. Our analysis suggests that tax levels, past a certain threshold, may have little bearing on tax evasion. What is perhaps more surprising about our model is the inconclusive role that morals play in the decision to evade taxes.

The result that evasion seems to increase with income may fall out of an Allingham-Sandmo (1972) model of evasion with an appropriately specified utility function. If the taxpayer has decreasing absolute risk aversion, the rising incomes make it more attractive to risk tax evasion. Utility functions are difficult to observe and referring to them to explain behaviour gives the researcher perhaps too much freedom in drawing conclusions. A more observable possibility is that income and tax evasion technology are somehow linked. The "rich" may have better access to tax shelters and dodges. This possibility may explain the broad consensus among economists, as expounded by Sorensen (1994), and governments that income taxes are becoming a thing of the past and that the more enforceable value added tax is the tax of the future.

TABLE 14: PROBIT ESTIMATION OF THE EFFECT OF INDIVIDUAL PARAMETERS ON INTENSITY OF WORK IN THE UNDERGROUND SECTOR

Parameter	*Estimate*	*Change Prob(y=0)*	*Change Prob(y=1)*	*Change Prob(y=2)*
Constant	1,5950 ** (0.3519)			
Country (1=Czech, 0=Slovak)	0,4380 ** (0.1299)	-0.010	-0.116	0.126
Respondent age	0,0122 ** (0.0041)	0.000	-0.003	0.004
Female	0,4463 ** (0.1042)	-0.012	-0.124	0.135
Primary school education	-0,7781 ** (0.2633)	0.036	0.233	-0.269
Apprenticeship (2 years)	-0,5733 (0.3238)	0.028	0.176	-0.203
Apprenticeship (3-4 years) without diploma	-0,7141 ** (0.2520)	0.026	0.207	-0.233
Secondary vocational without diploma	-0,4055 (0.2643)	0.014	0.120	-0.134
Grammar school with general diploma	-0,0876 (0.3069)	0.002	0.025	-0.027
Desired income 2500 crowns less than actual	-0,1758 (0.1805)	0.005	0.051	-0.057
Desired income 5000 crowns less than actual	0,0775 (0.1144)	-0.002	-0.022	0.024
According to you, what percent of adults in your neighborhood have underground income? (variable A8 in appendix)	-0,0100 ** (0.0026)	0.000	0.003	-0.003
What is fine on 100,000 crowns of undeclared taxes? (variable A11 in appendix)	0,0000 (0.0000)	0.000	0.000	0.000
What is chance of being caught buying or selling undeclared goods or services? (variable A12 in appendix)	0,0066 ** (0.0019)	0.000	-0.002	0.002
Is your economic situation in 2000 worse than in 1999?	-0,1702 (0.1304)	0.005	0.049	-0.054
Have you ever bought goods in the underground economy? (1 – yes, 2 – no)	1,0305 ** (0.1310)	-0.026	-0.265	0.291

Scotchmer (1989) explains how rich taxpayers can reduce the uncertainty of their tax liability by hiring experts. An extension of his thinking is that the rich can also research methods to evade taxes. As Slemrod and Yitzhaki (2000) explain, the Allingham-

Sandmo model of tax evasion has focused attention on risk aversion and hence on the utility function. They write "This focus has to some extent obscured other important aspects of the issue, such as the tax concealment technology."

One important aspect of the evasion technology is the opportunity people have to declare themselves as self-employed. In both countries it is common for a worker to go to a company office, work there, as would any other employee, and still declare himself to be self-employed. Such a declaration spares the company the need to pay for the worker's social security and gives the worker the opportunity to deduct from his taxes "business expenses", such as the cost of going to and from work. The daring worker who declares himself self-employed may go so far as to deduct from taxes the cost of his vacations as business trips, the cost of his car lease as a business cost, and maybe even his apartment rental. The danger to the worker is that tax authorities would investigate and find that these expenses are not related to his work. The benefit to the worker is that such expenses allow him to evade taxes. In the US, Slemrod and Yitzhaki (2000) explain that 41.4 percent of self-employed people voluntarily report their true incomes. It would be nice to compare the number of self-employed in Czech and Slovak Republics over time and relate this to the level of taxes. Such a comparison is not possible because of the three available methods for reporting self-employment - in the Czech and Slovak Republics differ in the method used. These three methods of measuring total number of self-employed are:

1) by the number of individuals being registered for self-employment (in the Czech Republic this is called a "Zivnostensky list").
2) by the number of people calling themselves self-employed (via labor market surveys).
3) by taking tax reports and looking at the number of the people who declared the larger part of their income as coming from sources of revenue that could be considered as independent of an employer.

The Czechs currently report the first measure in the above list whereas Slovak information is on the second measure. Even if these measures are not directly comparable, the number of Czechs declaring themselves self-employed is so much higher than the number of Slovaks declaring themselves self-employed, that it is reasonable to suspect that self-employment is greater in the Czech Republic than it is in the Slovak Republic.

Whether fewer Slovaks are self-employed because Slovak tax authorities enforce tax laws more firmly than Czechs, or because the lower income of Slovaks makes such a complicated investment in evasion technology unprofitable, is a question difficult to answer with reference to our survey. As we mentioned earlier, Slovaks and Czechs have the same beliefs about the probability of apprehension for evading taxes and the same beliefs about the penalties for tax evasion. This may mean that there is no difference in the enforcement technology, or it could mean that evaders adjust their behaviour to attain a suitable risk-level and that this risk level is the same in both countries. Inquiries into the role that available evasion technology offer taxpayers should play a larger role in future enquiries on tax evasion in transition countries.

Conclusion

This paper has suggested that the separation of the Czech and Slovak Republics was a natural experiment, which allows us to analyze whether or not differences in taxes lead to differences in tax evasion. Our tentative conclusion is that tax differences are not as important as income differences for determining the degree of tax evasion. Morality has an ambiguous effect on tax evasion and any conclusions about the effects of morality on evasion are plagued by the problem of simultaneity.

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Appendix A: Tax Structures of Czech and Slovak Republics

TABLE A1

Ratio Total Taxes/GDP

Country	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Czech Republic	41.20	40.50	40.00	36.20	36.40	36.00	37.10	36.80
Slovakia	36.40	38.80	42.00	41.00	38.40	37.10	35.30	34.20

Ratio Direct Taxes/GDP

Country	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Czech Republic	10.10	10.40	10.20	9.40	8.60	9.00	9.00	8.80
Slovakia	9.90	11.40	11.30	11.30	9.30	9.60	8.90	8.70

Ratio Indirect Taxes/GDP

Country	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Czech Republic	12.00	13.10	12.60	12.50	11.80	11.20	12.20	12.30
Slovakia	12.70	13.20	14.00	12.20	11.70	10.90	10.80	10.90

Source: Czech and Slovak Statistical yearbooks, 1993-2000

TABLE A2

Corporate tax rates

Country	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*
Czech Republic	45	42	41	41	39	35	35	32	31
Slovakia	45	40	40	40	40	40	40	29	29

Source: Tax bylaws, Czech and Slovak Ministry of Finance.

TABLE A3: PERSONAL INCOME TAX RATES – CZECH AND SLOVAK REPUBLIC

Personal income tax rates – Czech Republic

Marginal rate (in %)	*1992*	*1993*	*1994*	*1995*	*1996*
up 60 000 Kc	15	15	15	15	15
up 120 000 Kc	20	20	20	20	20
up 180 000 Kc	25	25	25	25	25
up 540 000 Kc	32	32	32	32	32
up 1 080 000 Kc	40	40	40	40	40
more than 1 080 000	47	47	47	47	43

	1997
up 84 000 Kc	15
up 144 000 Kc	20
up 204 000 Kc	25
up 564 000 Kc	32
more than 564 000 Kc	40

	1998	*1999*
up 91 440 Kc	15	15
up 183 000 Kc	20	20
up 274 000 Kc	25	25
up 822 600 Kc	32	32
more than 822 600 Kc	40	40

	2000	*2001*
up 102 000 Kc	15	15
up 204 000 Kc	20	20
up 312 000 Kc	25	25
up 1 104 000 Kc	32	32
more than 1 104 000 Kc	40	40

Source: Tax bylaws, Czech Ministry of Finance.
Note that this table splits in certain years due to a change in the income levels at which one passes to higher marginal rates.

Personal income tax rates – Slovak Republic

Marginal rate (in %)	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
up 60 000 Sk	15	15	15	15	15	15	15	15
up 120 000 Sk	20	20	20	20	20	20	20	20
up 180 000 Sk	25	25	25	25	25	25	25	25
up 540 000 Sk	32	32	32	32	32	32	32	32
up 1 080 000 Sk	40	40	40	40	40	40	40	40
more than 1 080 000	47	47	47	47	47	47	47	47

	2000	*2001*
up to 90 000 Sk	12	12
up to 150 000 Sk	20	20
up to 240 000 Sk	25	25
up to 396 000 Sk	30	30
up to 564 000 Sk	35	35
up to 1 128 000 Sk	40	40
more than 1 128 000 Sk	42	42

Source: Tax bylaws, Slovak Ministry of Finance.
Note that this table splits in certain years due to a change in the income levels at which one passes to higher marginal rates.

TABLE A4: VALUE ADDED TAX

Lower rate	*1993*	*2001*
Czech Republic	5	5
Slovakia	6	10

Higher rate	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*
Czech Republic	*23*	*23*	*23*	*22*	*22*	*22*	*22*	*22*	*22*
Slovakia	*23*	*23*	*23*	*23*	*23*	*23*	*23*	*23*	*23*

Source: EBRD, Transition Report (1996-2000)

	In billions of Czech Crowns (In % of GDP)						
	1994	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Tax Revenues	462.5	536.1	568.9	607.7	648.0	682.1	715.3
	(40.50)	(40.00)	(36.20)	(36.20)	(36.00)	(37.10)	(36.80)
Direct Taxes	119.0	135.9	142.4	143.4	162.5	165.4	170.3
	(10.40)	(10.20)	(9.40)	(8.60)	(9.00)	(9.00)	(8.80)
Corporate Income Tax	64.5	67.3	61.8	55.6	67.6	70.1	70.6
	(5.60)	(5.00)	(3.90)	(3.30)	(3.80)	(3.80)	(3.60)
Personal Income Tax	54.5	68.6	80.5	87.6	94.9	95.3	99.7
	(4.80)	(5.10)	(5.30)	(5.30)	(5.30)	(5.20)	(5.10)
Indirect Taxes	149.6	168.9	190.2	196.8	200.8	223.5	238.7
	(13.10)	(12.60)	(12.50)	(11.80)	(11.20)	(12.20)	(12.30)
VAT	85.5	94.8	109.1	117.7	119.4	138.3	149.9
	(7.50)	(7.10)	(7.20)	(7.10)	(6.60)	(7.50)	(7.70)
Social security contributions	179.2	213.3	222.2	246.8	262.9	270.6	284.1
	(15.70)	(15.90)	(15.90)	(14.80)	(14.60)	(14.70)	(14.60)
Other taxes	14.7	18.0	18.6	20.8	21.8	22.5	22.2
	(1.30)	(1.30)	(1.20)	(1.20)	(1.50)	(1.50)	(1.70)

Source: Tax bylaws and State budget. Czech Ministry of Finance

	In billions of Slovak Crowns (In % of GDP)						
	1994	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*
Tax Revenues	170.9	217.1	236.4	251.3	266.1	275.0	283.9
	(38.70%)	(42.00%)	(41.10%)	(38.40%)	(37.10%)	(35.30%)	(34.20%)
Direct Taxes	50.1	58.5	64.9	61.0	68.5	69.3	72.4
	(11.30%)	(11.32%)	(11.28%)	(9.32%)	(9.55%)	(8.90%)	(8.70%)
Corporate Income Tax	31.9	35.2	34.8	24.4	26.0	23.2	22.4
	(7.20%)	(6.81%)	(6.05%)	(3.73%)	(3.62%)	(2.98%)	(2.60%)
Personal Income Tax	18.1	23.2	30.1	36.6	42.5	46.1	47.6
	(4.10%)	(4.49%)	(5.23%)	(5.59%)	(5.93%)	(5.92%)	(5.89%)
Indirect Taxes	58.3	72.3	70.3	76.8	78.3	84.1	89.3
	(13.20%)	(13.99%)	(12.22%)	(11.74%)	(10.92%)	(10.80%)	(10.90%)
VAT	37.1	52.3	48.7	54.9	55.3	58.9	61.4
	(8.40%)	(10.12%)	(8.47%)	(8.39%)	(7.71%)	(7.56%)	(7.50%)
Social security contributions	51.4	71.9	85.0	94.0	100.5	101.3	107.7
	(11.60%)	(13.91%)	(14.78%)	(14.36%)	(14.01%)	(13.00%)	(13.12%)
Other taxes	2.6	4.2	4.8	4.2	4.5	4.4	4.5
	(0.60%)	(0.81%)	(0.83%)	(0.64%)	(0.63%)	(0.56%)	(0.54%)

Source: Tax bylaws and State budget. Slovak Ministry of Finance

Appendix B: Design of the Survey

TIME A	FILL ACTUAL TIME	HOURS MINUTES		
QUESTIONS ABOUT YOU AND YOUR FAMILY.				
RAGE	HOW OLD ARE YOU?			
HNUM	HOW MANY PERSONS (INCLUDING YOU) LIVE IN YOUR HOUSEHOLDS?			
KIDNUM	HOW MANY CHILDREN YOUNGER THAN 5 YEAR OLD LIVE IN YOUR HOUSEHOLD?			
TEENUM	HOW MANY CHILDREN FROM 6 TO 18 YEARS OLD LIVE IN YOUR HOUSEHOLD?			
ADNUM	HOW MANY ADULTS LIVE IN YOUR HOUSEHOLD?			

HTYP	WHAT KIND OF HOUSEHOLD IS YOURS?	1 ADULT PERSON, LIVING ALONE	1
		2 ADULT PERSONS WITHOUT CHILDREN	2
		2 ADULT PERSONS LIVING WITHOUT CHILDREN	3
		FAMILY – PARENTS AND CHILDREN	4
		FAMILY – PARENTS, CHILDREN, GRAND PARENTS (1, OR BOTH)	5
		FAMILY – PARENTS, CHILDREN, RELATIVES (1, OR MORE), BUT WITHOUT GRANDPARENTS	6
		INCOMPLETE FAMILY – EITHER FATHER OR MOTHER WITH CHILDREN WITHOUT GRANDPARENTS	7
		INCOMPLETE FAMILY – FATHER/MOTHER WITH CHILDREN AND WITH GRANDPARENT(S)	8
		INCOMPLETE FAMILY – FATHER/MOTHER WITH CHILDREN AND WITH RELATIVES (WITHOUT GRANDPARENTS)	9
		GRAND PARENTS, CHILDREN WITHOUT PARENTS	10
		A FAMILY WITHOUT A DIRECT RELATIONSHIP: "CHILDREN– PARENTS–GRANDPARENTS"	11
		OTHER	12

RHPOS	YOUR POSITION IN YOUR HOUSEHOLD. ONLY ONE ANSWER	HUSBAND , FATHER	1
		WIFE, MOTHER	2
		PARTNER	3
		SON, DAUGHTER	4
		GRANDPARENT	5
		GRANDSON, GRANDDAUGHTER	6
		BROTHER, SISTER	7
		OTHER RELATIVE = UNCLE, AUNT, NEPHEW, NIECE	8
		WITHOUT FAMILY RELATIONSHIP	9

RSTAT	CURRENT MARRITAL STATUS:	SINGLE, WITHOUT A PARTNER	1
		SINGLE, LIVING WITH A PARTNER	2
		MARRIED	3
		DIVORCED	4
		WIDOW / WIDOWER	5

RNAT	YOUR NATIONALITY:	CZECH	1
		SLOVAK	2
		MORAVIAN	3
		SILESIAN	4
		GYPSY	5
		POLISH	6
		GERMAN	7
		HUNGARIAN	8
		UKRAINE / RUTHENIAN	9
		OTHER (WHICH):	98

REDU	YOUR HIGHEST ACHIEVED EDUCATION LEVEL	PRIMARY	1
		APPRENTICESHIP (2 YEARS)	2
		APPRENTICESHIP (3-4 YEARS), WITHOUT GCE	3
		SECONDARY VOCATIONAL WITH GCE	4
		GRAMMAR SCHOOL WITH GCE	5
		HIGHER	6
		WITHOUT SCHOOL EDUCATION	7

REMPL	YOUR JOB POSITION	FULL TIME JOB	1	⇨RISCO
		PART TIME JOB	2	⇨RISCO
		OWNER OF A FIRM, DO NOT WORK IN THIS FIRM	3	⇨RISCO
		OWNER OF A FIRM, WITHOUT EMPLOYEES	4	⇨RISCO
		OWNER OF A FIRM, WITH EMPLOYEES	5	⇨RISCO
		PENSIONER, WORKING IN A FULL TIME JOB	6	⇨RISCO
		PENSIONER, WORKING IN A PART TIME JOB	7	⇨RISCO
		PENSIONER, NOT WORKING	8	⇨HEAD
		UNEMPLOYED	9	⇨HEAD
		MILITARY SERVICE	10	⇨HEAD
		CIVIL SERVICE	11	⇨HEAD
		STUDENT	12	⇨HEAD
		WIFE, WORKING IN A HOUSE ONLY	13	⇨HEAD
		OTHER:	14	⇨HEAD

RISCO	WHAT IS YOUR JOB / PROVIDE DETAILS, PLEASE WRITE:

RFEM	HOW MANY EMPLOYEES WORK IN THE FIRM, WHERE YOU WORK	JUST 1, ONE MAN BUSINESS	1
		2 – 5 EMPLOYEES	2
		6 – 25 EMPLOYEES	3
		26 – 100 EMPLOYEES	4
		101 – 1000 EMPLOYEES	5
		MORE THAN 1001 EMPLOYEES	6

HEAD	ARE YOU HEAD OF YOUR FAMILY, I.E. IS YOUR FINANCIAL CONTRIBUTION TO FAMILY BUDGET THE GREATEST?	YES	1	⇨RINC
		NO	2	⇨HHEDU

HHEDU	THE HIGHEST ACHIEVED LEVEL OF EDUCATION OF HEAD OF YOUR FAMILY I.E. OF A PERSON, WHO CONTRIBUTES THE MOST TO THE FAMILY BUDGET:	PRIMARY	1
		APPRENTICESHIP 2 YEARS	2
		APPRENTICESHIP (3-4 YEARS), WITHOUT GCE	3
		SECONDARY VOCATIONAL WITH GCE	4
		GRAMMAR SCHOOL WITH GCE	5
		HIGHER EDUCATION	6
		WITHOUT SCHOOL EDUCATION	7

HEMPL	JOB POSITION OF THE FAMILY HEAD	FULL TIME JOB	1	⇨HISCO
		PART TIME JOB	2	⇨HISCO
		OWNER OF A FIRM, DO NOT WORK IN THIS FIRM	3	⇨HISCO
		OWNER OF A FIRM, WITHOUT EMPLOYEES	4	⇨HISCO
		OWNER OF A FIRM, WITH EMPLOYEES	5	⇨HISCO
		PENSIONER, WORKING IN A FULL TIME JOB	6	⇨HISCO
		PENSIONER, WORKING IN A PART TIME JOB	7	⇨HISCO
		PENSIONER, NOT WORKING	8	⇨RINC
		UNEMPLOYED	9	⇨RINC
		MILITARY SERVICE	10	⇨RINC
		CIVIL SERVICE	11	⇨RINC
		STUDENT	12	⇨RINC
		WIFE, WORKING IN THE HOUSE ONLY	13	⇨RINC
		OTHER:	14	⇨RINC

HISCO	WHAT IS THE JOB OF THE HEAD/ PROVIDE DETAILS, PLEASE	WRITE:	

HHFEM	HOW MANY EMPLOYEES WORK IN THE FIRM, WHERE THE HEAD OF YOUR FAMILY WORKS	JUST 1, ONE MAN BUSINESS	1
		2 – 5 EMPLOYEES	2
		6 – 25 EMPLOYEES	3
		26 – 100 EMPLOYEES	4
		101 – 1000 EMPLOYEES	5
		MORE THAN 1001 EMPLOYEES	6
RINC	CHOOSE A RANGE OF YOUR NET MONTHLY INCOME; INCLUDING SOCIAL BENEFITS	LESS THAN 10.000 KČ	1
		10.001 – 15.000 KČ	2
		15.001 – 20.000 KČ	3
		20.001 – 25.000 KČ	4
		25.001 – 30.000 KČ	5
		30.001 – 35.000 KČ	6
		35.001 – 40.000 KČ	7
		MORE THAN 40.00 KČ	8
		REJECTING A RESPONSE	9
HINC	CHOOSE A RANGE OF YOUR HOUSEHOLD NET MONTHLY INCOME; INCLUDING SOCIAL BENEFITS	LESS THAN 10.000 KČ	1
		10.001 – 15.000 KČ	2
		15.001 – 20.000 KČ	3
		20.001 – 25.000 KČ	4
		25.001 – 30.000 KČ	5
		30.001 – 35.000 KČ	6
		35.001 – 40.000 KČ	7
		MORE THAN 40.001 KČ	8
		REJECTING A RESPONSE	9

A01	YOU THINK THAT YOUR CURRENT HEALTH IS:	GOOD	1
		BAD	2
A02	ARE YOU SATISFIED WITH YOUR JOB?	VERY SATISFIED	1
		SATISFIED	2
		NOT SATISFIED	3
		STRONGLY NOT SATISFIED	4
A03	IF YOU CAN CHOOSE, WHAT WILL BE YOUR CHOICE?	MORE WORK FOR HIGHER SALARY	1
		I AM COMPLETELY SATISFIED WITH THE CURRENT JOB	2
		LESS WORK FOR LOWER SALARY	3
A04	WHAT IS THE MINIMAL MONTHLY INCOME, WHICH SHOULD COVER THE NEEDS OF YOUR HOUSEHOLD IN YEAR 2000?		
A05	YOUR CURRENT FAMILY INCOME COMPARED WITH INCOME IN 1999:	IS STRONGLY HIGHER	1
		IS A BIT HIGHER	2
		IS APPROXIMATELY THE SAME	3
		IS A BIT LOWER	4
		IS STRONGLY LOWER	5

A06	YOUR CURRENT FAMILY INCOME COMPARED WITH THE INCOME IN 1995:	IS STRONGLY HIGHER	1
		IS A BIT HIGHER	2
		IS APPROXIMATELY THE SAME	3
		IS A BIT LOWER	4
		IS STRONGLY LOWER	5
YOU SURELY KNOW THAT THERE IS ALSO AN INFORMAL / SHADOW ECONOMY IN THE CZECH REPUBLIC.			
A07	ACCORDING TO YOU, WHAT PERCENT OF ADULTS IN THE CZECH REPUBLIC HAVE ALSO AN INCOME FROM THE SHADOW ECONOMY?		
	I DO NOT KNOW		98
A08	ACCORDING TO YOU, WHAT PERCENT OF ADULTS IN YOUR NEIGHBORHOOD HAVE ALSO AN INCOME FROM THE SHADOW ECONOMY?		
	I DO NOT KNOW		98
A09	DO YOU THINK THAT TO HAVE AN UNDECLARED INCOME (UNTAXED) IS:	STRONGLY MORAL	1
		MORAL	2
		NEITHER MORAL, NOR IMMORAL	3
		IMMORAL	4
		STRONGLY IMMORAL	5
		I DO NOT KNOW	98
A10	WHAT WILL BE THE REACTION OF YOUR FAMILY AND FRIENDS IF THEY FIND OUT THAT YOU HAVE UNDECLARED (UNTAXED) INCOME?	THEY SURELY AGREE	1
		THEY PROBABLY AGREE	2
		I DO NOT KNOW	3
		THEY PROBABLY DO NOT AGREE	4
		THEY SURELY DO NOT AGREE	5
		I DO NOT KNOW	98
A11	SUPPOSE YOU OWE THE STATE TAX PAYMENT IN THE AMOUNT 100.000 KČ. WHAT PENALTY WILL YOU HAVE TO PAY AFTER A YEAR?		
A12	ON A SCALE OF 0 TO A 100, SUPPOSING THAT 0 IS BEING SURE YOU WILL NOT BE CAUGHT AND 100 BEING SURE YOU WILL BE, WHAT WOULD BE THE NUMBER CORRESPONDING TO THE RISK OF YOUR BEING CAUGHT BUYING UNDECLARED GOODS AND SERVICES (OR JOBS)?		
B01	HAVE YOU EVER BOUGHT GOODS AND SERVICES COMING FROM UNDECLARED WORK?	YES	1 ⇨B02
		NO	2 ⇨B03
B02	WHY NOT	A. I NEVER NEED SUCH A GOOD OR SERVICES	1 2
		B. I NEVER HAVE SUCH AN OCCASION	1 2
		C. I THINK IT IS RISKY	1 2
		D. I THINK IT IS IMMORAL	1 2
	1=YES 2=NO	E. OTHER REASONS:	1 2
B03	WHAT PROPORTION (IN %) OF THESE UNDECLARED GOODS AND SERVICES (OR JOBS) HAVE YOU PAID IN	A. CASH	
		B. CREDIT CARD OR BANK TRANSFER	
		C. EXCHANGE FOR OTHER SERVICES	
		TOTAL	1 0 0
B04	GENERALLY, HOW WOULD YOU COMPARE UNDECLARED GOODS AND SERVICES WITH DECLARED GOODS AND SERVICES (OR JOBS) CONCERNING… *1=UNDECLARED IS SUPERIOR, 2=EQUAL, 3=DECLARED IS SUPERIOR*	A. QUALITY	1 2 3
		B. WARRANTIES	1 2 3
		C. AFTER SALE SERVICES	1 2 3
		D. PRICE	1 2 3

B05	WHO DO YOU BUY UNDECLARED GOOD / SERVICES FROM? *1=YES* *2=NO*	A. FROM FAMILY MEMBERS	1	2
		B. FROM FRIENDS	1	2
		C. FROM PERSONS IN YOUR NEIGHBORHOOD	1	2
		D. FROM COLLEAGUES FROM YOUR ACTUAL/ FORMER JOB	1	2
		E. FROM YOUR ACTUAL/ FORMER EMPLOYEES	1	2
		F. FROM YOUR ACTUAL/ FORMER BOSSES	1	2
		G. FROM OTHERS	1	2
B06	INDICATE THE REASONS THAT MADE YOU BUY THESE UNDECLARED GOODS AND SERVICES (OR JOBS): (CHECK MANY ANSWERS IF NECESSARY) *1=YES* *2=NO*	A. PRICES OF THESE GOODS/ SERVICES ARE LOWER	1	2
		B. LABOR COSTS ARE LOWER	1	2
		C. BECAUSE THE GOOD OR SERVICE ARE BETTER IF UNOFFICIALLY AVAILABLE	1	2
		D. TO HELP SOMEONE WHO HAS PROBLEMS	1	2
		E. TO HELP SOMEONE WHO IS UNEMPLOYED	1	2
		F. BECAUSE THE GOOD OR SERVICE IS NOT OFFICIALLY AVAILABLE	1	2
		G. OTHER REASONS:	1	2

B07	COULD YOU WRITE DOWN YOUR TOTAL EXPENSES FOR UNDECLARED GOODS AND SERVICES (OR JOB) FOR 2000,						
A.	RENOVATIONS AND REPAIRS OF BUILDING (CARPENTRY, PLUMBING, ELECTRICITY, PAINTING…						
B.	HOUSEHOLD MAINTENANCE (CLEANING, SNOW REMOVAL, EXCAVATION WORKS, LAWN MOWING…)						
C.	RENOVATIONS AND REPAIRS OF GOOD (CAR REPAIR, BODY WORK, BICYCLE AND ELECTRIC APPLIANCE REPAIRS…)						
D.	ROOM RENTAL						
E.	BABY-SITTING, CARE SERVICES (NURSING, CARE FOR THE ELDERLY)						
F.	PERSONAL SERVICES (HAIRDRESSING TYPING, DRESSMAKING….)						
G.	PRIVATE CLASSES (DANCING, ENGLISH CONVERSATION…)						
H.	SELLING GOODS (DOOR-TO-DOOR, TELEMARKETING…)						
I.	TRANSPORTATION SERVICES (CHAUFFEUR, DELIVERYMAN, MOVER…)						
J.	SERVICES RELATED TO WEDDINGS AND RECEPTIONS (MUSICIAN, D.J., PHOTOGRAPHER, SINGER, CATERER, …)						
K.	FOOD AND CATERING SERVICES						
L.	PURCHASE OF ALCOHOL, TOBACCO						
M.	SALE OF FARMING, HUNTING, FISHING, AND FOREST PRODUCTS						
N.	FACTORY WORK (ENGRAVING, WOOD SAWING, WELDING…)						
O.	PROFESSIONAL SERVICES (PSYCHOLOGY, MEDICINE, MATHEMATICAL, ACCOUNTING, ARCHITECTURE …)						
P.	OTHER:						

C01	HAVE YOU EVER BEEN ENGAGED IN THE UNDECLARED SECTOR?			
		YEAR 2000	YEAR 1999	YEAR 1995
	OFTEN	1	1	1
	OCCASIONALLY	2	2	2
	NEVER	3	3	3

C02	WHY HAVE YOU NEVER BEEN ENGAGED IN THE UNDECLARED SECTOR? *1=YES* *2=NO*	A. I NEVER NEEDED IT	1	2
		B. I NEVER HAVE HAD AN OCCASION	1	2
		C. I THINK IT IS RISKY	1	2
		D. I THINK IT IS IMMORAL	1	2
		E. OTHER REASONS:	1	2

C03	YOUR MAIN UNDECLARED ACTIVITY	WORK (BEING EMPLOYED)		1
		YOUR OWN BUSINESS		2

C04	HOW MANY PERSONS WERE ENGAGED IN UNDECLARED ACTIVITY WITH YOU IN 2000?				
C05	HOW MANY HOURS A DAY WERE YOU ENGAGED IN UNDECLARED ACTIVITY IN 2000?				
C06	WHO DO YOU SELL UNDECLARED GOOD SERVICES TO? *1=YES* 2=NO	A. TO FAMILY MEMBERS		1	2
		B. TO FRIENDS		1	2
		C. TO PERSONS IN YOUR NEIGHBORHOOD		1	2
		D. TO COLLEAGUES FROM YOUR ACTUAL/ FORMER JOB		1	2
		E. TO YOUR ACTUAL/ FORMER EMPLOYEES		1	2
		F. TO YOUR ACTUAL/ FORMER BOSSES		1	2
		E. TO OTHERS		1	2
C07	WHAT % OF GOODS / SERVICES, OF UNDECLARED ACTIVITY, WHICH YOU SELL IS PAID BY:	A. CASH			
		B. CREDIT CARD OR BANK TRANSFER			
		C. EXCHANGE FOR OTHER SERVICES			
		TOTAL	1	0	0
C08	INDICATE THE REASONS THAT MADE YOU SELL THESE UNDECLARED GOODS AND SERVICES *1=YES* *2=NO*	A. I CAN NOT FIND AN OFFICIAL JOB		1	2
		B. FAMILY BUDGET SUPPORT		1	2
		C. I WANT TO CONSUME MORE		1	2
		D. I WANT TO DO SOMETHING ALL THE TIME		1	2
		E. I WANT TO BE MY OWN BOSS		1	2
		F. TAX EVASION		1	2
		G. I ENJOY RISK		1	2
		H. NOT TO LOOSE SOCIAL BENEFITS		1	2
		I. OTHER REASONS:		1	2
C09	WHAT % OF YOUR TOTAL INCOME COMES FROM (IN 2000):				
A. RENOVATIONS AND REPAIRS OF BUILDING (CARPENTRY, PLUMBING, ELECTRICITY, PAINTING…					
B. HOUSEHOLD MAINTENANCE (CLEANING, SNOW REMOVAL, EXCAVATION WORKS, LAWN MOWING…)					
C. RENOVATIONS AND REPAIRS OF GOOD (CAR REPAIR, BODY WORK, BICYCLE AND ELECTRIC APPLIANCE REPAIRS…)					
D. ROOM RENTAL					
E. BABY-SITTING, CARE SERVICES (NURSING, CARE FOR THE ELDERLY)					
F. PERSONAL SERVICES (HAIRDRESSING, TYPING, DRESSMAKING….)					
G. PRIVATE CLASSES (DANCING, ENGLISH CONVERSATION…)					
H. SELLING GOODS (DOOR-TO-DOOR, TELEMARKETING…)					
I. TRANSPORTATION SERVICES (CHAUFFEUR, DELIVERYMAN, MOVER…)					
J. SERVICES RELATED TO WEDDINGS AND RECEPTIONS (MUSICIAN, D.J., PHOTOGRAPHER, SINGER, CATERER…)					
K. FOOD AND CATERING SERVICES					
L. PURCHASE OF ALCOHOL, TOBACCO					
M. SALE OF FARMING, HUNTING, FISHING, AND FOREST PRODUCTS					
N. FACTORY WORK (ENGRAVING, WOOD SAWING, WELDING…)					
O. PROFESSIONAL SERVICES (PSYCHOLOGY, MEDICINE, MATHEMATICAL, ACCOUNTING, ARCHITECTURE …)					
P. OTHER:					
C10	ARE YOU SATISFIED WITH YOUR UNDECLARED ACTIVITY	VERY SATISFIED			1
		SATISFIED			2
		NEITHER SATISFIED, NOR NOT SATISFIED			3
		NOT SATISFIED			4
		STRONGLY NOT SATISFIED			5

C11	YOUR CURRENT EVALUATION OF UNDECLARED JOB (INCOME, WORKING CONDITIONS…) IS:	SUPERIOR TO MY EXPECTATION	1
		EQUAL TO MY EXPECTATION	2
		INFERIOR TO MY EXPECTATION	3
C12	WHAT IS YOUR INCOME FROM UNDECLARED JOB	LESS THAN 10.000 KČ	1
		10.001 – 15.000 KČ	2
		15.001 – 20.000 KČ	3
		20.001 – 25.000 KČ	4
		25.001 – 30.000 KČ	5
		30.001 – 35.000 KČ	6
		35.001 – 40.000 KČ	7
		MORE THAN 40.001 KČ	8
		NOT RESPONDING	9
TIME B	FILL ACTUAL TIME	HOURS	
		MINUTES	
RSEX	SEX OF RESPONDENT:	MALE	1
		FEMALE	2
SIZE	SIZE OF TOWN	LESS THAN 999 HABITANTS	1
		1000 - 4999 HABITANTS	2
		5000-19999 HABITANTS	3
		20000-99999 HABITANTS	4
		100000 AND MORE HABITANTS	5
REG	REGION:	PRAGUE	1
		MIDDLE BOHEMIA	2
		SOUTHERN BOHEMIA	3
		WESTERN BOHEMIA	4
		NORTHERN BOHEMIA	5
		EASTERN BOHEMIA	6
		SOUTHERN MORAVIA	7
		NORTHERN MORAVIA	8
REG	REGION OF SLOVAKIA	BRATISLAVA	1
		WESTERN SLOVAKIA	2
		MIDDLE SLOVAKIA	3
		EASTERN SLOVAKIA	4

CHAPTER 7

Informal Labor Market and Informal Economy During Economic Transition: The Polish Perspective

Maciej H.Grabowski

Informal Labor – Place in the Underground Economy, Main Characteristics of its Activities and Evolution in the Course of the Transition

The informal sector, also referred to as the underground economy, which has been drawing particular attention from experts and politicians lately, has sprung up as a topic of academic research relatively recently. In the 1960s textbooks on public finance did not mention it as a problem at all. A breakthrough in this respect happened in 1970s; extensive research on the informal sector and especially on its sociological and economic aspects was further conducted in Poland in the 1980s (Sowa, 1990, Kokoszczyński, 1988 and Wyżnikiewicz, 1987).

The nature and the mechanisms of the informal economy changed with the deregulation and liberalization when rules of competition were being set up. Before 1989 the informal sector in Poland was stimulated mainly by the excessive limitation in economic activities (including the prohibition of certain forms of activity, the necessity of obtaining licenses, etc.) and by the limited access to the means of production. Since 1989 the improvement of the competitive position (for instance, by reducing costs) was the main motivating factor for firms to remain in the underground economy.

Informal labor obviously represents only a part of the underground (or the informal) sector. Clandestine employment (or informal labor) may be defined as additional or primary job, which is performed through by-passing regulations of the

labor or tax codes. Such a definition can be applied to both illegal employment between households and companies, irrespective of whether they are registered or not, and it also covers self-employment. This definition may also apply to foreigners and to work, which is not paid for (i.e. not valued in money). Informal labor can be grouped or classified according to various criteria. It may represent the principal or the additional place of employment i.e. the source of employees' income. Clandestine employment may be permanent or temporary. The employer may be a household or a company (registered or not). As far as the economic sectors are concerned, illegal employment may be found in industry, construction, agriculture, transportation and services. Illegal employment may be provided by residents and non-residents of a country.

Main Sources of Data and Assessment of Informal Labor

Methods of Assessment of Informal Labor and Their Application in Poland

The sources of information on informal labor are not numerous. There are direct and indirect methods for assessment of informal labor. Indirect methods are based on estimation of the underground economy as a whole – this is done, for instance, using monetary methods, data from household surveys, analysis of value-added by sectors, etc.[1]

Direct methods can be based on questionnaires designed for a specially selected sample or through Labor Force Survey (LFS) samples. Some of the direct methods are used to obtain data from specific societal groups. LFS have been carried out by GUS (the Central Statistics Office). These surveys are based on large representative and rotating samples of the adult population and have been conducted quarterly in Poland since 1992.

All of these methods, by definition, do not provide genuine data of number of people employed in the informal sector or the amount of labor involved (for instance, the number of hours worked). Errors of measurement are not practically possible to estimate. Different methods are used for different purposes (for instance, estimation of the number of permanently/temporary employed people in the informal sector, estimation of the number of hours worked, the types of work or industry sectors) and they have their own pros and cons.

Methods Based on Labor Force Surveys

Thanks to LFS two kinds of estimations can be done. The first method is based on the assumption that the results of LFS are accurate, and employment data provided by employers is incorrect. The number of people working according to LFSs is higher than

[1] For an excellent review of the methods, see Schneider and Enste (2000).

the number of people working according to the statistical declarations of employers; the difference is the number of people employed in the informal sector. Nevertheless, one can notice that this method may not include people, who work legally or illegally, for instance, after business hours. LFSs by definition do not include people working abroad, foreigners staying in Poland and people staying in Workers Hostels. This makes the assessment of informal labor much more complicated. The second method using LFS data is based on a comparison of the unemployed according to the Labor Administration and the LFS estimates.

The results of LFSs are provided quarterly, so we can estimate the number of permanently illegal workers every three months. Assuming that the fixed error of these surveys does not change over time, we can observe the dynamics of informal labor.

Estimates of informal labor based on LFS results indicate that the peak was reached in 1994 and since then it has been steadily diminishing (see table 2.1).

TABLE 2.1: ESTIMATES OF INFORMAL LABOR BASED ON LFS (IN THOUSANDS)

Method based on:	*1993*	*1994*	*1995*
LFS data and the number of people employed	365	840	755
LFS data and the number of people unemployed	1,084	1,126	1,011

Source: Kałaska, Kostrubiec, and Witkowski (1996, pp. 6-11).
Note: Estimates only for permanently employed in the informal sector.

The data from table 2.1 suggest that there are major problems with these methods of assessment as results vary very much.

Special Large Sample Surveys

Special surveys on informal labor were conducted by GUS in 1995 (Kalaska et al., 1996) and 1998 (Kostrubiec, 1999). The sample size used was the same as for LFS - around 11,000 households (i.e. over 25,000 people were involved in each survey) during the first six months of each year.

Special surveys carried out by GUS in 1995 and 1998 allowed to understand the features of informal labor, including working hours, seasonal character, temporary illegal jobs, regional characteristics, etc. Thus, 2.199 million persons worked on black in 1995 and 1.431 million in 1998, which represents respectively 7.3 percent and 4.8 percent of the total population of age above 15 years old. This reduction of the number of illegal workers can be explained by the increase of employment from 15.48 million in 1995 to 16.27 million in 1998 and by reducing the number of unemployed from 2.23 million in 1995 to 1.83 million in 1998 (GUS 2000).

These surveys showed that informal labor is usually temporary and seasonal. In 1995 957,000 (or 43 percent of all illegal employees) worked permanently in informal sector and it was the only job for them; in 1998 this share was 46 percent (or 662,000).

This also means that 54-57 percent of the illegal workers had an additional legal job. Interestingly, well educated people often had two jobs (one legal and one illegal); 84 percent of the illegal workers among university-educated people had at the same time a legal principal job.

People with vocational training constituted the most numerous group of illegal labor. In 1995 about 11 percent of all persons in this category were informally employed, followed by the people with only elementary education (6.7 percent) and university graduates (5.5 percent). These numbers show the structure of labor demand in the informal sector.

There is a significant seasonality in the informal labor market in Poland. Summer months are much busier than winter months. The lowest demand for black labor was observed in January – 3.5 times lower than in July, which was confirmed by the surveys 1995 and 1998.

Informal labor is more common for male and less for female workers. The number of men involved is twice as large as that of women. Young and middle-aged people are the most attractive groups for illegal employment. The share of illegally employed in age group between 25 and 44 years of age was 10.4 percent in 1995 and 9.0 percent in 1998. Older people (over 60 years of age) are the least attractive for black labor market employment.

The surveys revealed that there were strong regional disparities in the informal labor sector. The Northern and Eastern parts of Poland were the regions with the strongest informal sector the central part, the South and the Mid-West had the weakest informal sector. Kostrubiec (1998) provided a correlation analysis, which showed that there was a significant correlation between regional unemployment rates and informal labor participation.

Small Sample Surveys

Other methods used in Poland assessment of informal labor were based on small representative sample surveys (over 1000 respondents). The Gdansk Institute for Market Economics (GIME) carried out such surveys in June 1994 and in May 1997 (Grabowski, 1995 and 1997). These surveys confirmed to a large extent the characteristics and the trends of informal labor observed in surveys done by GUS in 1995 and 1998, and to a lower extent - its size. According to these surveys 29.6 percent and 14.1 percent of the people were involved in unregistered work in 1994 and 1997 respectively. These differences may be explained by the timing of the surveys, which were carried out in May and June, i.e. during the months of high informal activities. The samples were derived from slightly different population groups: for the GUS survey it was the groups of people over the age of 15 while for the GIME survey it was the groups of people over the age of 18. The main results of the small sample surveys are provided in table 2.2.

TABLE 2.2: STRUCTURE OF INCOME FROM INFORMAL EMPLOYMENT IN 1994 AND 1997

sample structure for both surveys	*persons with unregistered income*				
	1994 (307 persons out of 1050)			*1997 (142 persons out of 1008)*	
1	*2*	*3*	*4*	*5*	*6*
	%	*%*	*average amount of unregistered income (PLN)*	*%*	*average amount of unregistered income (PLN)*
Total	*100*	*29.6*	*160*	*14,1*	*267*
Male	50	64	180	65	246
Female	50	36	110	35	278
Place of living (in '000):					
city +200	24	28	170	22	172
50-200	16	14	130	20	290
up to 50		22	26	180	27
228					
village	37	31	160	31	354
age:					
18-24	15	20	160	22	185
25-39	30	36	170	40	250
40-59	36	37	150	32	352
+60	19	7	180	5	229
labor relations:					
employees	48	56	160	58	289
farmers	6	4	240	2	225
pensioners	25	11	160	8	223
students	7	9	140	11	126
unemployed	10	16	190	14	305
not working	3	3	130	6	301
Education:					
Elementary	26	13	100	29	221
Vocational	25	35	180	31	265
High	36	37	170	29	353
University	12	15	150	11	167

Source: Grabowski (1995 and 1997).

Notes:

(i) Surveys were carried out in June 1994 and May 1997 by Pracownia Badań Społecznych in Sopot.
(ii) Columns 2, 3 and 5 may not sum up to 100 due to rounding error.
(iii) Non-response was not taken into account for calculations.

The data in table 2.2 suggest that informal labor diminished between 1994 and 1997, but its main characteristics remained the same. There is, however, one exception: in 1993 the least educated and skilled people did not work illegally as much as they did in 1997. Informal labor diminished between 1994 and 1997, but the average nominal income from informal work increased roughly at the rate of inflation - it was respectively 67 percent and 75 percent in June 1994 and in May 1997.

There is one more important feature of informal labor – the difference among employers. The results of the empirical surveys indicated that informal employment in firms is much less popular than employment in households. This means that 14 percent (or between 14 and 17 percent) of all illegal workers are employed by firms (mostly

small, private firms); the rest, i.e. 86 percent, worked for households. Still, firms' black workers are much often permanently employed and their jobs are the principal, not the additional, ones. Grabowski (1995) provided a detailed analysis of the data, which showed that there is a link between the official labor market and the informal labor market - for instance, there is a strong correlation between the rates for work and the hours worked in both markets. This suggests that labor supply (hours worked) is strongly related to the rates in both markets. Thus, if the difference between the rates for work in both markets is small, the supply of informal labor is small as well, *ceteris paribus*.[2] There is also a relatively strong correlation (but not as strong as the correlation between the rates and the hours worked) between the rates for work in both markets. It means that those who make a good living in the formal market usually make a good living in informal market too, and vice versa.

Official Assessment of the Hidden Economy and Unregistered Labor

GUS provides estimates of the hidden economy according to the rules of European System of Accounts 1995 (ESA 1995). GUS does not, however, provide estimates of the illegal activities, but of the hidden economy. It is defined as economic activities not prohibited by law, but partly or wholly hidden vis-a-vis the public administration (fiscal, statistical, custom, etc.). The hidden economy is divided into:

- non-registered economic activities;
- under-declared economic activities.

Estimates of the hidden economy (the under-declared activities) are done by GUS for registered private firms of the following sizes:

(i) 0-5 employees for all sectors;
(ii) 6-50 employees for the sectors of manufacturing and mining;
(iii) 6-20 employees for all other sectors.

Non-registered economic activities are estimated for individuals on the basis of the assumption that they work mostly in service sector. Three methods are used:

(i) direct method;
(ii) labour force survey (LFS) and module-survey of non-registered labour;
(iii) survey of consumers.

A direct method is used for the estimation of under-declared economic activities of firms. It is based on the assumption that the average productivity of labor and the wage levels are similar in the informal and the formal economy. This estimation is done by sector of the economy, localization (rural and urban), and the size of firm (according to the number of employees).

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[2] Lemieus, Fortin, and Frechette (1994) drew similar conclusions about the Canadian labor markets.

Labor surveys are used to estimate non-registered labour. Three sets of data are used:

(i) official statistical data on wages, number of employees and registered unemployed persons;

(ii) LFS;

(iii) module-survey of non-registered labour.

On the basis of these methods the number of individuals working in the informal sector and their income can be estimated. Consumer surveys are used to estimate the expenditures of households on services (such as childcare, rent, car repair, cleaning and home repair) and construction. It is compared with the available statistical data on such activities. The assessment of the hidden economy is provided in table 2.3. Table 2.4 provides data on employment, the hidden economy and unregistered labor in 1995-1999.

TABLE 2.3: ASSESSMENT OF THE HIDDEN ECONOMY IN THE CREATION OF GDP IN 1995-1999 (IN CURRENT PRICES)

	1995	*1996*	*1997*	*1998*	*1999*
			In %		
GDP (hidden economy not included)	100	1000	100	100	100
GDP (hidden economy included)	116.6	115.9	115.2	115.3	114.5
Disaggregation of hidden economy	16.6	15.9	15.2	15.3	14.5
(i) in registered firms	11.9	11.3	11.0	11.0	10.4
(ii) non-registered labour	4.7	4.6	4.2	4.3	4.1
A. Manufacturing	1.9	1.6	1.5	1.6	1.4
B. Construction	3.1	2.9	2.5	2.5	2.5
C. Trade and Repair	8.6	7.8	7.2	6.9	6.5
D. Transport	1.0	1.0	0.9	0.9	0.8
E. Firms services	0.6	1.0	1.6	1.9	1.9
F. Other sections	1.4	1.6	1.5	1.5	1.4

Source: Rachunki narodowe według sektorów i podsektorów instytucjonalnych 1995-1999 (2001, p. 472).

The data from tables 2.3 and 2.4 suggest that there is relatively weak correlation between unregistered labor and the labor market. In 1995-1999 the numbers on unregistered labor are almost flat while unemployment as well as employment varied strongly. This finding is contrary to intuition and the conclusions of earlier research. The trend of decline of the informal sector during 1995-1999, however, may be explained by the strong economic growth during that period.

TABLE 2.4: EMPLOYMENT, UNEMPLOYMENT, HIDDEN ECONOMY AND UNREGISTERED LABOR IN 1995-1999

	1995	*1996*	*1997*	*1998*	*1999*
Employed (December, thousands),	15,486	15,842	16,294	16,267	16,009
Including self-employed	5,261	5,398	5,599	5,648	5,578
Unemployed (December, thousands)	2,629	2,359	1,826	1,831	2,349
Unemployment rate (%)	14.9	13.2	10.5	10.4	13.1
Unemployed (according to LFS; November, thousands)	2,233	1,961	1,737	1,827	2,641
Unemployment rate (%)	13.1	11.5	10.2	10.4	15.3
Employed in the hidden economy (thousands)	805	850	870	830	820
Hidden economy (% GDP)	16.6	15.9	15.2	15.3	14.5
Unregistered labor in GDP (% GDP)	4.7	4.6	4.2	4.3	4.1
GDP growth (%)	7.0	6.6	6.8	4.8	4.1

Source:
1. Rocznik Statystyczny Pracy (2000, pp. 27, 82, 95).
2. Rocznik Statystyczny (2001, p. 131).
3. Rachunki narodowe według sektorów i podsektorów instytucjonalnych 1995-1999 (2001, p. 472).

Economic, Institutional and Social Causes of the Informal Labor Market

The main causes of informal labor may be divided in three main groups: economic, institutional and social. This classification can be instrumental for the adoption of policy measures addressing the issue of informal labor.

The main economic reasons of informal labor are the following:

- lack of legal jobs;
- lack or insufficient level of legal income;
- higher remuneration if the job is done without registration;
- strong and unfair competition, which may prompt firms to look for cost reduction, including through informal labor.

Economic transition has brought new phenomena such as unemployment, poverty and large income disparities. This has been instrumental for many people to accept jobs in the informal sector. Fast changes in income distribution may create incentives for "the losers" to accept additional informal jobs. Strong competition from firms, which benefit from the informal economy, including from black labor, may create pressure for other firms to do the same (a mimic effect).

The institutional environment, in which firms, workers and households operate, is usually considered as a major cause of informal labor. This environment includes:

- high taxation on labor;

- high unemployment benefits;
- complicated procedures for getting unemployment benefits (how easy it is to get benefits, their time-span, methods of skill assessment, rules of registration of temporary job contracts by retired and unemployed people, etc.);
- other specific labor markets regulations, such as rules of hiring and firing employees, including temporary and seasonal workers;
- size and capacity of the tax administration.

High income taxes create large disparities between legal and informal wages and incentives to go informal. Empirical studies suggest that labor supply (the number of hours worked) is strongly correlated with the pay rates in both legal and informal labor markets. This means that a reduction of the divergence between the pay rates for legal and illegal work will lead to a decline of the volume of informal work. Low unemployment benefits create incentives for taking informal jobs. In addition, relatively high unemployment benefits do not motivate towards searching for jobs (this is the poverty trap). Barriers to registration of temporary labor contracts by employers may lead to increase of informal labor. Inflexible labor regulations also provide incentives to go informal. High firing costs, such as obligatory severance pay, do not encourage employers to hire workers legally. This is certainly obvious for small firms. Transformation has also brought new challenges for the administration in general, but both fiscal and labor administration can be instrumental for controlling the size of informal sector, although it takes a long time to build their capabilities.

The third group of causes of informal activities consists of psychological and cultural motivations to go informal:

- social tax morality (i.e. the acceptance of black labor and tax evasion by society);
- risk-adverse or risk-taking attitudes in society;
- willingness to work on a permanent labor contract.

Lack of identification with the state and traditions of cheating the state creates a suitable ground for informal labor relations. Strong family links and weak regional and national identification will probably lead to strong informal labor sector. Attitudes towards taking risk are also instrumental for clandestine employment.

This weak tax morality and identification with the state is indirectly confirmed by the corruption index. Table 3.1 provides data on corruption perception for 1996-1999.

Empirical surveys of informal labor have focused on the first type of causes, which suggest that informal labor has mostly economic motivation. Both surveys mentioned above are similar in this respect. Researchers also indicate that there are direct mutual benefits for both employers and employees in clandestine employment in detriment to the state. There are also numerous labor market regulations, which stimulate informal labor-market growth. Moreover, tax morality is very low and there is a significant social acceptance of black jobs.

TABLE 3.1: CORRUPTION PERCEPTION INDEX FOR POLAND IN 1996-2001

Indicator	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*
CPI (corruption perception index)	5.57	5.08	4.6	4.2	4.1	4.1

Source of data and notes:
Transparency International (various issues from www.transparency.org). CPI is between 0 and 10, the higher the better (less corruption).

There are two kinds of institutional causes for the informal labor market in Poland. First, new labor regulations and policy measures were introduced to limit the social costs of the reforms. Their main goal was to provide social safety nets for workers and obligations set on labor were too easy to comply with - for instance, it was relatively easy to get unemployment benefits for any person without a job. Additionally, new administration, which was created to deal with labor issues, needed time to acquire skills and build capabilities. Second, labor regulations, which were enacted before 1989, to a large extent carried a disregard for the problems of small firms. As a result, regardless of their size firms faced the same administrative burdens. The surveys suggested that firm size is an important factor for informality.

Generally, the institutional order encourages informal labor; many features of the Polish institutional order support the growth of informality. They include, but are not limited to: high taxes (marginal rate of income tax) and social security fees, high costs of firing, and high costs and administrative burdens for hiring new employees. Since 1990 the tax and labor administration has improved and enlarged its staff and increased its capabilities, which should help control the size of informal labor in the future.

Conclusions and Final Remarks

1. The results of the surveys during the period 1995-1999 indicate that informal labor has shrunk in size and role in economy. This conclusion has been confirmed by all other surveys. Nevertheless, the estimates of the informal market size have varied significantly. The table below provides a summary of the main sources of data on the informal labor market – the numbers indicate the share of informal labor force in the total adult population.

Source of data	*1994*	*1995*	*1997*	*1998*
GIME	29.6		14.1	
LFS (*)	2.8-3.7	2.5-3.4		
GUS		7.3		4.8

(*) only permanently employed

Generally, these numbers are relatively low. Schneider provides similar data for some OECD countries. The participants in the shadow economy, taken as a part of the

labor force, are more numerous. For instance the numbers for Denmark are respectively 15.4 percent (1994) and 22.5 percent (1998); for Spain - 11.5-32.5 percent (1997-1998). Estimations for the OECD countries suggest that during the 1990s the size of informal labor increased in all OECD countries.

2. The trend towards decrease in the size of informal labor in Poland in 1994-1999 may be explained by the strong economic growth during this period and the improved quality of the labor market data. Thus, between 1994 and 1998 unemployment dropped by about 1 million people.

3. Assessments of the Polish informal labor market do not cover all participants of this market. There is anecdotal evidence, for instance, about the large number of foreigners working on black in Poland. The number of foreigners, who worked illegally and were caught by the Polish labor administration, increased over the recent years. This part of informal labor market is not taken into account by any assessment.

4. Informal and regular labor markets are inter-related. The nature of this relationship should be taken into account by policy makers in the design and implementation of policies aimed at limiting the informal labor market.

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CHAPTER 8

Behind the Informal Economy: Estimating, Explaining, Counteracting

Guoda Steponaviciene

The essence of an informal economy is to escape from being measured and captured; therefore both definition and methodologies shall be treated only as a way of approximation more than elsewhere in the economy in general. The informal economy is particularly flexible in reacting to changes in the regulatory framework - every new prohibition or regulation widens its scope and size. What was formal and legitimate yesterday can become informal today, for instance, the business of individual tours by boats before and after introducing new standards for passenger boats, or kiosk owners business before and after introducing the requirements to use cash registers.

It is universally recognized that official statistics fails to reflect all the activities in the national economy. The informal economy exists in all countries, although those, which are in a process on transition, provide additional space for its existence.

In this paper the term "informal economy" refers to economic activities which are either illegal or, if legal, go unreported (or partly unreported) in order to avoid taxes or state regulation. The illegal economy includes any activity prohibited by law. Household economy, including activities such as babysitting, construction and repair services or garden work grounded in personal relationships or recommendations, is excluded from the concept of the informal economy.

The Lithuanian Department of Statistics (LDS) normally adjusts GDP in an upward direction to include the informal economy. Its size, however, was measured

only once - in 1995 when it was estimated to be 23.4 percent of GDP. In this number 16 percentage points were included for economic reasons and 7.4 points - for statistical reasons, for instance, when companies fail to submit periodic reports to the Department of Statistics (although the underlying activities can hardly be considered as informal from our standpoint). Illegal activities were excluded from the analysis on the grounds that they are largely of international nature. The main method used by the LDS in measuring the informal economy was an anonymous opinion poll of tax inspectors, state social insurance fund employees as well as interviews with randomly picked individuals. Salaries and wages were adjusted on the assumption that they could not be lower in private enterprises than in state-owned entities, an assumption which is highly questionable.

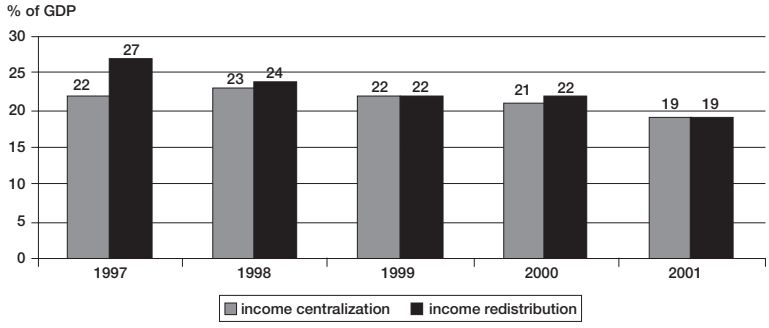
The Lithuanian Free Market Institute has conducted regular, semi-annual surveys of market participants' expectations since 1997. The informal economy is one of the issues under analysis. The survey is based on the expert consensus paradigm originating from the theory of rational expectations. In theory, market participants use all available information to make estimates and forecasts. It is the expectations of market participants that determine their actions and the trends in economic development. LFMI's survey participants include managers, financial analysts and other employees of successful business enterprises. They are asked to provide estimates and forecasts of Lithuania's economic variables based on all available information. The rationale for our survey is the obvious mismatch between the official statistics and reality (the number of cars in the streets, housing purchases, cafes' turnover, etc.) which most investors find rather confusing.

LFMI Survey Results

The results of the LFMI's surveys show that the informal economy in Lithuania has been steadily shrinking. This seems to indicate a positive trend at first glance, but without knowing the cause of the informal economy and its decline interpretation of the figures can be superficial. People who for various reasons cannot find their place in the formal economy can either go informal or turn to the labour exchange or their municipality for social support. A comparably low level of the informal economy can be indicative of a lack of entrepreneurship in society and this is very likely to be the case for Lithuania.

In exploring the phenomenon of the informal economy, it is not the numbers but the causes behind them that matter the most. The roots of a shadow economy lie in the burden of taxes and other government regulations; other factors include the quality of state administration and services, the volume of cash transactions, price differences in neighbouring countries and the general economic situation. The reasons for an individual to go informal are manifold, but one thing is clear: if business conditions are favourable the risk of going informal does not pay off.

INFORMAL ECONOMY



Source: LFMI surveys

From the perspectives of policy decision-making finding measures that would make informal business activity less attractive is crucial. For the shadow sector to contract and, more importantly, for the formal economy to expand, it is essential to have:

- minimum taxes and regulations, including legal provisions on starting a business, employment regulations, licensing rules, etc.;
- simple and efficient administration;
- equal and transparent rules (e.g., no tax exemptions, minimal discretionary powers of public officials to interpret and apply legal provisions) and small bureaucracy;
- clear procedures for settling tax and other business disputes;
- reasonable fines;
- property and business security (e.g., law enforcement);
- stability of the legal system;
- corporate development (more companies investing in brand name, publicity, etc.);
- adequate general level of income.

The Lithuanian Free Market Institute's motto provides a suitable summary of what has been said: if you don't create a free market, a black market will emerge.

CHAPTER 9

Barriers to Participation: The Informal Sector in Emerging Democracies. The Case of Hungary

Laszlo Kallay

In the late eighties Hungary started a transition process from central planning and a soft communist dictatorship towards a free market economy and political democracy. On the ruins of the old economic regime hundreds of thousands of new businesses emerged in a country of 10 million people. With the legacy of an informal sector in the planned economy, one of the major concerns of economists and social scientists was that a large informal sector would develop.

New Institutions, New Entrepreneurs

In the early phase of transition, entry barriers (costs of registering a business) were low, registered businesses could deduct expenses from their taxable income, and sometimes enjoyed tax benefits as well. As early as in 1989 the Hungarian government started a deregulation campaign abandoning several pieces of regulation.[1] The economy was liberalized relatively fast; certain restrictions and state controls over foreign trade, currency issues, licensing, investment and employment were eased. Enforcement efforts of the government were not particularly intense. The majority of SMEs could follow a minimum taxation strategy, meaning they did not pay profit or income taxes and kept social insurance contribution payments at the lowest possible level. There was a gap between taxes to be paid by law and the amount actually paid. The major form of informality was tax evasion of registered businesses. At the beginning of the transition process the benefits of having a registered business were higher than the costs of registering and operating a business.

[1] Authorities had to survey all regulations they had issued before and find good arguments if they wanted to keep any of them.

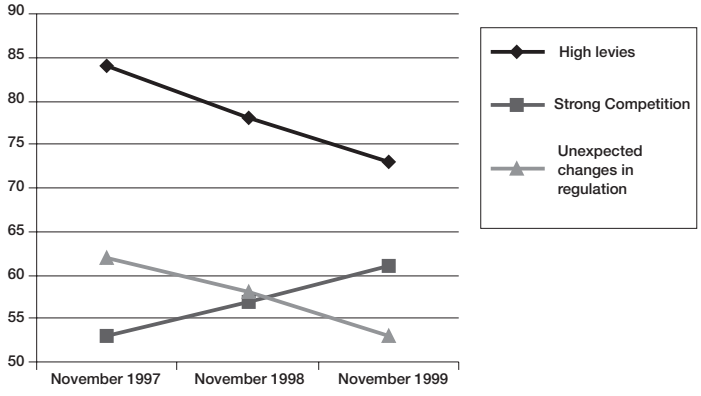
What happened next is a kind of challenge to the simple interpretation of the role of transaction costs. The costs of registering and operating a business (including money, time and effort) slowly, but steadily started to grow for two reasons: a) regulation on licensing became more and more extensive; b) enforcement on declaring a larger portion of income became stricter. This means that although, generally speaking, tax rates became somewhat lower, taxes and contributions were paid on a larger part of the income. At the same time, most of the estimates show that the share of the informal sector in the Hungarian economy has decreased in this period, with other signs like the number and quality of tax returns, and to a lower extent the cases of non-payment problems also supporting this statement. At the first sight, this seems to be illogical – is it possible to have higher transaction costs and lower share of the informal sector?

One potential way to address this contradiction is if we think about transaction costs in relative terms, and not as amounts of time and money required in order to follow the rules. The key notion here is the learning process. If entrepreneurs learn to comply with the existing rules the actual level of effort may be lower even if the prescribed obligations are more complicated. Chart 1 shows that SMEs in Hungary felt somewhat less uncomfortable about high levies and unexpected changes in regulation as an obstacle of doing business in November 1999 than two years before. In the same period competition became a more important problem for them - they had to spend more effort to struggle for their markets and less effort to struggle against tax collectors. Paying taxes and social contributions at high rates is one of the major items of the costs of doing business for the ventures in the formal sector. Thus, one of the key elements of making formality more attractive is to reduce the role of income redistribution systems. This has been happening in Hungary since the mid-1990s (see Chart 2). The explanation for this is not only the lower level of income centralization and a more stable legal and regulatory environment, but more importantly the improved capacity of SMEs to comply with the rules.

Taxation is always one of the most problematic issues for SMEs. More than 70 percent of the businesses in Hungary (including one person units) contract out accounting. This means that there is a supply of these services at affordable prices in large volume and very probably of acceptable quality. For the majority of businesses complying with the rules of taxation and paying social contributions means consulting with their accounting firm not only on keeping the cost of compliance low but also on reducing the risk of additional expenses coming from being fined for errors and mistakes in the tax returns.

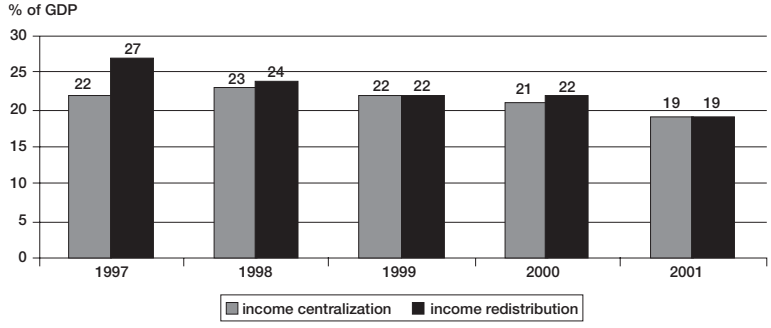
This issue is important because in an emerging market economy there is a natural trend of more and more sophisticated regulation. For example, the Central and East European countries have to adopt a huge amount of EU regulations in the course of their accession process, but improving capacity to comply with the rules may result in lower actual transaction costs.

CHART 1: INTENSITY OF OBSTACLES TO DOING BUSINESS IN HUNGARY



Source: Business survey data by the Institute for Small Business Development

CHART 2: LEVEL OF INCOME CENTRALIZATION AND REDISTRIBUTION IN HUNGARY, 1990-2001



Source: Official budget statistics.

Income centralization = all revenues collected by the central budget, local governments and the state social security system/GDP
Income redistribution = all spending by the central budget, local governments and the state social security system/GDP

The Role of Government Policy: An Unintentional Strategy?

Although the Hungarian government has declared only intentions, but never a comprehensive strategy, to push back the informal sector and attract more and more activity to the formal one, this seems to be happening judging by the actions of the government and the Parliament which, in fact, contributed to turn back the increase of the informal sector. The key points are minimizing registration costs at the beginning of the transition process, providing the opportunity to deduct costs from the tax base, compensating high tax rates, in a sense, by following a not very consistent and rigorous tax collection practice. Later on, when the early transition crisis was over, economic growth started and the number of registered businesses stabilized, the government began to send signals to the small businesses indicating the expected level of (declared) income in different trades and professions. Most of the entrepreneurs got the message and stated income just above the expected level. The result was a gradual increase of the portion of formally declared income. Another element of this strategy has been raising every year the level of minimal payments, mainly for social security contributions.

How can governments be motivated to try to push down income centralization and what should be the key element of any transaction cost reducing strategy? Hungary has had three different governing coalitions since the first democratic elections in 1990. All of them felt a pressure from different societal groups to reduce levies, and leave more income at the entities where it was originally produced.[2] This resulted in a political bidding process by political parties on reducing income centralization, quite intensive during election campaigns, which indicates that reducing government involvement in the economy is easier if it is a widely shared value in the society.

Comparison of the Two Stages

The history of the transition process in Hungary from the point of view of informal economic activity can be divided into two stages. The behaviour of entrepreneurs and the government as well as the state of the entire economy was different at these two stages. The following table is a summary of the most important aspects and changes.

Lessons

1. Making distinction between the following types of activity is important:
   - business aspects of criminal activity (e.g. trade of drugs, illegal weapons);
   - business activity where the only income is from evading taxes (illegal oil trade, reimbursing VAT with forged invoices); and

[2] This message was sometimes weakened by requests for more funds from the budget by the same interest groups.

Aspect	*Stage one 1990-1997*	*Stage two 1998-?*
Legacy of the planned (state controlled) economy	Strong	Weakening
Entry (registration) cost	Low	Slightly higher
Licensing obligations	Low	Higher
Level of tax evasion	High	Somewhat lower
Level of tax avoidance	High	High, but more difficult
Number of formally registered businesses	Large and quickly increasing	Large and slowly increasing
Level of centralization (tax and social contributions)	High	Slowly decreasing
Intensity of enforcement	Low	Gradually increasing
Economic growth	Negative	High
Capacity of entrepreneurs to comply	Very low	Increasing
Difference between the turnover of large and small businesses (in favour of large firms)	Increasing	Stagnating
Difference between the capital accumulation of large and small businesses (in favour of large firms)	Large	Large
Difference between employment by large and small businesses (in favour of small firms)	Increasing	Stagnating

- informality (not registering a business or tax evasion of otherwise normal business activity).

With regard to criminal activities, the whole range of enforcement measures should be used, including adequate legislation, efficient organisation and low tolerance. Almost the same should be done with regard to activities where the only source of income is evading taxes, although the reason of these activities is very often the weakness of the legislation.

Unregistered business activity or underpaying taxes should be treated in a different way. People who are in the informal sector cannot switch to the formal one overnight. Institutions can not be reformed in a day; democratic consolidation needs time; understanding and applying the new rules is a learning process. Thus, governments may consider to be tolerant, provided there is a clear and continuous progress towards the strategic goal of an efficiently working formal economy.

2. Timing and sequencing of policy measures is important

The first strategic goal can be getting businesses to register and see the benefits of

doing so, first of all, by making the process cheap, simple and fast. It is easier to communicate with formally registered businesses and provide further benefits to them for being formal. High tax rates and rigorous enforcement practices in this phase may neutralize low entry cost. Complying with an increasing amount of rules may be a result of a gradual process taking several years.

3. Parallel existence of formal and informal economy causes structural problems

This is especially important if large foreign investments are made in a country and standards in the foreign and locally owned part of the economy are different. Informality as a hidden support (a kind of tax exemption) for the local business does not work in the long run as it distorts allocation decisions and contributes to the disintegration of the economy.