

Subjective welfare and (in)formal sector in a transition country

Ada Ferrer-i-Carbonell

ICREA researcher at Institut d'Anàlisi Econòmica (IAE-CSIC), Spain

and

Klarita Gërxhani

Faculty of Social and Behavioural Sciences,

Amsterdam Institute for Advanced Labour Studies, Faculty of Economics and Business, and

Tinbergen Institute

University of Amsterdam, The Netherlands

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Abstract

This paper examines the relationship between working in the formal or informal sector and subjective welfare in a country in transition. It does so by allowing for individual heterogeneity in attitudes towards taxes. The results indicate that, for most individuals, working in the informal sector has negative effects on their subjective welfare. For some individuals, however, this effect is positive. The differentiating characteristic of the latter group is their low private tax morale, *i.e.*, they disagree that not paying taxes today has personal financial repercussions in the future.

Keywords: financial satisfaction; informal sector; tax morale; transition.

JEL-Classification: J0; I3; O5; H26; O17.

1. Introduction

An important episode in the previous century was the rise and fall of communist economies in Central and Eastern Europe and the Baltic states. The end of these economies led to the emergence of so-called transition countries, which are characterized by rapid economic and institutional change. This transformation has been accompanied by the appearance of an informal sector of substantial size. From an economic perspective, the informal sector is important in terms of both the re-allocation of resources it causes and its impact on individuals' welfare. This paper focuses on the latter.

Early contributions to the literature argue that average individual earnings in the informal sector are lower than in the formal sector (Merrick, 1976; Kugler et al., 1979; Bourguignon, 1979; Banerjee, 1982; Heckman and Hotz, 1986; Pradhan and van Soest, 1995; and Pisani and Pagán, 2003). Thomas (1990) presents evidence that this mainly holds for less developed countries. Moreover, working in the informal sector has other disadvantages: workers often experience worse working conditions, face higher job insecurity, have no labor contract and, as a consequence are excluded from various social benefits. Despite these disadvantages, working in the informal sector is often preferred to being unemployed (De Grazia, 1982; Kesner-Skreb, 1997; Gërkhani, 2004b) and sometimes even considered to be a better option than working in the formal sector. Aside from the financial advantage of not paying taxes (e.g., Hansson, 1982), the informal sector sometimes provides more flexibility and opportunities for individual initiative and creativity than the formal sector (De Grazia, 1982; Renooy, 1990; Marcouiller et al., 1997).

Various studies have suggested that the earnings distributions in the formal and informal sectors have substantial overlap (Fields, 1990), so that the differences may be smaller than is commonly thought (Charmes, 1990). These findings are based on distinguishing between two sub-sectors within the informal sector. One is called the 'upper-tier informal sector'. It is characterized by limited-entry and high wages, and is preferred by workers to formal sector employment. The other is called the 'easy-entry informal sector', which consists of employment that is characterized by free-entry and low wages. Workers consider the latter to be undesirable relative to formal sector employment. Based on this distinction, Fields (1990) reports that individuals working in the upper-tier informal sector have voluntarily moved there from the formal sector and are happy about their choice. In other words, for these individuals, the disadvantages of working in the

informal sector are outweighed by the advantages. Individuals who participate in the easy-entry informal sector are unsatisfied with working in the informal sector and are typically looking for jobs in the formal sector.

Despite these attempts to characterize the pros and cons of working in the informal sector, the existing literature remains unclear about the consequences for individual welfare. Although income is often used to compare individuals across sectors, there is more to welfare than just income, e.g., (un)certainty about the future and (lack of) social security. In this paper, a broader concept of economic welfare, i.e., subjective welfare is used. This is captured by individuals' own evaluation of their financial situation.

From this overview, we conclude that though the existing literature touches upon welfare differences between the two sectors, a systematic analysis of individuals' subjective welfare attributed to working in the (in)formal sector and its causes is still missing. This paper recognizes this gap and offers a first (econometric) analysis of the effect of working in the (in)formal sector on individual self-reported financial situation. The empirical analysis uses a dataset for Albania, a country in transition. After the collapse of communism, a combination of economic, social and institutional factors created suitable conditions for the informal sector to be prevalent in Albania (Gërzhani and Schram, 2006).¹ Moreover, the individual involvement in the informal sector in this country is not voluntary. This is due to a limited number of jobs available in the formal sector combined with trivial and short-termed financial support by the Albanian welfare system. As shown by Gërzhani (2004b), this lack of choice is a fundamental difference between the informal sector in developed countries and that in transition countries, which has not been taken into account in previous studies. In transition countries, 'survival' plays an important role in the decision to participate in the informal sector.² In a recent study on dichotomous sectoral composition of labor in Nicaragua, Pisani and Pagán (2003: 574) argue that "unlike developed countries which have a functional social safety net for unemployed people to 'wait' or queue for formal sector employment, Nicaragua has virtually no social safety net; this compels potential formal sector job seekers to work in the informal sector (which acts as the de facto social safety net) while awaiting formal sector employment."

¹ The average size of the shadow economy in Albania was estimated to be 33.4% in 1999/2000 (Schneider, 2005).

² The fact that formal and informal sectors are often found to be complementary in transition countries is another indication of the survival aspect of the informal sector in these countries. A broader discussion can be found in Schneider and Enste (2000).

Finally, this paper takes the analysis one step further by recognizing that individuals are not homogenous economic agents with identical perceptions of their own welfare. In the empirical application, it identifies two groups of individuals, distinguished by the extent of their ‘tax morale’. This refers to individual attitudes towards taxes. An important distinction between working in the formal and informal sector is whether or not individuals pay taxes. Individuals may, however, differ on how they perceive the financial consequences of (not) paying taxes. By allowing for this difference, the analysis provides a more accurate explanation for heterogeneity in subjective welfare.

The remainder of this paper is structured as follows. Section 2 introduces the empirical approach. This involves a description of the question used to capture subjective welfare, an explanation of the econometric model, and a characterization of the data. Section 3 presents and discusses the results. Section 4 concludes.

2. The empirical approach

2.1. Subjective measures

Psychologists have measured individual well-being by means of subjective questions since the late 1960s, starting with Cantril (1965), Wilson (1967) and Bradburn (1969). An overview of this literature is presented in Kahneman et al. (1999). More recently, many economists have made use of subjective questions on, among others, welfare (financial satisfaction), well-being, and health satisfaction, to address a wide range of scientifically and politically relevant questions.³ Subjective questions ask individuals about their life satisfaction in general or with respect to various domains of life in particular, such as housing, health, or financial situation. The most relevant characteristic of the subjective measures is their focus on individual perceptions.

The focal point of this paper is the financial consequences of working in the formal or informal sector, hence the following question is used:

“How satisfied are you with the financial situation of your household?”.

Individuals are asked to evaluate their satisfaction on a 0 to 10 scale, where 0 stands for totally dissatisfied and 10 for totally satisfied. From now on, this information will be

³ Studies include Clark and Oswald (1994); Kapteyn (1994); Ng (1997); Oswald (1997); van Praag and Frijters (1999); Pradhan and Ravallion (2000); DiTella et al. (2001); Easterlin (2001); Ferrer-i-Carbonell and van Praag (2002); Frey and Stutzer (2002); Ravallion and Lokshin (2002); Torgler (2003); van Praag et al. (2003); Ferrer-i-Carbonell and Frijters (2004); Frijters et al. (2004); Ferrer-i-Carbonell (2005); and Torgler and Schneider (2005).

referred to as individual financial satisfaction (*FS*). *FS* reflects individuals' perceptions of their economic situation. This means that two individuals who have the same income can experience different financial satisfaction levels. The analysis presented here sheds light on which circumstances, other than income, determine *FS*. Special attention is given to the importance of the sector one works in. The financial satisfaction question is thus used here as a measure of subjective welfare. This means that the lower the respondents are in the scale, the lower their subjective economic well-being is. Van Praag and Ferrer-i-Carbonell (2004) make use of the same question when studying the extent of poverty in Russia.⁴

The econometric analysis of financial satisfaction (*FS*) –and of any subjective measure– requires two main assumptions. First, individuals are able and willing to evaluate their own financial satisfaction in a questionnaire. Second, the answers to the financial satisfaction question are interpersonally comparable. In other words, it is assumed that different individuals understand and respond to the financial question in similar ways. It is beyond the scope of this paper to discuss these two assumptions. A detailed discussion is provided in Ferrer-i-Carbonell and Frijters (2004) and Senik (2004).

2.2. The model

The discussion about what is the best econometric technique to estimate the answers to satisfaction questions has not yet been resolved (Ferrer-i-Carbonell and Frijters, 2004; van Praag and Ferrer-i-Carbonell, 2004, Chp. 2). Here, an Ordered Probit is chosen. This choice is based on two assumptions we impose on the variable *FS*. First, it is not possible to observe the exact level of financial satisfaction (*FS**), but only the range in which it lies (*FS*). Second, the variable gives an ordinal ranking, not a cardinal one. For example, an individual answering '8' is more satisfied than one answering '4', but not necessarily twice as much.

The individual financial satisfaction is here described by the following empirical model:

$$\begin{aligned}
 FS^* &= \alpha + \beta \ln(y) + \gamma I + \delta X + \varepsilon \\
 FS = k &\Leftrightarrow \mu_k \leq FS^* < \mu_{k+1}
 \end{aligned}
 \tag{1}$$

⁴ Ravallion and Lokshin (2002) use another subjective welfare question, called the Economic Welfare Question, to explain the large differences between objective and subjective poverty in Russia. Other subjective measures of poverty are based on the Income Evaluation Question, the Minimum Income Question, and the Minimum Spending Question (see, e.g., van Praag, 1971, Kapteyn et al., 1988; van Praag et al., 1997; Garner and Short, 2003; and Gustafsson et al., 2004).

where FS^* is the underlying non-observed variable, FS is the observed variable, k is one of the 11 categories (0 to 10), and μ are the estimated intercept terms. Equation (1) shows that the financial satisfaction is explained by whether an individual works in the informal sector (I), by the household (monthly) net income (y), and by a set of socio-economic and demographic variables (X). I is a dummy variable that takes a value 1 if the individual works in the informal sector, and 0 if (s)he works in the formal sector. The household income is taken in logarithmic form. This specification is chosen to reflect a diminishing marginal utility of income. The error term ε , which represents the part of FS^* that cannot be explained, is normally distributed with mean 0 and variance 1, as usual in Ordered Probit. For details, see Maddala (1983).

2.3. Introducing tax morale

The early economic approaches to tax compliance are mainly based on the economics of crime and punishment arguments (see Allingham and Sandmo, 1972; Yitzhaki, 1974; and Cowell, 1990). Later research has shown that non-economic analyses of compliance seem to substantially contribute to the further understanding of individual tax compliance decision.⁵ This paper fits into the later research by focusing on tax morale as one of the most important factors within the non-economic analyses of compliance (see Alm and Torgler, 2005; 2006; Alm et al, 2006; Feld and Torgler, 2006; Torgler and Schneider, 2006). Tax morale can be defined as “individuals’ willingness to pay taxes or, in other words, the moral obligation to pay taxes or the belief in contributing to the society by paying taxes” (Cummings et al., 2004: 5). Several studies argue that tax morale, as a particular kind of individual intrinsic motivations, does not only depend on one’s upbringing but also on the specific institutional context. This includes experience with tax authorities, interaction with other taxpayers, the constitutional environment, and insecurity of property rights (Frey, 1989; Alm et. al., 1992; Feld and Frey, 2002; Schneider and Enste, 2003; Torgler, 2003).

Our data set captures two aspects of tax morale, a private and a public one. The ‘private’ tax morale reflects individual attitudes towards taxes that have direct personal benefits. In the data set, this aspect is measured by the information on whether individuals (dis)agree (on a 5-point scale) with the following statement: “Not paying social and health insurance today would cause serious financial problems for me in the future (e.g., no

pension benefits)".⁶ The underlying meaning behind this question is that individuals who agree that not paying social and health insurance today has personal financial repercussions in the future, demonstrate a high 'private' morale towards taxes. For these individuals, working in the informal sector and thus not paying taxes may negatively affect their current financial satisfaction.⁷

The public aspect of tax morale is reflected in the individual (un)willingness to contribute to public goods.⁸ This is captured by whether individuals (dis)agree (on a 5-point scale) with: "People should pay taxes because if they do, they will benefit from them (e.g., better roads, more parks, and more schools)". Individuals who agree that people should pay taxes because of the public benefits involved, reveal a high 'public' tax morale. Contributing to public goods can positively affect individual financial satisfaction in three ways: (1) individuals enjoy a larger provision of public goods, (2) altruistic individuals who contribute to public goods will experience a utility gain due to contributing to the welfare of others, and (3) the economic burden of having to pay taxes may be compensated by the pleasure of contributing to the group's welfare. The last is known as the 'warm-glow' effect, described by Andreoni (1990: 473) as the utility gain "from the act of giving".

Obviously, there is a direct relationship between the sector one works in and the (non)payment of taxes and social/health insurance. Therefore, the effect of working in the (in)formal sector on an individual's financial satisfaction may depend on the individual's tax morale. The empirical analysis distinguishes between various types of individuals (defined by their private and public tax morale), for whom the impact of working in the (in)formal sector on financial satisfaction may differ. This is operationalized using two dummy variables indicating whether individuals have a high 'private' or 'public' tax morale. They are called *HPrTm* and *HPbTm*, respectively. These dummy variables take value 1 if an individual reveals a high tax morale and 0 otherwise.⁹ Financial satisfaction

⁵ For a detailed description of the economic and non-economic theories of tax compliance, see Alm et al (1995).

⁶ In Albania, our case study, payment of social and health insurance premiums is mandatory and is directly subtracted from income together with other taxes. In addition, an individual is entitled to benefits only if (s)he has contributed to the scheme (see Beqja, 2002).

⁷ This hypothesis is closely related to a research question put forward by Feige (1990). He questions whether the benefits of working in the informal sector (by avoiding institutional constraints) outweigh the costs of exclusion from economic benefits and legal rights.

⁸ Experimental evidence shows that one reason why people contribute to taxes is because they finance public goods (e.g., Alm et al., 1992 and Becker et al., 1987).

⁹ Individuals are classified as having a *high* tax morale if they choose 1 or 2 on the 5-point scale. This corresponds to the verbal categories 'strongly agree' and 'mildly agree'. The respondents are classified as

is now regressed including two interaction terms between working in the informal sector and the two dummy variables. Additionally, the two dummy variables are included separately in the analysis so as to differentiate between the effect of tax morale through working in the informal sector, and the direct effect of tax morale on financial satisfaction.

Financial satisfaction is now explained by:

$$FS = \alpha + \beta \ln(y) + \gamma I + \varphi(I * HPrTm) + \phi HPrTm + \pi(I * HPbTm) + \kappa HPbTm + \delta X + \varepsilon \quad (2)$$

The effect that working in the informal sector has on the financial satisfaction is described by γ , $(\gamma + \varphi)$, or $(\gamma + \varphi + \pi)$ depending on the individuals' tax morale. If these three coefficients are identical, all the groups are affected in the same way. For completeness, the empirical analysis includes a third specification in which we exclude the interaction term between tax morale and working in the informal sector from equation (2). This third specification allows us to identify whether the differences (if any) in γ between equation (1) and (2) are related to the tax morale variables or to the interaction term between these variables and working in the informal sector.

2.4. The endogeneity of the sector choice

An empirical concern is that the sector choice may be endogenous. In other words, individuals self-select themselves into one sector or another. Most of the recent research until now models tax evasion and occupational decisions as an individual choice (see, for example, Watson, 1985; Jung et al., 1994; and Schroyen, 1997). While this research refers to developed countries, the literature about less developed countries argues that working in the informal sector is not a matter of choice in a transition country like Albania (see Section 1). In this paper we empirically test this hypothesis. If there were a free choice of sector, individuals would choose the sector where they obtain a higher financial satisfaction.¹⁰ In this case, one would expect individuals with a low private tax morale to choose to work in the informal sector and those with a high private tax morale to work in the formal sector. The former ones benefit financially from not paying taxes today and do

having a *low* tax morale if they answer 'neither agree nor disagree' (3), 'mildly disagree' (4), or 'strongly disagree' (5). The frequency distribution of private tax morale based on the original scale is: 82% strongly agree with the statement, 11% mildly agree, 4% are neutral, 1% mildly disagree, and 2% strongly disagree. For public tax morale, this distribution is 68%, 17%, 9%, 3% and 3%, respectively.

¹⁰ For a theoretical model in which occupational choice depends on risk attitudes, see Pestieau and Possen (1991).

not perceive any future consequences of it. For the latter, the opposite is true. We ran a Probit regression to explain the individual probability of working in the informal sector by individual private tax morale. The results show that the private tax morale has a very small and insignificant effect on the probability of working in the informal sector. In other words, whether an individual has a low or high tax morale does not have any influence on her or his decision to work in the (in)formal sector. This indicates that individuals do not self-select themselves into one of the two sectors.

In addition, one may argue that although individuals do not freely self-select into one sector, their participation in the informal sector may depend on income-earnings' options elsewhere. We have two variables to test for this in our data set, namely: the number of household members who have a paid job (or a dummy variable indicating that there is more than one household member working), and the number of family members living abroad who financially support the individual. One would expect that individuals without any alternative sources of income would have a higher probability to be in the informal sector. A probit analysis of the probability of working in the informal sector however shows that the effect of both variables is statistically insignificant even when including private tax morale in the estimation.

A second source of sample selection bias may be driven by the demand side. For example, when individuals with certain characteristics, such as low education and skills, are chosen less often to work in the formal sector. Looking at our sample we cannot exclude this option as people with higher education have a statistically significant lower probability to be working in the informal sector. This may lead to an inconsistent estimate of the effect of informal sector on financial satisfaction if education would co-determinate both, working in the informal sector and the level of financial satisfaction. This would be the case if lower educated individuals would not only have a higher probability to work in the informal sector but would also have a set of unobservable characteristics (such as reduced social network and capacity to deal with adversities) that correlate negatively with financial satisfaction. One would correct for this possible source of endogeneity by using instrument variables.¹¹ Some studies use human capital characteristics to estimate both the selection mechanism and the main equation. They do that by using different specifications of the education variables, which may lead to bias results (Dustmann and van Soest, 1998). Moreover, it is difficult to believe that education does not affect financial

¹¹ If we were to have panel data, we could alternatively apply a fixed effects model.

satisfaction in other ways than through the probability of working in the formal sector. Thus, as Dustmann and van Soest (1998) conclude regarding selection between private and public sector: "...correcting for nonrandom selection is important, but is only useful if appropriate instrumental variables are available which play a role in the selection mechanism, but can be excluded from the wage equation." (p. 1419). Next to education, other authors have instrumentalized the sector choice by, among others, the region of origin, gender, age, number of children and other household structure variables (Gindling, 1991; Magnac, 1991). In our data set, many of these variables proved not to have any effect on the sector selection. In addition, age, gender and being married suffer from the same weaknesses as education. One could also exploit geographic variation (see Beuran and Kalugina, 2006), time variation (de Holanda and Filho, 2005), or information on parent's occupation or education (e.g., Dustman and van Soest, 1998). Given the cross-sectional nature of our data set and its restriction to individuals located in only one region, we do not possess such instruments. Therefore, the best we can do is to look at the effect of working in the informal sector on financial satisfaction while controlling for those observable characteristics that differ between individuals in the formal and informal sector. Next to having lower education, being a woman, older, and having emigrated to Tirana from rural areas also increase the probability of being in the informal sector. These variables will be included in the financial satisfaction equation.

2.5. The data

The analysis is based on data collected in a field survey conducted by one of the authors in 2000, in the urban area of Tirana, the capital of Albania. The method applied is the 'self-administered questionnaire', which combines personal contacts with written questionnaires. The survey sample consisted of 1,500 households living in Tirana, which represented about 1.1% of Tirana households in 2000. The sampling was random and based on a geographical framework, covering the five –more or less equally sized– regions of urban Tirana. The main income earner of the household was asked to respond to all the questions. The response rate of 89.3% gave 1,340 valid questionnaires returned.¹² Gërxhani (2007) discusses the representativeness of the data collected by comparing its results to the most recent survey with comparable data by the Albanian Institute of Statistics (INSTAT). From the comparison, it appears that the average age of the

¹² The complete questionnaire can be found in Gërxhani (2002; 2007) and can be provided upon request.

respondents, average size of the household, percentage of children in the household, and gender division of adult members in the household are very similar in the two surveys. Hence, it is concluded that the data collected in 2000 are to a large extent representative of Tirana households. For a more detailed description of the data collection method, see Gërzhani (2007).

The data contain information about individual self-reported financial satisfaction on a 0 to 10 scale. The sample average equals 3.37, which is very low compared to the two most well known data sets utilizing this question, that is, financial satisfaction scores in the United Kingdom and Germany (see van Praag and Ferrer-i-Carbonell, 2004, chapter 3). However, the low score of Financial Satisfaction in Albania compares very well to the level of subjective welfare reported in the Albanian LSMS data set of the World Bank (2003).

Our data set also provides information on the sector in which individuals work. This is used to distinguish between individuals working in the formal and informal sectors. Respondents were asked to report their working sector from a list of seven categories (e.g., public sector, private sector (with and without labor contract), self-employment). This information was combined with other available information on reported tax payments (e.g., (non)payment of personal income tax or small business tax). In the sample, 24.6% of the respondents work in the informal sector.¹³ Individuals with more than one job (this is 13% of the sample) are classified as working in the formal sector if at least one of their jobs is in this sector.¹⁴ In addition, the data contain information on individuals' socio-economic and demographic characteristics (e.g., age, gender, and education), household monthly net income, taxes, and other information relevant for a transition country like Albania (e.g., the number of family members living abroad who support the family financially). Finally, the data provide information on individual attitudes to various statements related to paying taxes. Two of these attitudinal questions are used to study the importance of tax morale in explaining the relationship between working in the (in)formal sector and subjective welfare (cf. section 2.3). In a study of tax evasion, Gërzhani (2004a)

¹³ Note that there are no other comparable data sources that measure the underground economy in Albania through informal employment.

¹⁴ This is because by having at least one job in the formal sector, they have the right to social benefits. The regression analysis (below) corrects, nevertheless, for having more than one job by including a dummy variable ("moonlighting"), which takes value 1 if an individual has more than one job and 0 otherwise. Note that classifying these individuals as being in the informal sector produces qualitatively very similar results to the ones presented here.

uses these and other questions as a measure of tax morale. For the descriptive statistics of the variables used in the analysis, see table A in the Appendix.

3. Results

The presentation of the results is split in three parts. First, financial satisfaction is explained by whether or not an individual works in the informal sector, by the household monthly net income, and by a large set of socio-economic and demographic variables (cf. Equation (1)). Second, the analysis proceeds by distinguishing between various groups of individuals based on their tax morale (cf. Equation (2)). Finally, the individual financial satisfaction related to working in the informal sector is evaluated in terms of income.

3.1. Financial satisfaction and the (in)formal sector

Table 1 presents the estimation results for equation (1) in columns 2 and 3. These are to a large extent consistent with the existing literature on countries in transition (see Ravallion and Lokshin, 2002; and van Praag and Ferrer-i-Carbonell, 2004). On the one hand, the explanatory variables “male”, “married”, “higher education”, and “net family income” have a positive coefficient, although “male” non-significantly so. On the other hand, the coefficients for “having children” and “family size” show a negative sign, although the last coefficient is non-significant.

Albania has its own particularities, however, which relate to its transitory phase of development. They involve the following: having (and being financially supported by) family members living abroad has a positive coefficient; having lived in a rural area before transition also affects financial satisfaction positively (this may capture a comparison effect with the past); and having more than one job also has a positive coefficient (although only significant at 10%).

Finally, the empirical analysis shows that the coefficient for working in the informal sector is negative but not statistically significant. Below we show that this non-significant coefficient is a weighted average across two groups of individuals for whom working in the informal sector has a different impact on their financial satisfaction. By correcting for individuals’ tax morale, the effect of working in the informal sector on financial satisfaction will become statistically strong.

3.2. Financial satisfaction and tax morale

The fourth and fifth columns of table 1 present the estimation results for equation (2).¹⁵ The analysis shows that for individuals with a high private tax morale, working in the informal sector correlates negatively with financial satisfaction. The total coefficient for these individuals is $-0.132 (=0.528-0.661)$. These two coefficients are both statistically significant at about 6% and 2%, respectively. For those individuals with a low private tax morale, the coefficient between being in the informal sector and financial satisfaction is positive (0.528). This group represents a minority (10% of the sample). The test of joint significance of these coefficients (or any combination of them) gives a χ^2 always larger than 5, indicating statistical significance.

These results imply that Model 1 was unable to distinguish between two types of individuals whose effect of working in the informal sector on their financial satisfaction is very strong and distinct. In the regression analysis, individuals working in the formal sector are the reference group. Thus, *ceteris paribus*, the financial satisfaction from working in the formal sector is lower than that of working in the informal sector in case of a low private tax morale. The effect of the dummy variable indicating a high private tax morale is insignificant and very small. Also the interaction term between working in the informal sector and a high public tax morale is not significant and very small. This means that the effect of working in the informal sector on financial satisfaction does not seem to depend on the individual public tax morale. The dummy variable reflecting individual high public tax morale is positively correlated with financial satisfaction, although only significant at the 10% level. These results imply that the effect of public tax morale on financial satisfaction is positive for all individuals, regardless of whether they work in the formal or informal sector. For individuals working in the formal sector, the economic burden of paying taxes may (as argued above) be compensated by the ‘warm glow’ effect of contributing to a public good. For individuals working in the informal sector, and thus not paying taxes, the positive coefficient may result from a free riding effect.

¹⁵ The coefficients of all variables included in both models are almost identical.

Table 1: Financial Satisfaction Albania, Ordered Probit

	Model 1 (Equation (1))		Model 2 (Equation (2))		Model 3	
	Coeff.	z	Coeff.	z	Coeff.	z
Male	0.114	1.370	0.129	1.550	0.125	1.50
Ln(Age)	-0.113	-0.640	-0.111	-0.630	-0.116	-0.66
Individual is married	0.518	3.110	0.526	3.160	0.517	3.11
Individual has children	-0.499	-3.550	-0.501	-3.560	-0.498	-3.54
Ln(Family size)	-0.157	-1.300	-0.160	-1.330	-0.155	-1.29
Individual has higher education	0.245	3.330	0.232	3.120	0.235	3.17
Migration from North or South to Tirana	-0.040	-0.500	-0.048	-0.590	-0.044	-0.54
Migration from rural to Tirana	0.219	1.940	0.187	1.640	0.188	1.65
Working in the Informal sector (I)	-0.068	-0.810	0.528	1.890	-0.039	-0.46
Informal * High 'private' tax morale (I*HPrTm)			-0.661	-2.420		
High 'private' tax morale (HPrTm)			-0.032	-0.230	-0.203	-1.70
Informal * High 'public' tax morale (I* HPbTm)			0.035	0.180		
High 'public' tax morale (HPbTm)			0.194	1.640	0.217	2.30
Moonlighting: having more than one job	0.170	1.670	0.185	1.820	0.183	1.80
Ln(Number of family members working)	0.116	1.170	0.125	1.260	0.121	1.22
Ln(Number of (family) emigrants)	0.362	2.200	0.366	2.210	0.342	2.07
Ln(Net family income)	0.597	12.910	0.597	12.850	0.597	12.87
Intercept term 1 (μ_1)	4.363		4.494		4.348	
Intercept term 2 (μ_2)	4.909		5.043		4.893	
Intercept term 3 (μ_3)	5.364		5.500		5.348	
Intercept term 4 (μ_4)	5.864		6.003		5.850	
Intercept term 5 (μ_5)	6.305		6.446		6.294	
Intercept term 6 (μ_6)	6.846		6.992		6.838	
Intercept term 7 (μ_7)	7.218		7.368		7.213	
Intercept term 8 (μ_8)	7.623		7.780		7.622	
Intercept term 9 (μ_9)	8.125		8.289		8.128	
Intercept term 10 (μ_{10})	8.440		8.609		8.446	
Number of observations	908		908		908	
Pseudo R ²	0.0605		0.0637		0.0622	
Log. Likelihood	-1862		-1856		-1859	

Model (3) shows that including the two tax morale variables without the interaction term generates a similar coefficient for working in the informal sector as does model (1). This means that the statistically significant effect of working in the informal sector found in model (2) is only due to the interaction term between tax morale and working in the informal sector.

In order to provide a broader understanding of the results presented in Table 1, we calculated the marginal effects for all variables used in the regression. Table 2 shows the

marginal effects for the lowest, highest, and the two financial satisfaction levels around the sample average.¹⁶

Table 2: Marginal effects on Financial Satisfaction, Model (2)

	<i>Satisf.=0</i>	<i>Satisf.= 3</i>	<i>Satisf.=4</i>	<i>Satisf.=10</i>
Male	-0.018	-0.004	0.006	0.001
Ln(Age)	0.015	0.004	-0.005	-0.001
Individual is married	-0.096	0.000	0.037	0.004
Individual has children	0.052	0.035	-0.006	-0.010
Ln(Family size)	0.022	0.006	-0.007	-0.002
Individual has higher education	-0.031	-0.010	0.010	0.003
Migration from North or South to Tirana	0.007	0.002	-0.002	-0.001
Migration from rural to Tirana	-0.023	-0.010	0.006	0.003
Working in the Informal sector	-0.059	-0.033	0.011	0.010
Informal * High 'private' tax morale	0.117	0.004	-0.044	-0.005
High 'private' tax morale	0.004	0.001	-0.001	0.000
Informal * High 'public' tax morale	-0.005	-0.001	0.001	0.000
High 'public' tax morale	-0.029	-0.006	0.010	0.002
Moonlighting: having more than one job	-0.023	-0.010	0.006	0.003
Ln(Number of family members working)	-0.017	-0.005	0.005	0.002
Ln(Number of (family) emigrants)	-0.050	-0.015	0.016	0.004
Ln(Net family income)	-0.081	-0.024	0.026	0.007

Let us look at the marginal effects of reporting a financial satisfaction equal 4, which is just above the sample average. The marginal effect for working in the informal sector and having a high tax morale is about -0.033 (=0.011-0.044), which is (with the exception of being married) the strongest effect. Thus, an individual with high tax morale who enters the informal sector has a 3.3% less chance to report a financial satisfaction of 4.

In summary, the results show that the effect of working in the (in)formal sector on subjective welfare (after controlling for income and other variables), can be completely attributed to the individual private tax morale. The higher (lower) the private tax morale when working in the informal sector, the lower (higher) the financial satisfaction.

3.3. Evaluating the importance of working in the informal sector

The importance of the correlation between financial satisfaction and working in the informal sector (for individuals with high private tax morale) can be evaluated in terms of income by calculating the compensating income and the income equivalent of working in

¹⁶ The marginal effects are calculated at the sample mean for continuous variables and at the change from 0 to 1 for dummy variables.

the formal sector (for similar approaches see Blanchflower and Oswald, 2004; and Ferrer-i-Carbonell and van Praag, 2002).

From equation (2) we can derive the income necessary to compensate an individual with a high tax morale for the loss of satisfaction due to working in the informal sector:

$$\Delta \ln y = \frac{\gamma + \varphi}{\beta} - 1 \quad \Rightarrow \quad \Delta y = \exp\left(\frac{\gamma + \varphi}{\beta}\right) - 1$$

The income necessary to compensate an individual with a low tax morale for the loss of satisfaction due to working in the informal sector equals:

$$\Delta \ln y = \frac{\gamma}{\beta} - 1 \quad \Rightarrow \quad \Delta y = \exp\left(\frac{\gamma}{\beta}\right) - 1$$

The equivalent loss is the reciprocal of the compensating income.

Combining the estimated coefficients with these relationships indicates that an individual with a high private tax morale moving from the formal to the informal sector would experience a satisfaction loss equivalent to 16.1% of his or her income. The (compensating) income necessary to bring this individual back to the initial level of satisfaction is a 19.2% income increase. These results show the relevance for financial satisfaction of moving from the formal to the informal sector.

4. Conclusions

This paper studies the relationship between working in the formal or informal sector and subjective welfare in a country in transition. Distinguishing between two types of individuals based on their attitudes towards taxes, the results show that, for most individuals, working in the informal sector has negative effects on their subjective welfare. Remarkably, some individuals who work in the informal sector are financially even more satisfied than their counterparts in the formal sector. The differentiating characteristic of these individuals is that they demonstrate a low private tax morale, *i.e.*, they disagree that not paying taxes today has personal financial repercussions in the future.

Comparative studies of individuals working in the formal and informal sectors have mainly focused on the income differential between the two sectors. Even when other aspects like ease of entry and social exclusion are theoretically recognized, it has remained an open question what the effect of working in the formal or informal sector is on an

individual's welfare.¹⁷ This paper contributes to the literature by providing an empirical answer to this question.

¹⁷ For example, in their study on Nicaragua, Pisani and Pagán (2003) presume that the willingness to queue for a formal sector job might be related to pecuniary and nonpecuniary benefits associated with the formal sector jobs that matter to informal sector workers.

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Appendix

Table A: Summary statistics

<i>Variable</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
Male	0.754	0.431	0	1
Ln(Age)	3.743	0.219	2.833	4.304
Individual is married	0.910	0.287	0	1
Individual has children	0.866	0.341	0	1
Ln(Family size)	1.426	0.332	0	2.485
Individual has higher education	0.454	0.498	0	1
Migration from North or South to Tirana	0.334	0.472	0	1
Migration from rural to Tirana	0.141	0.348	0	1
Working in the Informal sector	0.246	0.431	0	1
High 'private' tax morale	0.904	0.294	0	1
High 'public' tax morale	0.823	0.382	0	1
Moonlighting: having more than one job	0.134	0.341	0	1
Ln(Number of family members working)	0.180	0.368	0	2.197
Ln(Number of (family) emigrants)	0.045	0.211	0	1.792
Ln(Net family income)	10.333	0.828	0	13.122
No. of observations		908		