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Mobility, poverty and well-being among the informally employed in Bosnia and Herzegovina

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Abstract

We analyse informal sector employment in Bosnia and Herzegovina (BH), using panel data from the living standards measurement studies. We derive four main conclusions. First, there is significant labour market mobility in BH. Second, those in informal jobs are much more likely to suffer from poverty than formally employed people are. Third, earnings inequality is more pronounced in the informal sector than elsewhere. Fourth, the informally employed report lower levels of life satisfaction compared to most other labour market states. We conclude that, while the informal sector helps people cope, the formal sector provides better prospects for prosperity and well-being.

JEL classification : E24; J21; P2

Keywords: Informal sector; Poverty; Mobility; Happiness; Bosnia and Herzegovina

1. Introduction

Economic activity in Bosnia and Herzegovina (BH) has risen steadily since the end of the war in late-1995. According to IMF estimates, real GDP trebled over the period 1996–2004, with most of this growth concentrated in the early post-war years.[1] But there is still great uncertainty about the current size of the Bosnian economy and about basic macroeconomic aggregates such as GDP growth, unemployment and the balance of payments. The main reason for this uncertainty is that official statistics fail to take account of informal activities. There is general

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[1] See IMF (2005a).

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agreement that informal activities are widespread throughout the country, as they are in many other transition countries. Yet there has been very limited analysis to date of this phenomenon in BH. This makes it more difficult to come up with concrete suggestions to improve the functioning of the labour market and bring informal activities into the formal sector.

This paper attempts to enrich our understanding of the informal sector in BH through a detailed analysis of panel data from several waves of the Living Standard Measurement Study (LSMS) household surveys between 2001 and 2004. We do *not* try to estimate the size of informal activities relative to ''official'' GDP. (Some previous attempts by other researchers to do this are discussed below.) Instead, we use our individual-level data to show two main things. First, we analyse the degree of flexibility in the labour market and demonstrate that there is substantial movement between formal and informal jobs. And second, we show the superiority of formal over informal activities for reducing poverty and inequality and enhancing life satisfaction. These issues highlight the importance of reducing barriers to doing business, a topic that we return to in the conclusion.

The structure of the paper is as follows. Section 2 provides relevant background information, both on the structure of the BH economy inherited from socialism and the war years and on the concept of ''informal'' activity. It also summarises briefly the state of existing knowledge about informal or non-observed activities in BH, highlighting the wide range of existing estimates and the difficulties that previous researchers have had in coming up with concrete results.

Section 3 presents summary statistics from the LSMS. Several points are noted. First, the size of the informal sector as a percentage of total employment appears to have fallen between 2001 and 2004, although this result is sensitive to the definition of ''informal'' employment. Second, both the employment and the unemployment rate have risen over this period, on account of a near 10% point increase in the labour force participation rate. Third, a breakdown of informal employment shows a concentration in agricultural activity, and a corresponding majority in non-wage employment, compared to about 8% of the formally employed. Fourth, monthly earnings in the formal sector are on average about 30% higher than those in the informal sector.

Section 4 contains the main analytical results. We show first that the degree of movement, even in 1 year, from one category of labour force to another is surprisingly high when compared to a selection of other transition countries. Those who make the move from informal to formal jobs typically gain significantly in terms of earnings increase, with average monthly earnings for this group rising by 26% (in nominal terms) over a 3-year period.[2] We then establish that informal employment helps to reduce poverty but by much less than formal employment does; more than two-thirds of workers who moved out of poverty between 2001 and 2004 remained or became employed in the formal sector. Informal workers were less likely to escape poverty over this period relative to formal workers (controlling for other characteristics) and saw lower consumption increases than formal workers. Finally, we show that the informal sector is associated with both higher inequality and (based on evidence from the most recent wave of the survey in 2004) lower life satisfaction relative to other employment categories.

Section 5 concludes the paper with some policy implications. There are several conclusions that we draw from our work. First, it would be useful to use these data and others to try to derive at least rough estimates of the ''true'' size of the economy. Otherwise, policy-makers will continue to operate in the dark and may propose misguided policies based on faulty data. Second, notwithstanding the considerable mobility in the labour force, a large number of highly educated

[2] Inflation in BH has been in low single-digit levels since 2001 so there is little difference between large nominal and real changes over this period.

workers are seemingly trapped in the informal sector, with little prospect of leaving. This highlights the need for targeted programmes of skills enhancement for vulnerable groups, so that they have a better chance of escaping from poverty. Third, and perhaps most importantly, the size of the informal sector is at best decreasing only modestly (and increasing if a more restrictive definition of informality is applied). This fact points to the need for further improvements in the business environment, including a simplified registration procedure for new businesses and a sustained attack on corruption.

2. The informal economy in BH: what do we know?

In order to begin to understand how labour markets work in BH, and why a large informal economy has arisen, it is important to keep in mind the historical legacy, both from the turbulent recent past and from the pre-war years, when BH was part of former Socialist Federal Republic of Yugoslavia (SFRY). Under Tito, who ruled the SFRY from the end of World War II until his death in 1980, BH was a centre of military production and a place where many heavy industries were located. The result was a rather distorted economy that, even in the absence of conflict, would have been ill-equipped to cope with the twin challenges of independence and transition. The outbreak of the war in spring 1992 and the subsequent conflict over the following three-and-a-half years left the economy in ruins and necessitated a massive reconstruction effort following the signing of the Dayton Peace Accord in late-1995.

Since 1996, the Bosnian economy has been undergoing a transition to a market economy. A relatively robust recovery has taken place. Real GDP is now estimated at 70% of the 1989 level, inflation has been at low single-digit levels for several years, the currency board is functioning smoothly and government spending has been brought under much greater control than before.[3] However, the inheritance of an industrialised and militarised economy, allied to the difficulties of post-war adjustment in a heavily aid-dependent environment, meant that by 2001, when the period analysed in this paper began, progress towards an economy based on market principles had been rather hesitant. As a result, the pace of privatisation, especially of large enterprises, was extremely slow. Even now, BH lags behind the rest of the region in terms of privatisation, and new opportunities for private sector activity are still limited.[4] Both agriculture and industry have declined as a share of GDP in the post-war period, with a heavy deindustrialisation occurring in the RS (see World Bank, 2005). Not surprisingly, many individuals have coped by engaging in informal activities.

Before proceeding, it is important to establish what we mean by ''informal'' activities. Many overlapping terms are used in the literature: ''shadow'', ''grey'', ''black'', ''non-observed activities'', to name the most common. The broadest definition would incorporate both legal activities (if they were recorded) and illegal activities such as smuggling, drug production, prostitution and others. In this paper we focus on legal activities only.[5]

Very few papers have attempted to estimate the size of the informal economy in BH. The country is included in two recent multi-country studies: Schneider (2004) and Christie and

[3] See EBRD (2006) for a recent assessment of BH's macroeconomic developments and progress in structural reform.

[4] According to the latest EBRD transition indicators, on a scale of 1–4+ BH scores a '3−' for large-scale privatisation, below all other countries in south-eastern Europe except Serbia (also at 3−), see EBRD (2006).

[5] A useful guide to the measurement of the non-observed or informal economy is in OECD (2002). See also Williams (2005), a report commissioned by the Small Business Council in the United Kingdom that gives an overview of the literature.

Holzner (2004). Schneider's paper is the latest in a series by the author that provide estimates of (what the author terms) the ''shadow'' economy (relative to recorded GDP) for countries from around the world. He uses a latent estimation, or factor analysis, approach.[6] The size of the shadow economy in BH in 2002/2003 is estimated at 36.7% of measured GDP, up from 34.1% in 1999/2000 and 35.4% in 2001/2002. Interestingly, the unweighted average across 25 transition countries in 2002/2003 is 40.1%, therefore putting BH a little below the average size in this group.

Christie and Holzner (2004) analyse a range of south-eastern European (SEE) and central eastern European and Baltic (CEB) countries. They take a different approach from that of Schneider (2004) and focus instead on household tax compliance. The principle underlying their approach is straightforward: they derive data on ''true'' household income (from final consumption data) and statutory tax rates and compare actual tax revenue with what it should be if everyone paid the right amount of tax. The gap gives an indication of the size of the shadow economy. Rather surprisingly, the estimate for Bosnia and Herzegovina, at 21% of GDP, is at the low end of the scale for SEE countries and comparable instead to those in CEB. The authors provide several cautionary notes relating both to the preliminary nature of the results and the poor quality of data in BH, in particular the lack of basic national accounts, all of which necessitate the adoption of some crude and questionable assumptions.

Two recent papers that focus exclusively on BH are Dell'Anno and Piirsild (2004) and IMF (2005b). Dell'Anno and Piirisild are concerned with providing a broad measure of non-observed activity, as well as a breakdown into three categories: activities not recorded for economic reasons, statistical reasons and illegal activities. For 2001, a modified version of the OECD's methodology is employed. Total non-observed activity is estimated at 57.7% of official GDP, while that part due to the shadow economy accounts for 34.2%, very close to Schneider's (2004) estimate (noted above). For 2002 and 2003 the shadow economy is estimated, using a factor analysis model similar to that of Schneider, at 35.1% and 33.2%, respectively.

The IMF (2005b) adopt another methodology. Their procedure is as follows: first, they gather data for as many countries as possible (193 in this case) on a range of economic and other variables, and calculate the simple correlation of each variable with nominal GDP. Those variables that have correlations above a certain threshold are then included in a broad regression equation, where the dependent variable is GDP per capita (log, in US dollars). This allows one to construct a ''predicted'' value of GDP for each country. The estimate of predicted GDP for BH is compared to official GDP and the difference is attributed to the shadow economy. Various results are presented. The range of estimates is typically in the region of 30–50% of official GDP. Some estimations show the shadow economy to be increasing over the period 1999–2002, while others (based on different samples of countries) show it to be falling.

The above research on informal activity has focused on calibrating the size of the unmeasured sector relative to its measured counterpart. The analysis of informal activity at the level of the labour force participant has been even more limited. However, some researchers at the World Bank have started to exploit the LSMS for this purpose, and we build on this work in this paper. The World Bank (2005) found that informal employment accounted for 37% of total employment in 2001 and 40% in 2002 using the LSMS data (see also World Bank, 2002). A recent paper by Tiongson and Yemtsov (2005) shows that between 2001 and 2004 the share of informal

[6] As the author acknowledges, one drawback of this approach is that it requires the assumption of a "benchmark" in one country, against which other economies are measured.

employment in total employment increased from 37% to 42%. As shown below, the conclusion that informal activities are rising in BH is sensitive to the definition of informal employment.

In summary, our knowledge of the informal economy in BH from existing studies is extremely limited. Most of the work to date has concentrated on estimating the size of the informal or shadow economy, but even here there is little agreement; it could be anywhere from 20% to 50% of official GDP.[7] There is also no consensus on whether the size is increasing or decreasing in recent years. More fundamentally, we lack an understanding of who is a typical informal sector worker, what sectors and industries are they concentrated in, and how informal activities interact with poverty and inequality. These topics are therefore the focus of the main body of the paper in Sections 3 and 4 below.

3. Data and labour market trends

We begin by presenting some summary statistics from two waves of the LSMS conducted in BH in Autumn 2001 and Winter 2004. In line with standard LSMS methodology, the BH surveys collected information from households and individuals on their income and consumption level, economic activities, and other characteristics. We use the panel aspect of the LSMS data, which provide matched records of the two waves in 2001 and 2004, to follow the same individuals through time and examine labour force flows across different types and sectors of employment.

The original sample in 2001 consisted of 5400 households corresponding to around 9400 individuals. Of these, approximately 3000 households (about 7300 individuals) have been surveyed every year. Each wave collected generally the same set of information using similar modules. However, information on household consumption is available in the 2001 and 2004 waves only. Therefore, the analysis below focuses mainly on these two waves. The data are representative at the national level, for each of the two Entities, and by type of municipality (for more details on sampling methodology, see World Bank, 2003).

We adopt the operational definition of informal employment developed in Young-Ro et al. (2003). The arguments for this conceptual definition are set out in detail in Bernabè (2002).[8] The definition is the sum of the following:

- *Informal employees*: wage employees with no payment of social security contributions (health and pension insurance).
- *Informal Self-employed*: Own-account workers and employers in a family business outside agriculture with no payment of social security contributions.
- *Farmers on own farm.*
- *Unpaid family workers.*

In addition to these categories, the population of working age also includes: (a) formal wage employees; (b) formal self-employed; (c) unemployed; and (d) inactive.

[7] Recently, the Central Bank of Bosnia and Herzegovina (CBBH) has begun to publish two estimates of GDP, one of which includes the non-observed economy. For 2005, GDP including non-observed activities is estimated at KM 19.32 billion (€9.88 billion), compared to KM 15.75 billion (€8.06 billion) without. See the CBBH Bulletin No. 3 (2006), page 12.

[8] Two important differences with respect to the work of Young-Ro et al. (2003) are that we exclude agricultural employment from the formal sector. Farmers on their own farm are considered as informal workers. In addition, we capture only informal employment in the main job, although many individuals engage in informal economic activities in their secondary jobs.

Table 1
Main labour market indicators, 2001–2004

	2001	2004
Bosnia and Herzegovina		
Participation rate	48.3	57.8
Employment rate	40.6	44.9
Unemployment rate	15.9	22.3
Informal sector (in percent of total employment)	47.7	42.7
Federation		
Participation rate	42.5	54.4
Employment rate	35.3	42.9
Unemployment rate	16.8	21.1
Informal sector (in percent of total employment)	39.0	36.9
Republika Srpska		
Participation rate	55.4	62.3
Employment rate	47.0	47.5
Unemployment rate	15.1	23.7
Informal sector (in percent of total employment)	55.7	49.5

Note: Panel observations only. Participation and employment rates expressed in percent of the working age population (15–64). Unemployment rate in percent of the labour force. *Source*: LSMS 2001 and 2004.

Table 1 contains a first look at the panel data, both at the country-wide level and broken down by the two entities—the Federation of Bosnia–Herzegovina (''the Federation'') and the Republika Srpska (RS). Perhaps the most remarkable feature of Table 1 is the dramatic increase in the labour force participation rate between 2001 and 2004, by nearly 10 percentage points. The increase is particularly marked in the Federation, although the overall participation rate there still lags behind the RS. Both the employment and the unemployment rates have risen, with the latter around 22% of the labour force in 2004.[9]

The table also shows how significant the informal sector is in our panel. Nearly 43% of total employment in the sample was in the informal sector in 2004. In the RS, the figure is almost half of total employment. However, this percentage has fallen since 2001 by about 5% points. But this conclusion is sensitive to the definition of informal employment adopted. As noted earlier, the analysis of Tiongson and Yemtsov (2005) showed that the share of informal employment in total employment grew over 2001–2004, in contrast to our findings. The reason lies in the definition of informal employment: Tiongson and Yemtsov treat all workers in the public sector as formal workers, whereas we apply the same criteria (described above) in distinguishing formal from informal work both in the public and private sector. That is, a public sector worker who does not pay social security contributions is defined in our paper as being in the informal sector. However, it is important to note that the share of private sector informal employment in total employment *increased* by 3.6 percentage points over 2001–2004.

Table 2 contains a more detailed breakdown of the two categories—formal and informal. Several points of interest arise. First, 16% of informal workers are young (aged 15–25), compared to only 11% of formal workers. Second, less than half of informal workers are in wage-

[9] According to figures from the Economic Policy Research Unit (EPPU) of the BH Council of Ministers, the official unemployment rate in the first quarter of 2005 was nearly 44% but, as the Unit acknowledges, this is based on registered data and many of those who register as unemployed are in fact working, usually in the informal sector.

Table 2
Characteristics of formal and informal employment, 2004 (in %) (population between 15 and 64)

	Informal employment	Formal employment	Total Employment
All	100.0	100.0	100.0
Gender			
Male	63.7	64.5	64.2
Female	36.3	35.5	35.8
Age categories			
15–25	16.0	11.0	13.1
26–45	46.8	52.1	49.8
46–64	37.2	36.9	37.1
Employment type			
Wage-employment	47.9	91.9	73.2
Self-employment	9.9	8.1	8.9
Farmers	21.0	–	8.9
Unpaid family workers	21.2	–	9.0
Sector of economic activity			
Agriculture	43.0	2.8	19.9
Industry	30.2	37.2	34.2
Services	26.8	60.0	45.9
Weekly hours worked[a]	42.5	44.2	43.7
Monthly net main job earnings (in KM)[b]	391.4	505.2	473.9
Hourly net main job earnings	2.4	2.8	2.7
Coefficient of variation for hourly net main job earnings	0.756	0.699	0.726

Source: LSMS 2004.
[a] For those who reported positive hours worked.
[b] For those who reported positive monthly wages worked. KM 1.96 = €1.

employment, whereas about 92% of formal employees are wage earners. This reflects the importance of the agriculture sector as the main source of employment for informal activities, whereas formal employment is concentrated in the services sector. Third, while there is little difference in weekly hours worked (with those in formal employment working slightly longer), the formal sector has a substantial earnings premium – about 30% – compared to the informal sector. Earnings in the latter also tend to be more dispersed, as measured by the coefficient of variation of hourly earnings.

4. Results

Having had an initial look at the data, this section now turns to a detailed analysis of some of the questions raised in the introduction. Specifically, we focus on four issues: flexibility of movement among formal and informal sectors; the role of informal employment in reducing poverty and increasing living standards; the importance of inequality in the informal sector; and the link between informality and subjective assessments of well-being.

4.1. Mobility

How much movement is there among labour market states in BH? Table 3 uses the panel observations from the 2001 and 2004 waves to answer this question, first by grouping formal and

Table 3
Transition probabilities across labour force states, 2001–2004 (%, population between 15 and 64)

2001	2004			
	Employed	Unemployed	Inactive	Total
Employed	78.0	8.1	13.9	100
Unemployed	42.9	27.7	29.4	100
Inactive	20.1	14.0	66.0	100
Total	45.1	12.7	42.2	100

Note: Panel observations only. *Source*: LSMS 2001 and 2004.

informal employment into one category. The table shows that most of those employed in 2001 – 78% – remained employed in 2004, with 8% moving into unemployment and 14% out of the labour force. The most interesting point from Table 3 is that almost 43% of those who were unemployed in 2001 were in employment 3 years later. This somewhat contradicts the common view of the Bosnian labour market as sclerotic and lacking in job opportunities for the unemployed.

Table 4 illustrates this point further by comparing labour market mobility across a range of (mostly transition) countries. In order to make a valid comparison, the table compares mobility within 1 year, and therefore, in the Bosnian case, we use the 2002 wave to look at movements between 2001 and 2002. The first column compares values of the ''Shorrocks index'', which takes values from 0 (no-one changes labour market status in the period) to $n/(n-1)$ where n is the number of labour market states (see note to table for a more detailed explanation). According to this measure, the degree of mobility is quite high relative to comparator transition countries, similar to that observed in Serbia and not far from that in the US.

The informal sector has played a major role in facilitating outflows from unemployment to employment. Table 5 shows that over half of those previously unemployed individuals who became employed in 2004 found jobs in the informal sector. In addition, substantial outflows

Table 4
Mobility across labour force states: BH and selected countries

Country	Period	Shorrocks index (×100)	P^{eu} (×100)	P^{ue} (×100)	P^{ui} (×100)	P^{ie} (×100)
Bosnia and Herzegovina	2001–2002	55.7	6.8	34.4	31.7	14.2
Serbia	2002–2003	55.4	3.3	47.7	26.9	15.1
Lithuania	2000–2001	31.0	5.7	24.0	15.6	5.2
Bulgaria	2000–2001	43.6	9.3	22.1	40.5	4.4
Poland	1997–1998	31.3	2.2	33.3	16.4	4.3
Czech Republic	1998Q1–Q4	28.6	2.3	36.6	9.9	3.6
Slovak Republic	1999Q1–Q4	17.6	–	–	–	–
Russia	1995–1996	38.5	5.6	39.5	14.5	7.6
USA	1992–1993	61.6	–	–	–	–

Note: The Shorrocks index is proportional to the fraction of individuals who changed their labour market status within a given period. It is calculated as $S = (n - \mathrm{tr}(P))/(n-1)$, where n is the number of states and $\mathrm{tr}(P)$ is the trace of transition matrix P. S takes the values in the interval $[0, n/n-1]$; $S = 0$ when nobody changed their status and $S = n/n - 1$ when everybody changed their status. Selected transition probabilities (from employment to unemployment P^{eu}, from unemployment to employment P^{ue}, from unemployment to inactivity P^{ui}, and from inactivity to employment P^{ie}), multiplied by 100, are expressed as percentage of population in the second year. Sources: Bosnia and Herzegovina, LSMS 2001 and 2002; Serbia: Krstić (2004); other countries: Rutkowski (2003a,b).

Table 5
Transition probabilities across labour force states, 2001–2004 (%, population between 15 and 64)

2001	2004				
	Formal	Informal	Unemployed	Inactive	Total
Formal	76.1	9.7	5.0	9.2	100
Informal	23.0	46.3	11.6	19.1	100
Unemployed	19.5	23.3	27.7	29.4	100
Inactive	6.9	13.2	14.0	66.0	100
Total	25.6	19.5	12.7	42.2	100

Note: Panel observations only. *Source*: LSMS 2001 and 2004.

from inactivity to informal jobs were also observed, with over two-thirds of previously inactive individuals who became employed 3 years later being absorbed by the informal sector.

It is also the informal sector where the majority of job losses occurred. Almost two-thirds of those who lost or left a job between two surveys had a job in the informal sector in 2001. This confirms that the informal sector is a significant source of labour mobility in BH, providing more job opportunities for the unemployed and inactive but also having more job destructions than the formal sector (see also World Bank, 2005). The pattern is similar to that observed recently in Serbia (see World Bank, 2004).

Tables 6 and 7 shed further light on these labour market flows by decomposing them into sectoral flows and distinguishing between wage- and self-employment. Table 6 shows that most informal workers who moved into formal employment remained in the same sector of economic activity. For example, of those people who were informally employed in the service sector in 2001 and became formally employed by 2004, some 90% remained in the service sector. A similar pattern was observed for workers in industry. In the agriculture sector, nearly 20% moved out to industry or services. Movements out of agriculture were into both formal and informal employment (8% and 10%, respectively).

Table 7 shows that almost all informal employees who became formal workers remained in the same employment type, i.e., wage employment. However, this is not the case with informally self-employed. Half of the informally self-employed that became formal workers remained in self-employment, while the other half became formal wage employed. Although agricultural workers appeared to be the least mobile compared to workers in other sectors, significant movements occurred within agriculture between farmers and unpaid family workers. One

Table 6
Transition probabilities by sectors and employment type, 2001–2004 (%, population between 15 and 64)

2001	2004					
	Industry formal	Services formal	Industry informal	Services informal	Agriculture (informal)	Total
Industry formal	74.1	9.1	11.1	2.9	2.9	100
Services formal	10.3	81.2	1.6	4.5	2.3	100
Industry informal	25.9	6.9	50.4	5.7	11.1	100
Services informal	5.2	50.4	7.6	31.1	5.7	100
Agriculture (informal)	4.5	3.9	5.2	4.5	81.9	100
Total	25.2	38.3	12.8	7.8	15.9	100

Note: Panel observations only. *Source*: LSMS 2001 and 2004.

Table 7
Transition probabilities by employment type and labour force status, 2001–2004 (%, population between 15 and 64)

2001	2004							
	Formal employees	Formal self-employed	Informal employees	Informal self-employed	Farmers	Unpaid family workers	Unemployed	Inactive
Formal employees	74.8	1.7	6.7	1.1	0.9	0.4	4.9	9.5
Formal self-employed	13.3	57.8	2.4	12.2	2.1	0.7	5.6	6.1
Informal employees	29.7	1.3	31.3	2.5	4.0	2.2	17.1	11.9
Informal self-employed	8.7	9.1	19.4	21.7	6.6	0.0	6.5	28.0
Farmers	3.4	0.0	1.6	2.4	35.8	20.9	1.0	35.0
Unpaid family workers	8.5	1.7	5.1	2.8	15.9	35.6	1.1	29.3
Unemployed	17.3	2.3	10.4	4.8	5.7	2.4	27.7	29.4
Inactive	6.1	0.8	5.2	0.7	3.2	4.1	14.0	66.0
Total	23.5	2.1	9.1	1.9	4.3	4.2	12.7	42.2

Note: Panel observations only. *Source*: LSMS 2001 and 2004.

explanation is that, over this period, some members of this category changed the way they described their activities, even though they remained largely unchanged. Most of the unemployed and inactive who moved into formal or informal employment became employees.

The most interesting aspect of the mobility story so far concerns those who moved from informal to formal employment between 2001 and 2004. It would be useful to know something about the typical individual and household characteristics associated with those who make this move. We examine this question by means of a simple probit model, using the sample of individuals who were employed both in 2001 and in 2004. The dependent variable takes the value one if an individual was in informal employment in 2001 and in formal employment in 2004 and zero if the individual remained in informal employment. The explanatory variables include demographic and educational characteristics of the worker in the first period (gender, age and age squared, marital status, completed level of education, resident status and health status), characteristics of the household (size of the household, other household members employment status, consumption quintiles and location) and economic characteristics of the individual, captured by the sector of economic activity and whether the worker remained in the same job. The results are presented in Table 8.

Table 8
Probability of moving from informal to formal employment, panel data 2001 and 2004 (probit)

	Coefficients	Standard errors
Individual characteristics '01		
Female	0.029	(0.054)
Age	0.022	(0.016)
Age^2	−0.0003	(0.000)
Single	*f*	
Married	−0.068	(0.072)
Cohabiting	0.015	(0.145)
Widow/er	−0.002	(0.127)
Divorced/separated	0.022	(0.147)
Permanent resident	*f*	
Displaced resident or refugee	0.151	(0.115)
Temporary resident	−0.073	(0.053)
Has chronic disease	0.015	(0.071)
Education of individual '01		
No education	−0.070	(0.093)
Primary education	−0.037	(0.054)
Secondary education	*f*	
College	0.300	(0.138)**
University	0.588	(0.117)***
Sector of economic activity '01		
Agriculture	−0.219	(0.055)***
Industry	*f*	
Services	0.111	(0.058)*
Remained in the same job	−0.145	(0.055)***
Household characteristics		
Ln household size '01	0.126	(0.078)
Other household members changed employment status	−0.027	(0.055)
First consumption quintile '01	*f*	
Second consumption quintile '01	0.094	(0.080)

Table 8 (*Continued*)

	Coefficients	Standard errors
Third consumption quintile '01	0.128	(0.079)
Fourth consumption quintile '01	0.191	(0.087)**
Fifth consumption quintile '01	0.054	(0.095)
Region 2001		
Capital city	*f*	
Other urban	−0.109	(0.071)
Rural	−0.155	(0.068)**
Republika Srpska	0.001	(0.001)
Observations	616	
Wald χ^2 (27)	132.00	
Pseudo R^2	0.209	

Notes: Dependent variable is the informal employment in 2001 and formal employment in 2004 (dummy). (a) The unit of observation is individual. (b) The dependent variable for the model is whether an individual was in informal employment in 2001 and in formal employment in 2004. (c) *, **, *** denote significance at the 10%, 5% and 1% level using two-tailed tests. (d) *f* denotes base category. (e) Permanent resident refer to those who did not change place of residence during the war; displaced resident and refugees refer to those who changed place of residence, but obtained permanent resident status in the current place of residing; temporary resident refer to other displaced persons or refugees with temporary resident status. The coefficients refer to marginal effects in percentages, computed at the average value of the variables for continuous variables and for a discreet change from 0 to 1 for dummies. *Source*: LSMS 2001, 2004.

Turning first to the demographic characteristics, educational attainment appears to have a significant impact on the probability of moving from informal to formal employment, controlling for other individual and household characteristics. Workers with completed college (in 2001) were 30% more likely to move from informal to formal employment, relative to those with secondary education (the reference category), while the chances of moving to formal employment were 59% higher for those holding university degrees. These results indicate that the highly educated use informal jobs as a waiting strategy until jobs become available in the formal sector. In contrast, in some less developed countries of Africa and Asia, the highly educated use unemployment as a waiting strategy for jobs in the formal sector, generally the public sector (see, for example, Boudarbat, 2005). Other demographic characteristics such as age, gender, marital and resident status have little explanatory power.

The results also show that workers in the service sector were most likely to move from informal to formal employment, and those in agriculture least likely. Those who remained in the same job (in 2004 as in 2001) were less likely to formalize their activity than those who changed jobs, which indicates that formalisation of economic activity mostly occurred by changing jobs rather than by changing the status of the current jobs.

Other results of interest are, first, that workers belonging to the fourth consumption quintile in 2001 saw a higher probability of moving from informal to formal employment compared to the poorest group of workers (first quintile), and second, that workers residing in rural areas faced a lower probability of moving from informal to formal employment than workers residing in the capital cities (16%).

4.2. Earnings and poverty

It is often argued that the informal sector plays a key role in the fight against poverty by providing a safety net for those who otherwise would have little or no income. In this section, we

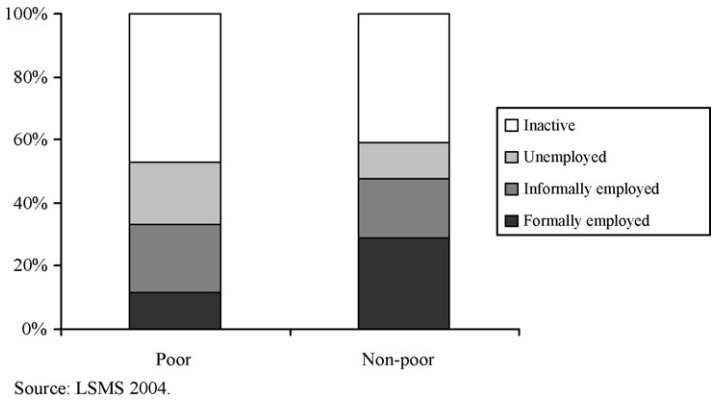

Fig. 1. Poor and non-poor by labour market status, 2004 (population 15–64 years).

examine the concentration of poverty among different groups in the labour force, and the association between labour market transitions and movements out of poverty.[10]

First, we must define what we mean by ''poverty''. We adopt the official (national) consumption aggregate and poverty lines prepared by national statistical agencies in cooperation with the Economic Policy Planning Unit (EPPU) of BH and the World Bank (see Tiongson and Yemtsov, 2005). The consumption aggregate includes food and non-food consumption that covers imputed value of housing, expenditures on utilities, health, education and other types of non-food consumption. A ''poor'' individual is someone whose total yearly consumption per capita was lower than KM 2198 in 2001 and lower than KM 2223 in 2004.[11]

Fig. 1 divides the 2004 sample into poor and non-poor, and shows the proportion of different labour force categories in each sample. The figure shows that about two-thirds of the poor were either inactive or unemployed, suggesting that one of the main causes of poverty is lack of employment. Nearly half of the poor are out of the labour force. Interestingly, however, about 40% of the non-poor are also inactive, highlighting the importance of alternative sources of income for this group such as family support and remittances. Formal employment constitutes a much lower share of the poor than of the non-poor (12 and 29%, respectively), while informal employment represents slightly higher share of the poor than of the non-poor population (22 and 19%, respectively).

Table 9 highlights some of the same points but in a different way: while Fig. 1 showed the labour market status of the poor and non-poor respectively, the table shows the poverty incidence by labour market status. Several interesting points emerge. First, the unemployed are those with the higher poverty risk; their poverty risk is more than twice that of the employed (29% compared to 14%). Second, informal employment is associated with over twice as much poverty risk as formal employment, though with important differences between groups. For example, poverty

[10] This section examines the link between the labour force status of an individual and poverty status, where the latter is measured by household consumption per capita. A referee has pointed out that the labour market outcomes of other individuals in the household will also be important determinants of an individual's level of poverty. Unfortunately, it is not possible to analyse this issue systematically, and this is an important limitation on our analysis. One alternative would be to focus on the labour market status of the household head only, but this would miss an important part of the employed population.

[11] The KM is fixed to the euro under a currency board arrangement at the (approximate) rate of KM 1.96 = EUR 1.

Table 9
Poverty incidence by labour market status, 2004 (population between 15 and 64)

	2004
Employed	14.1
Formal	8.5
Employees	8.8
Self-employed	5.3
Informal	21.5
Employees	25.5
Self-employed	15.5
Farmers	15.4
Unpaid family workers	21.3
Unemployed	29.1
Inactive	21.2
Total	19.0

Source: LSMS 2004.

incidence is 10 percentage points higher for informal employees than for informal self-employed or farmers. This is partly due to age-related differences; about 20% of informal employees are aged between 15 and 25, whereas only 6% of the informal self-employed or farmers are in that age group. Since young workers tend to have lower starting wages than older workers, this helps to explain why they suffer a higher incidence of poverty. Third, the formally self-employed faced the lowest poverty incidence, with only about 5% defined as poor. This suggests that formal self-employment may be an important potential route out of poverty, a point to which we return later in the paper.

Having characterised the ''static'' distribution of poverty in the 2004 wave, we now turn to an analysis of the dynamic link between labour market flows and movements into and out of poverty. Table 10 shows the percentage changes in poverty incidence associated with different transitions. For example, the incidence of poverty among those who were employed in the formal sector in both 2001 and 2004 fell by 22% over the period. In contrast, remaining in informal employment or moving from formal to informal employment significantly increased poverty risk.[12] Table 10 also shows that unemployed and inactive individuals in 2001 who moved into informal sector faced larger poverty reductions than those unemployed and inactive who moved into formal employment. These findings suggest that informal employment is not only a safety net but a desirable alternative to formal employment for the unemployed and inactive. However, many formal workers did not choose to move into informal employment to increase earnings and well-being, but rather as a ''survival strategy'' in the absence of formal opportunities.

So far, we have focused simply on whether people are poor or non-poor. However, it would be useful to quantify (at least partly) the extent to which people benefit from staying in formal or informal employment or moving between the two in terms of their earnings. Those who make the move from informal to formal jobs gain more than those who moved from formal to informal jobs

[12] An important benefit of formal versus informal employment is that it provides access to pension and health care services, and these social transfers help to keep households from falling into poverty. The World Bank (2003) estimated that, if these transfers were not available, poverty rates would be 40% higher.

Table 10
Percentage change in poverty incidence by labour market status, 2001–2004 (population between 15 and 64)

2001	2004				
	Formal	Informal	Unemployed	Inactive	Total
Formal	−22.1	89.5	50.3	−4.6	−4.3
Informal	−20.6	30.2	17.9	47.6	25.5
Unemployed	−20.4	−24.7	−6.7	−33.1	−21.7
Inactive	−6.5	−40.7	60.4	−3.6	−1.5
Total	−19.0	−2.8	35.6	−2.0	1.1

Note: Panel observations only. Numbers in table represent percentage change in poverty incidence of those who were in one status in 2001 and stayed or moved to another status in 2004. *Source*: LSMS 2001 and 2004.

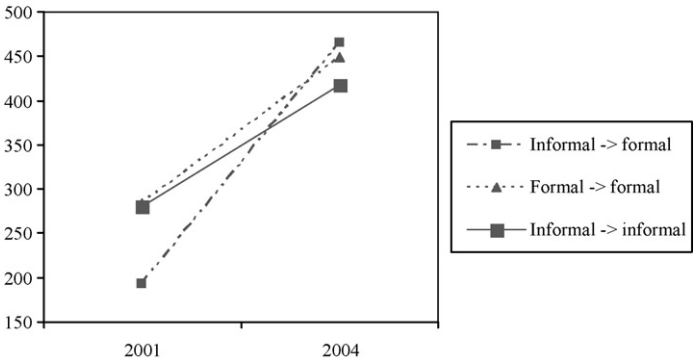

Fig. 2. Monthly net earnings (in KM) for workers who escaped poverty. *Note*: Panel observations only. Monthly net earnings are expressed in nominal terms. Monthly net earnings for formal workers who became informal and escaped poverty are not presented due to small number of observations. Source: LSMS 2001 and 2004.

(26% compared to 4%), which reinforces the earlier message about the benefits of formal employment. If we look only at the sample of workers who escaped poverty in Fig. 2 we see that those who moved from informal to formal employment benefited the most, as they experienced the greatest increase in real monthly earnings (more than double), while those who remained in informal employment saw a much smaller increase in earnings (49%).

Who are the people most likely to exit from poverty, and how do labour market transitions contribute to this process? To answer this question, we estimate a Probit model to determine individual and labour force characteristics that are associated with ''successful'' transitions out of poverty. The sample is restricted to those who are poor (as defined earlier) in 2001. The dependent variable takes the value one if an individual switches to being non-poor in 2004 and 0 otherwise.[13] As in the earlier mobility regression, the explanatory variables include the standard demographic and educational characteristics of the individual in the first period (gender, age and age squared, marital status, resident status, completed level of education and health status) and characteristics of the household (size of the household and location). In addition, we are especially interested in those variables relating to the economic characteristics of the individual,

[13] We do not estimate probit for escaping extreme poverty, as there was no population below the extreme poverty line in 2001.

including movements between different types of labour market states (formal employment, informal employment, unemployment and inactivity). The results are presented in Table 11.

The first result of interest concerns labour market transitions of workers. Transitions to formal employment (stayed or moved into formal employment) were associated with higher probability of escaping poverty relative to staying in informal employment (reference category), everything else being equal. Those who stayed in formal employment had 27% higher probability of escaping poverty relative to those who remained in informal employment. Furthermore, moving from informal to formal employment increased the probability of escaping poverty by 28% relative to those who stayed in informal employment, again holding all else constant.

With regard to other labour market transitions, only movements from inactivity to informal employment appear to have a significant effect on poverty. The inactive who moved into informal employment are associated with escaping poverty by 20% more relative to those who remained in informal employment.

In order to see whether our results are sensitive to the level of poverty line, we also examined the effect of labour market transitions on consumption per capita. Variables that capture labour market transitions of employed are now more disaggregated to include movements between different types of labour market states (formal wage employed, formal self-employed, informal wage employed, informal self-employed, farmers, unpaid family workers), as we are not constrained with the small number of observations for some of these transitions (as in the case of the probit model). Other explanatory variables are the same as before, but since the dependent variable – the change in the natural log of consumption per capita – is now continuous, we estimated the equation using ordinary least squares (OLS). The results are in Table 12.

Overall, the results are consistent with the probit estimates, but with more information on the impact of detailed labour market transitions of workers on consumption. All types of formal employment are associated with an increase in consumption relative to staying in informal wage employment. However, the biggest increase in well-being is achieved for those staying or moving into formal self-employment, *ceteris paribus*, which is associated with an increase in consumption of 48 and 23%, respectively. The corresponding results for those staying or moving into formal wage-employment are 20 and 13%, respectively. With regard to other labour market transitions, moving from inactivity to formal employment is associated with an increase in consumption of 23%, while moving from inactivity to informal employment is associated with an increase in consumption of 13%. These results suggest that also for the inactive, formal employment is a better option for increasing consumption than informal employment.

In summary, we can conclude that informal workers were less likely to escape poverty relative to formal workers, controlling for all other characteristics. These results are consistent with the earlier findings in Table 10 (without any controls). Formal self-employment was associated with the biggest increase in well-being. These results are in line with other research and highlight the importance of developing entrepreneurship and self-employment activity in BH.[14]

4.3. Inequality

Most transition countries have seen a sharp rise in inequality since the transition began. There is also empirical evidence of a significant and positive link between the level of income inequality

[14] Self-employment appears to be a high-reward strategy in transition economies (see, for example, EBRD, 2000, or Dutz et al., 2004).

Table 11
Probability of moving out of poverty, panel data 2001 and 2004 (probit)

	Coefficient	Standard error
Individual characteristics '01		
Female	0.049	(0.044)
Age	−0.006	(0.010)
Age^2	0.000	(0.000)
Single	*f*	
Married	−0.010	(0.066)
Cohabiting	−0.077	(0.173)
Widow/er	0.044	(0.125)
Divorced/separated	−0.035	(0.170)
Permanent resident	*f*	
Displaced resident or refugee	0.113	(0.068)*
Temporary resident	−0.029	(0.046)
Has chronic illness	−0.051	(0.055)
Education of individual '01		
No education	−0.141	(0.060)**
Primary education	−0.026	(0.044)
Secondary education	*f*	
College or university	0.253	(0.111)**
Labour market transitions of employed		
Stayed in formal employment	0.269	(0.079)***
Moved to formal employment	0.285	(0.090)***
Stayed in informal employment	*f*	
Moved to informal employment	−0.163	(0.187)
Other labour market transitions		
Moved from unemployment to formal employment	0.102	(0.164)
Moved from unemployment to informal employment	0.111	(0.113)
Moved from inactivity to formal employment	0.032	(0.115)
Moved from inactivity to informal employment	0.197	(0.082)**
Stayed or moved to unemployment	0.035	(0.086)
Stayed or moved to inactivity	0.074	(0.077)
Household characteristics		
Ln household size '01	−0.245	(0.065)***
Region '01		
Capital city	*f*	
Other urban	−0.150	(0.065)**
Rural	−0.099	(0.071)
Republika Srpska	0.010	(0.041)
Observations	915	
Wald χ^2 (26)	70.30	
Pseudo R^2	0.0589	

Notes: Dependent variable is poor in 2001 and non-poor in 2004 (dummy). (a) The unit of observation is individual. (b) The dependent variable for the model is whether an individual's consumption per capita was below the poverty line in 2001 and above it in 2004 (KM 2198 in 2001 and KM 2223 in 2004 per capita annually). (c) *, **, *** denote significance at the 10%, 5% and 1% level using two-tailed tests. (d) *f* denotes base category. (e) See note (e) to Table 8. The coefficients refer to marginal effects in percentages, computed at the average value of the variables for continuous variables and for a discreet change from 0 to 1 for dummies. *Source*: LSMS 2001, 2004.

Table 12
Correlates of an increase in (log) real consumption, panel data 2001 and 2004 (OLS regression)

	Coefficient	Standard error
Individual characteristics '01		
Female	0.052	(0.013)***
Age	−0.004	(0.003)
Age^2	0.000	(0.000)**
Single	*f*	
Married	−0.079	(0.021)***
Cohabiting	−0.180	(0.050)***
Widow/er	−0.020	(0.034)
Divorced/separated	−0.056	(0.057)
Permanent resident	*f*	
Displaced resident or refugee	0.109	(0.018)***
Temporary resident	−0.000	(0.017)
Has chronic illness	−0.007	(0.016)
Education of individual '01		
No education	−0.091	(0.023)***
Primary education	−0.028	(0.014)**
Secondary education	*f*	
College or university	0.084	(0.025)***
Labour market transition of employed		
Stayed in formal wage employment	0.195	(0.036)***
Moved to formal wage employment	0.128	(0.044)***
Stayed in formal self employment	0.476	(0.064)***
Moved to formal self employment	0.232	(0.068)***
Stayed in informal wage employment	*f*	
Moved to informal wage employment	0.029	(0.048)
Stayed in informal self employment	0.179	(0.089)**
Moved to informal self employment	0.146	(0.068)**
Stayed in farming (informal)	0.172	(0.071)**
Moved to farming (informal)	−0.012	(0.052)
Stayed or moved in unpaid family work (informal)	0.068	(0.064)
Other labour market transitions		
Moved from unemployment to formal employment	0.163	(0.071)**
Moved from unemployment to informal employment	0.071	(0.053)
Moved from inactivity to formal employment	0.230	(0.047)***
Moved from inactivity to informal employment	0.130	(0.043)***
Stayed or moved to unemployment	−0.054	(0.037)
Stayed or moved to inactivity	0.045	(0.036)
Household characteristics '01		
Ln household size	−0.142	(0.019)***
First consumption quintile	*f*	
Second consumption quintile	−0.288	(0.019)***
Third consumption quintile	−0.429	(0.020)***
Fourth consumption quintile	−0.486	(0.020)***
Fifth consumption quintile	−0.696	(0.023)***
Region '01		
Capital city	*f*	
Other urban	−0.097	(0.016)***
Rural	−0.070	(0.016)***

Table 12 (*Continued*)

	Coefficient	Standard error
Republika Srpska	−0.015	(0.012)
Constant	0.653	(0.079)***
Observations	4994	
R^2	0.2424	

Notes: Dependent variable is change in natural logarithm of consumption per capita. (a) The unit of observation is individual. (b) The dependent variable for the model is change in natural logarithm of consumption per capita. (c) Robust standard errors in brackets. (d) *, **, *** denote significance at the 10%, 5% and 1% level using two-tailed tests. (e) *f* denotes base category. (f) See note (e) to Table 8. *Source*: LSMS 2001, 2004.

and the share of the informal sector in the economy (see Rosser et al., 2000). Rutkowski (1996) highlighted the fact that excluding the informal sector in transition countries, where it accounts for a significant part of overall economic activity, is likely to underestimate the actual level of earnings inequality. This suggests that income inequality may decline if informal employment falls as a percentage of total employment. We analyse this issue using our panel data for 2001 and 2004.

Table 13 shows average monthly main job earnings in the formal and informal sectors, along with the inequality of earnings in each sector and year, using a range of inequality measures. Three points stand out. First, we see that earnings in formal employment were higher than in informal employment in 2001 and 2004, and the ratio between the two has increased slightly over that time (see also Tiongson and Yemtsov, 2005). Second, inequality in both sectors has declined over time according to all measures of inequality employed in our analysis. Third, inequality is higher in both periods in the informal sector relative to the formal sector. Again, this result holds regardless of which measure of inequality is compared. One possible reason for this last result, as argued in World Bank (2005) is the relatively high minimum wage, which is enforced in the formal sector but not in the informal sector.

Another way of seeing the decline in inequality over time is by looking at growth incidence curves (see Figs. 3 and 4, for formal and informal respectively). These curves divide the panel into percentiles according to the income distribution in 2001 and plot average growth rate in earnings between 2001 and 2004 for each percentile. The curves are on average decreasing over

Table 13
Monthly net main job earnings and inequality, 2001 and 2004

	2001	2004
Average monthly net main job earnings, in KM		
Formal	398.7	505.2
Informal	331.0	391.4
Inequality measures for formal earnings		
Gini coefficient	0.33	0.30
Theil entropy measure	0.21	0.16
Theil mean log deviation measure	0.19	0.15
Inequality measures for informal earnings		
Gini coefficient	0.40	0.37
Theil entropy measure	0.27	0.22
Theil mean log deviation measure	0.31	0.27

Note: Panel observations only. *Source*: LSMS 2001 and 2004.

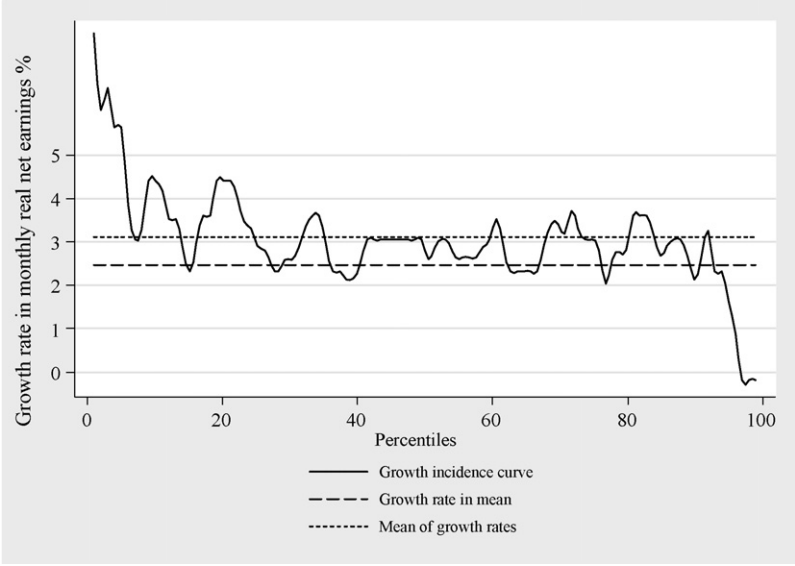

Fig. 3. Growth incidence curve: formal earnings, 2001–2004. *Note*: Panel observations only. *Source*: LSMS 2001 and 2004.

almost all quintiles in both the formal and informal sector, suggesting that inequality in both sectors declined. The employed across all quintiles experienced earnings growth (except for a small percentage at the top of the distribution), but the employed in low paid jobs benefited more from growth than those in high paid jobs, especially in the informal sector. However, because of the very low starting point, even these large increases failed to move many of these informal workers out of poverty.

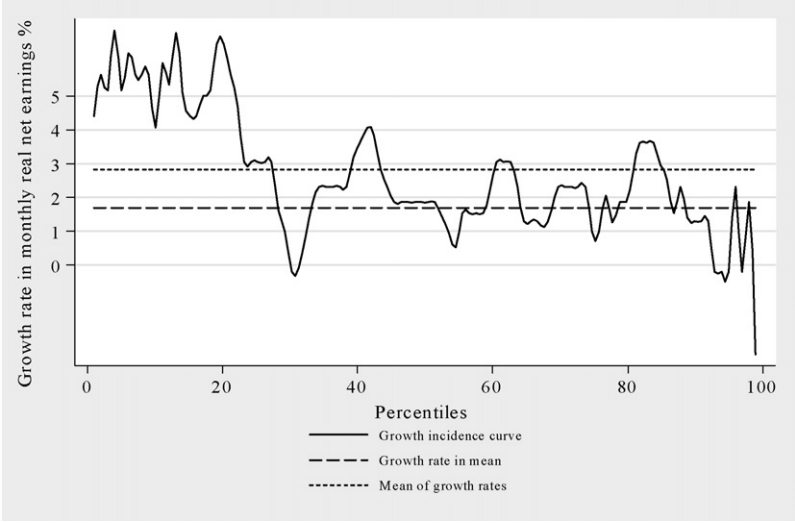

Fig. 4. Growth incidence curve: Informal earnings, 2001–2004. *Note*: Panel observations only. *Source*: LSMS 2001 and 2004.

4.4. Happiness

A final way of looking at the effects of informal activity in BH is to examine how subjective estimates of well-being are correlated with different labour market states. This approach to measuring welfare is somewhat unorthodox for economists but is becoming increasingly popular recently and has found several applications in the transition context.[15] There are at least two reasons to believe that it can be a fruitful approach for our analysis. First, the main alternative – consumption as an objective measure of well-being – has the drawback that it does not capture other elements of economic well-being such as increases in savings. Second, subjective assessments of life satisfaction can capture non-pecuniary aspects of employment that are not apparent from measures of earnings or other sources of income.

For this part of the paper, we use the 2004 LSMS sample only, as this was the first time when respondents were asked to assess their own general state of well-being. The specific question was the following: ''how dissatisfied or satisfied are you with your life overall?'' The respondents were asked to mark their answers on the scale from 1 (most dissatisfied) to 7 (most satisfied). In common with most of the recent literature on the correlates of happiness or life satisfaction, we use the responses to this question as our dependant variable and estimate an ordered probit model.[16] The explanatory variables are similar to those included in earlier analysis; they cover demographic and educational characteristics of the individual (gender, age and age squared, marital status, resident status and completed level of education), employment status of individual in formal and informal sector and characteristics of the household (size of the household, consumption quintiles and location).

Table 14 presents the estimated coefficients for the panel sample of working age individuals in 2004. Many of the results relating to demographic variables parallel those of other studies. For example, life satisfaction for those with high education (college) is higher relative to those with secondary education and consumption shows a U-shape pattern with respect to age. Married and cohabiting people report higher levels of happiness relative to single people, which is also in line with most of the literature. Other results show that permanent residents are more satisfied than displaced residents, while residents in the capital cities and in the Federation are happier than residents in other parts of the country.

The results of special interest concern the employment status of individuals. Formal employment is positively correlated with higher life satisfaction, other things being equal. Workers in formal employment, both wage and self-employed, show higher level of satisfaction relative to informal employees, but also compared to other types of informal employment, such as farmers. There is no clear distinction in life satisfaction between wage employed in the private sector and in the public sector. With the sole exception of the unemployed, informal employees are the least happy among the working age population in 2004. It is particularly important to note the *ceteris paribus* clause here; that is, our result holds even when we control for differences in income (as captured by consumption quintiles).

[15] Layard (2005) contains a useful and up-to-date survey of the happiness literature. Sanfey and Teksoz (2005) examine the correlates of life satisfaction over time in a range of transition countries.

[16] A positive (and statistically significant) coefficient on an explanatory variable indicates a positive relationship with life satisfaction, in the sense that it increases the probability of being in the highest category (satisfaction = 7) and decreases the probability of recording the lowest score (satisfaction = 1).

Table 14
Correlates of life satisfaction, 2004 (ordered probit)

	Coefficient	Standard error
Individual characteristics '04		
Female	0.044	(0.036)
Age	−0.098	(0.010)***
Age^2	0.001	(0.000)***
Single	*f*	
Married	0.340	(0.053)***
Cohabiting	0.399	(0.141)***
Widow/er	0.243	(0.089)***
Divorced/separated	−0.048	(0.120)
Permanent resident	*f*	
Displaced resident or refugee	−0.194	(0.043)***
Temporary resident	−0.013	(0.061)
Education of individual		
No education	−0.053	(0.057)
Primary education	0.009	(0.040)
Secondary education	*f*	
College	0.181	(0.091)**
University	0.070	(0.089)
Labour market status of individual		
Formal wage employment—private sector	0.388	(0.071)***
Formal wage employment—public sector	0.373	(0.067)***
Formal self employment	0.505	(0.111)***
Informal wage employment	*f*	
Informal self employment	0.039	(0.125)
Farmers (informal)	0.157	(0.080)**
Unpaid family worker (informal)	0.146	(0.101)
Unemployed	−0.127	(0.072)*
Inactive	0.159	(0.062)**
Household characteristics		
Ln household size	0.357	(0.049)***
First consumption quintile	*f*	
Second consumption quintile	0.348	(0.053)***
Third consumption quintile	0.572	(0.051)***
Fourth consumption quintile	0.718	(0.054)***
Fifth consumption quintile	1.012	(0.063)***
Region		
Capital city	*f*	
Other urban	−0.088	(0.045)*
Rural	−0.222	(0.048)***
Republika Srpska	−0.304	(0.033)***
Observations	4928	
Wald χ^2 (29)	914.96	
Pseudo R^2	0.060	

Notes: Dependent variable is self-reported life satisfaction, dummy (values from 1 to 7; 1 = most dissatisfied, 7 = most satisfied). (a) The unit of observation is individual. (b) The dependent variable for the model is dummy for self-reported life satisfaction and takes values from 1 to 7 (1 = most dissatisfied, 7 = most satisfied). (c) *, **, *** denote significance at the 10%, 5% and 1% level using two-tailed tests. (d) *f* denotes base category. (e) See note (e) to Table 8. *Source*: LSMS 2004.

In contrast, the formal self-employed report the highest levels of satisfaction. A similar result is found for other transition countries by Sanfey and Teksoz (2005), who note that this pattern is in general reversed in non-transition countries. It is also consistent with our earlier results which showed the strong link between moving to formal self-employment and increase in well-being. However, self-employment in the informal sector does not carry a higher level of satisfaction than informal wage employment.

5. Conclusion and policy implications

This paper has attempted to shed some light on informal employment in Bosnia and Herzegovina. The availability of high-quality panel data has allowed us to draw a number of important conclusions about the mobility of informal workers, about how the transition between different types of employment – formal and informal – affects consumption and poverty, and even about the degree of correlation between labour market status and subjective well-being. Overall, there is clear evidence that it is better to be employed in the formal than in the informal sector, and that those who made the transition from the latter to the former have benefited considerably in the process. Not only is the quality of jobs better in the formal sector, but these jobs provide access to important benefits such as pensions and health payments. But there are many people in BH for whom a job in the informal sector is the only short-term option. The paper showed that, as the public sector has been shrinking in recent years, informal private sector employment has actually increased.

Should we care about the large size of the informal sector, and if so, what can be done about it? Even though the informal sector represents an important safety net for many individuals and families, there are good reasons for the authorities in BH to try to bring these people into the formal economy. The main reason is that informal economic activities often act as unfair competition for those who play by the rules, and they also represent a loss of tax revenues to the state, therefore implying a higher burden for others. Part of the justification for the introduction of VAT in January 2006 was the extra incentive it gives to businesses to register, and so far, this rationale appears to have some support; the number of officially registered firms has increased substantially in the first few months of 2006. Another benefit of this process is that it may lead to an improvement in the accuracy of BH's (up to now) notoriously unreliable real economy data.

While the introduction of VAT is a one-off measure that seems to be producing results, a lasting reduction in the informal economy can come about only through sustained improvements to the business climate. Doing legitimate business in BH is difficult. A number of investment climate surveys over the years have pointed to a range of problems, ranging from high bureaucratic costs of registering a new business to the heavy burden of taxes and social contributions and the problem of pervasive corruption. For example, the World Bank's multi-country survey, *Doing Business in 2006*, shows that it takes 54 days on average to set up a new business in BH, the highest value in SEE.

On the positive side, there is plenty of anecdotal evidence to suggest that the situation is improving. The most recent wave of the EBRD-World Bank Business Environment and Enterprise Performance Survey (BEEPS) suggest a significant improvement in the business environment in several areas between 2002 (the time of the previous wave) and 2005, notably in perceptions of areas of economic governance such as corruption, customs and trade regulations, and tax administration.[17] These results lend support to the view that doing legitimate business has

[17] For a detailed analysis of the BEEPS results, see EBRD (2005).

become somewhat easier, and therefore the incentives to operate informally are less strong than before.

Finally, the paper's results on self-employment suggest the need for further efforts, possibly donor-supported, to promote entrepreneurship and the creation of micro-enterprises. The LSMS shows that many highly educated people are stuck in low-skill informal jobs, and such people run the risk that their skills will be eroded over time and therefore options to move to better-quality jobs in the formal sector will be closed off. A much better option for some is to open their own business and, as the evidence in this paper and others suggests, this can be a high-reward strategy.

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