Informal origin, performance and conduct: Firm-level evidence from the Balkans

Abstract:

In the last two decades, the Balkan counties have been a laboratory of business environment and financial sector reform in the post-communist and the post-conflict transition processes. The main aim was to support formal business operation and performance, as well as to prevent the old norms of informal business conduct. Using data from more than 5,000 firms in eight Balkan countries we examine three hypotheses related to the performance and behaviour/conduct of firms that stemmed from the informal sector. Our results indicate that firms of informal origin perform better in terms of sales and employment growth, as well as exporting activity. Moreover, we find a moderate positive relationship between access to finance among informal firms and their performance, which becomes stronger for young firms of informal origin. We interpret this as in accordance with a competitive view of informality in the Balkans. Finally, we test whether informal forms of conduct persist among formerly informal firms. Our results strongly reject this hypothesis.

Keywords: Informal sector, Balkans, firm performance, access to finance, informal norms.

JEL Classification: G3, D2, M1, O1

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1. Introduction

In the last two decades, the Balkan counties have been a laboratory of business environment and financial sector reform and social change, which were essential parts of the post-communist and the post-conflict transformation processes. The main aim was to support formal business operation and performance, as well as to prevent the old norms of informal business conduct. Moreover, job creation and a viable entrepreneurial environment are among the primary policy objectives within this region. One source of growth in the region is the operation of small and medium-sized firms that dominate the enterprise sector and have contributed to net job creation in several countries (World Bank 2005; 2006). Although these new micro businesses represent a dynamic section of the enterprise sector—with some experiencing very rapid sales growth—there has also been concern about the ability of these firms to survive in the longer term and to secure necessary financing for growth and thus promote constant and continuous job creation (World Bank 2007).

However, in the Balkan countries, like the transition economies of Eastern and Central Europe, large and active informal sectors are present. The prolonged typically considered as the lower tiers of segmented labour markets, where unmatched employees queue for good jobs and/or find a shelter out of necessity. The poor regulatory environment tends to keep formal sector wages in urban areas above market-clearing levels, and the low-productivity informal sector provides a subsistence shelter for unmatched employees (Lewis, 1954; Harris and Todaro, 1970; Lucas, 1978; Rauch, 1991; Chandra and Khan, 1993; Loayza, 1994, 1996). However, very often entrepreneurs operate informally to avoid the burdens of bureaucracy and corruption. Large cross-country studies suggest that increases in regulation and its enforcement are associated with larger informal sectors (Johnson et al., 1998, 1999; Friedman et al., 2000; Loayza et al., 2006).

Firm operation in the informal sector is a major policy concern as policy reforms in countries with high levels of informal activity are difficult to implement efficiently in the short term (Cantens, 2012). Moreover, it is also considered that the unfair competition to formal firms by firms operating informally, along with the existence of norms that encourage informality induces lower levels of formal business registration and provides fewer incentives for formal start-ups. A number of reforms targeted the regulatory and business environment with the aim to support formal business

operation and the performance of new SMEs. The desired outcome was to incentivize firms operating in the informal sector to register formally.

Given this unique background, this study examines the behaviour and performance of firms which stemmed from informal sector operation in eight Balkan counties. It is of primary interest to attempt to identify whether operation in the informal sector should be seen as disguised unemployment or as a potential outlet for latent entrepreneurs in poor regulatory and financial environments. The dynamics of firms with prior experience in informal markets—including their performance into formal entrepreneurial activity, the interaction of performance and access to finance, and the behaviour and attitudes towards informal means of business conduct—are important research and policy issues. However, little is known about these dynamics, particularly in the Balkans.

Our results indicate that firms of informal origin perform better in terms of sales and employment growth, as well as exporting activity. We find a moderate positive relationship between access to finance among informal firms and their performance. That relationship is stronger for young firms of informal origin, and we interpret it as in accordance with a competitive aspect of informality in the Balkans. Finally, we show that firms of informal origin are not more likely to engage in informal forms of business conduct, *i.e.* informal payments and gifts as part of business, compared to their counterparts that did not stem from informality.

Taking into account Baumol's (1990) view of the existence of a fixed pool of entrepreneurial talent, this study contributes to the debate on the role of the informal sector in the Balkans. This debate has important policy implications related to the treatment of informality, i.e. whether this should target its banning and prosecution or if opportunities should be sought aiming at the reallocation of talent in more efficient markets.

The remaining of this paper is structured as follows. Section 2 presents the theoretical background and a literature review of the issues of relevance to this study. Then, Section 3 uses this motivation to introduce the three main hypotheses of interest. Section 4 discusses the empirical strategy and methodology that is used in this study and presents the data. Section 5 presents the results along with their detailed discussion and Section 6 concludes.

2. Background and Literature Review

Until the late 1990s, the Balkan countries were centrally planned economies governed by vast numbers of laws, strict and sometimes unrealistic rules and regulations (Goldman, 1972)[1]. However, the Balkan countries constitute a specific case when it comes to entrepreneurial spirits and activities. Anecdotal evidence viewed individuals from the region as highly entrepreneurial and business oriented, both at home and abroad. For instance, compared with most centrally planned economies in Eastern Europe, the regime in the counties of former Yugoslavia had a somewhat different treatment of small businesses, mostly those related to crafts and services. Before the war, the region had a large entrepreneurial middle-class. These were encouraged and provided with financing mostly from local government-owned banks. Their interests were further supported through the formation of local and politically influential crafts unions. Furthermore, the former regime directed heavy manufacturing industries - on which socialist regimes placed a huge emphasis - in regions such as Bosnia and Herzegovina (BiH). However, the war in the former Yugoslavia region and the post-communist transition process altered the environment in all eight countries, and together with the destruction of the massive state operated factories, unemployment skyrocketed (World Bank, 2002).

In the Balkans a significant amount of economic activities takes place in the 'shadow' economy (figure 1). To an extent, informality became a 'tool' of necessity indicating evasion, often opposition of the laws, and a shelter used to cope with the day to day activities (Grødeland and Aasland, 2007). Other arguments view informality in post-communistic countries as part of the transition process, indicating resistance to reform (Mungiu -Pippidi, 2005) (the ranking of informality in the countries under study can be seen in figure 2, 3). Furthermore, political scientists suggested that informality might be deeply entrenched in the national culture as a result of historical events and social norms, and hence cannot easily be transformed (Grødeland and Aasland, 2007). Individuals and governments might be willing to accept informality to a certain extent, in order to avoid the potential social tension

[1] Informality was looked by many angles such as efficiency of laws, tax evasion, and shadow economy labor force, among others (Marceli et al., 1999; Marcelli, 2004; Chen, 2004; Williams and Windebank, 1998; 2001a; b; Flaming et al., 2000; 2005; Alderslade et al., 2006; Brück et al., 2006; Schneider et al., 2010; Schneider, 2012).

and turmoil that can arise as part of the transition process (Miller et al., 2001; Cantens, 2012). Hence, it might be the case that informality (as part of culture) will not easily adjust on externally imposed values and norms of conduct. Culture is an inherent set of values that shape human behaviour and behavioural scientists have for long recognised that adaptation to new sets of values is difficult to occur in the short run.

Figure 1 presents figures for the size of the informal sector in Eastern and Central Europe, as estimated by Schneider et al. (2010) and Schneider (2012). In the eight Balkan countries that will be examined in this study, namely, Albania, Bosnia and Herzegovina, Bulgaria, Croatia, FYROM, Serbia, Montenegro, and Croatia, the size of the informal sector is systematically above 35% of the country's GDP, with the only exception of Slovenia (28%).

[*Figure1 here*]

Figure 2 presents the rankings of 16 Europe and Central Asia countries in terms of total and new business entry densities. The data source is the 2008 World Bank Group Entrepreneurship Survey[2] and averages for the years 2002–2004 are presented as shown by Demirgüç-Kunt *et al.* (2011; 2012). New entry density is shown on the vertical axis and overall business density is shown on the horizontal. Both figures are given per 1,000 of working age population. The performance of Balkan countries with respect to total and new firm density diverges from particularly low figures for Albania, Bosnia and Herzegovina and Serbia, to much higher levels of formal business and new start-up activity in countries such as Bulgaria, Croatia and Slovenia.

[*Figure 2 here*]

[2] The 2008 World Bank Group Entrepreneurship Survey measures entrepreneurial activity in over 100 developing and industrial countries over the period 2000–2007. It is a joint effort by the World Bank Development Research Group, the IFC and the Kauffman Foundation in its third year. The database includes cross-country, time-series data on the number of total and newly registered businesses, collected directly from the registrar of companies. For more details, see Klapper et al. (2007) and http://rru.worldbank.org/businessplanet/default.aspx?pid=8. The 16 countries presented in Figure 1 are: Albania, BiH, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Russian Federation, Serbia, Slovak Republic, Slovenia and Ukraine. Averages (2002–2004) are presented so that the time period coincides with the initiation of the EBRD-World Bank Business Environment and Enterprise Performance Survey (BEEPS) data that will be introduced in the next section.

Figure 3 presents selected business environment indicators, denoting the ranking of the eight Balkan countries of our next sections in the World Bank's Doing Business indicators for the year 2011, in a total of 183 countries[3]. Evidently, BiH, Serbia and Albania rank lower compared to the neighbours in terms of the ease of doing business, starting a business, paying taxes, trading and enforcing contracts. The situation was similar in earlier versions of the data. FYROM, Croatia, Slovenia and Bulgaria appear to be doing better, even ranking at the top 60 countries with respect to some of the indicators of interest.

[*Figure 3 here*]

Hence, despite the fact that some countries doing better in terms of the business environment and business registration, informality is still a widespread phenomenon in all eight of our Balkan countries. In the next sections we will examine the relationship between grey market experience and firm behaviour and performance. The impact of informal sector experience on the latter is a debatable issue, and this debate has important policy implications for the treatment of the informal sector after economic liberalization in the process of economic development (Kaufmann and Kaliberda, 1996; Johnson et al., 1997)[4].

3. Hypotheses

3.1 Informal origin and firm performance

Global evidence shows that total firm registrations and entry rates are significantly higher in countries with a smaller informal sector, suggesting a substitution effect and a larger informal sector in countries with higher entry barriers (Klapper et al., 2007). However, informal micro-enterprises might not lag behind formal micro-

[3] The World Bank's Doing Business project looks at small and medium-size companies and measures the regulations applying to them through their life cycle. The 2011 report covers 10 indicators sets in 183 economies with the goal of providing an objective basis for understanding and improving the regulatory environment for business. Doing Business provides a quantitative measure of regulations for starting a business, dealing with construction permits, employing workers, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts and closing a business, as they apply to domestic small and medium-size enterprises.

[4] The debate does not neglect the fact that informality involves tax evasion and unfair competition to the formal sector, which are significant impediments to growth. Moreover, the informal sector is characterized by low-pay and low-job security among its employees and a large amount of informality in an economy is an indicator of corruption and of poor regulatory, financial and labour market environments.

enterprises in terms of growth or dynamism and informal entrepreneurs might not lack in ability (Blau, 1985). Moreover, studies of Latin America suggest that in developing counties, with low levels of formal sector labour productivity, entrepreneurs with low levels of human capital might optimally choose to operate in the informal sector (Maloney, 2004).

The job-specificity and skill transferability literature also suggests the potential of human capital acquisition through informal operation. Individuals are more likely to gain in capital, knowledge and ability while working rather than when out of the labour market (Evans and Jovanovic, 1989). Informality can be thought to allow a leader to explore the potential profitability of an industry without incurring significant sunk costs (Bennett and Estrin, 2007). This entrepreneurial human capital could be of vital importance to the development process where the uncertainty about the future profitability of new ventures is higher, and several adaptations are required to support 'new' production methods (Iyigun and Owen, 1998; Hausman and Rodrik, 2003; Hausman et al., 2007). The last two views are also compatible with the view of entrepreneurs as 'jacks of all trades' (Lazear, 2004), and one could perceive the informal sector as an incubator for formal sector entrepreneurship when the business environment improves. Guariglia and Kim (2006) provide some evidence in favour of that view by establishing a relationship between dual-job holding and self-employment in Russia.

Our first hypothesis attempts to shed some light on the discussion about the characteristics of firms in the informal sector, by comparing the performance of firms that stemmed from the informal sector to those that did not. Specifically:

Hypothesis 1 (H1): Prior informal sector market experience is negatively related to subsequent formal firm performance

The counterfactual hypothesis would suggest that grey market experience is positively related or unrelated to firm performance. In the next section we describe in detail our set of firm performance indicators, and the methodological treatment of issues related to the comparison of firms with and without prior informal market experience.

3.2 Informal origin and access to finance

A more recent finance-based view stresses the role of the financial market and the regulatory environment in competitive labour markets when entrepreneurs and/or workers are heterogeneous in both the formal and the informal sector (Maloney, 1999, 2004; Pratap and Quintin, 2006; de Paula and Scheinkman, 2007; Galiani and Weinschelbaum, 2007). In a moral hazard framework with credit rationing the decision to operate formally or informally is shaped by the interaction between the cost of entry into formality and the relative efficiency of formal vs. informal credit mechanisms and their related institutional arrangements (Straub, 2005). Amaral and Quintin (2006) model the costs associated with producing in the informal sector as resulting from a limited access to formal means of contract enforcement. In economies under transition, the regulatory environment might not foster formal entrepreneurship and entrepreneurial individuals might choose to operate in the informal sector or shadow economy. Indeed, Djankov and Murrell (2002) document the existence of significant entry costs into formality, in the form of registration and licence fees.

Hence, our second hypothesis suggests that:

Hypothesis 2 (H2): Access to formal finance does not exert a higher impact on the performance of firms of informal origin, compared to the firms without an informal origin

The counterfactual is that access to finance exerts a higher impact on firms that stemmed from the informal sector, compared to their counterparts without 'grey market' experience.

3.3 Informal origin and informal norms

Grødeland and Aasland (2007) suggest that informality might be deeply entrenched in the national culture as a result of historical events and social norms. Hence, informal behaviour (as part of culture) will not easily adjust on external imposed values. Culture is an inherent set of values and social norms which do not easily amend. There can be little doubt that human behaviour is shaped by social norms[5], *i.e.* behavioural regularities that are based on a socially shared belief about how one ought to behave. Hirschman (1982) suggests that institutions can enforce social

[5] A social norm describes: (i) a behavioural regularity; that is (ii) based on a socially shared belief of how one ought to behave; which triggers (iii) the enforcement of the prescribed behaviour by informal social sanctions (Fehr and Gächter, 2000).

norms and induce specific behaviours which may finally become part of the behavioural profile of the individual[6]. Such profiles may entail self-centered, opportunistic, reciprocal and cooperative behaviour. In some occasions, acquired preferences can be internalized and become constraints on behaviour (Ariely, Loewenstein and Prelec, 2003; 2006; Carpenter, 2005). In response to social dilemmas, social norms are ubiquitous (Ostrom, 1998). Social norms also have a decisive impact on the functioning of markets, by either deterring or encouraging socially beneficial behaviour.

Hence, however acquired, preferences in some occasions may be internalized, taking on the status of general motives or constraints on behaviour. Values which become durable attributes of individuals may explain behaviours in novel situations. The idea that preferences are not well defined, but become articulated in the process of making a decision is consistent with a large body of research on what decision researchers refer to as "constructed preferences" (Slovic, 1995; Hoeffler and Ariely, 1999). Furthermore, preferences may become generalised through a process termed dissonance reduction (Festinger, 1957)[7].

Based on these views on how institutions shape social norms and behaviour, along with the internalization of preferences, we specify our third hypothesis, according to which:

Hypothesis 3 (H3): Firms with informal market experience are not more likely to engage in behavior of informal business conduct, such as informal payments to tax authorities, customs etc.

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[6] The idea that economic institutions shape the preferences of individual agents has a long history in economic thought even if it has not had much impact on economic theory (Bowles, 1998; Carpenter, 2005). Hirschman (1977, 1982) was among the first to illustrate the statements of the cultural effects of markets. The author suggests that institutions can enforce social norms and induce specific behaviours which may finally become part of the behavioural profile of the individual. Bowles (1998) explains how markets and other economic institutions also influence the evolution of values, tastes, and personalities, apart from just allocating goods and services, and provides an overview of the mechanisms via which such a process can take place.

[7] The cognitive elements in dissonance could be one's values and behaviour, as when one is doing something which is inconsistent with one's values. Festinger (1957, pp. 271-73) used this reasoning to explain "*specific ideological changes or opinion changes subsequent to the change in a person's way of life*", such as a sudden change in the job which a person does. Dissonance reduction thus provides another explanation for how economic circumstances may induce new preferences, and why the new preferences might become general reasons for behaviour. Simon (1997) identifies an important characteristic related to social learning that can be justified to contribute to the fitness of socially dependent human beings. '*Docile*' people tend to adapt their behaviour to norms and pressures of the society.

The counterfactual states that firms of informal origin will not easily adapt their values to the new environment and hence will be more likely to engage behaviours of informal business conduct.

The next section discusses our empirical strategy for testing our three main assumptions, along with a number of methodological and robustness tests.

4. Empirical Strategy

We use the EBRD-World Bank Business Environment and Enterprise Performance Survey (BEEPS) data to examine the behavior and performance of firms in eight Balkan countries, namely Albania, Bosnia & Herzegovina, Bulgaria, Croatia, FYROM, Montenegro, Serbia, and Slovenia. The BEEPS was conducted in four years, *i.e.* 2002, 2005, 2007, and 2009, with repeated observations for part of the sample. Importantly, the aim of the study is to compare the performance and behavior of firms with prior informal sector experience to those of firms without any grey market experience in the past. We employ the sub-sample of firms that were initiated during or after 1984, *i.e.* firms which were operating during the period in which most of the reforms took place and younger than 25 years in 2009.

4.1 The Sample

We define *Informal Origin* as a binary variable capturing informal sector experience in the past. *Informal Origin* takes the value 1 if the firm manager does not reply positively to the question "*Was the firm formally registered when it began operations in the country?*" Moreover, it takes the value 1 if the manager reports a year of registration later than the year in which the firm began its operations in the country. Finally, an additional question asks the managers to report the year in which the firm began its exporting activity. We consider the few cases of firms that reported a year for the initiation of exporting that was earlier than the year of registration as firms of informal origin.

Table 1 presents the descriptive statistics for our sample of firms. Our sample comprises of 5,756 firm-years, from firms operating less than 25 years in 2009. There are 5,103 firms in the sample, 569 of which have repeated observations for more than one year in the sample. Out of the 5,756 firm-years: 325 (5.6% of the sample) are

from 275 firms of informal origin according to the above definition, and 5,431 are from 4,828 firms which have no prior grey market experience. The distributions by year shown in Table 1 indicate that there is more or less a balanced sample of firms for every year in the data, *i.e.* 1,089 firms in 2002, 1,300 in 2005, 1,778 in 2007 and 1,589 in 2009[8].

[*Table 1 here*]

With respect to the distribution of the country sub-sample firm-years: 702 (7.1% informal origin) are from Albania, 660 (8.3% informal origin) are from Serbia, 549 (6.4% informal origin) are from Bosnia and Herzegovina, 608 (7.7% informal origin) are from FYROM, 533 (3.4% informal origin) are from Slovenia, 1,659 (5.1% informal origin) are from Bulgaria, 908 (2.6% informal origin) are from Croatia, and 137 (8.8% informal origin) are from Montenegro.

Table 2 presents the summary statistics for the main variables in our study. Column 1 presents averages for the pooled sample of firms with and without informal origin, and then. Columns 2 and 4 present averages for each of the two groups. Signs and levels of significance from a t-test of difference in averages between firms with and without informal origin are also presented. Finally, column 3 presents averages for one additional sub-sample of firms, *i.e.* that of firms with informal origin who are operating for less than or 5 years. Two-sided t-tests between those firms and firms with no informal origin are also presented.

[*Table 2 here*]

The average firm age in our sample is 10.55 years, with firms of informal origin being slightly older on average (11.4 years) compared to formal firms (10.5 years). 12.9% of the firms in our sample have foreign affiliation in terms of having a fraction of the company owned by foreign individuals, companies or organizations. 85.7% of the firms are SMEs (firms with less than 100 employees). Firms of informal origin are significantly more likely to be SMEs (91.1% versus 85.3% of formal firms). 10.2% of the firms of informal origin have a foreign owner, compared to 13% of firms without informal origin (the difference is not statistically significant at conventional levels). In terms of the industrial composition of the sample, using 1-digit ISIC codes, 35% of

[8] The number of firms with informal origin is higher in the samples for 2005 (9.9%) and 2009 (6%). It is worth noting that there is no data for 2007 for the following five countries: Serbia, BiH, FYROM, Slovenia and Montenegro.

the sample are manufacturing firms, 7.3% are in trade and repairs, 34.3% are in transportation and storage, 5.2% are in accommodation and food service, 4.9% in information and communication, 7.7% in professional, scientific and technical services, and there are smaller fractions of firms in utilities, financial and insurance services, arts & entertainment etc.

The remaining list of main variables for this study comprises of (a) four sets of performance indicators, (b) four sets of "access to finance" indicators, and (c) three sets of informal payment indicators. These sets along with their variations are presented in Table 2, under the respective headings.

4.2 Performance indicators

Our first set of performance indicators comprises of total sales in USD, and 3-year sales growth. The average firm in the sample has USD 4.8 million in sales, with a much lower median of 569.2 thousand[9]. The average firm has 31.6% sales growth in the last three years. There are no statistically significant differences in terms of the total sales figures between firms with and without informal origin (this is also the case between young informal and firms with no informal origin). The sales growth figure in the last 3 years is 35.6% for firms of informal origin, compared to 31.4% for firms with no informal origin. Young former informal firms have a sales growth figure of 98.3%, and they are significantly more likely to grow faster, compared to all other firms.

Our second set of performance indicators comprises of full-time employment and 3-year full-time employment growth. The average number of employees in the sample is 64, with firms of informal origin being smaller in size compared to their formal counterparts. The former employ 38 employees on average, compared to 66 for firms of no informal origin. The difference is significant at the 5% level. Young informal firms employ 18 full-time workers on average. The average 3-year employment growth rate in the sample is 19.4%, with firms of informal origin growing at a 24.3% rate, young former informal firms growing at a 36.6% rate and firms of no informal

[9] The sales figures are windorized at the 3rd and the 97th percentile by country.

origin growing at a 19.1% rate. The differences in average employment growth rate are statistically significant[10].

Our third set of performance indicators comprises of a binary variable identifying exporters and a continuous variable capturing the percentage of sales from exports. Table 2 shows that 33% of the firms in the sample are exporters, with an average volume of exports equal to 14.4% of total sales. Firms of informal origin are more likely to be exporters compared to firms of no informal origin (38.8% versus 32.7%). The difference in the percentage of sales exported between the two groups is not statistically significant at conventional levels. Reasonably, young former informal firms are less likely to be exporters and export a lower fraction of their sales, compared to both firms with and without informal origin.

Our final performance indicator is total factor productivity (TFP). We estimate the production function using the technique proposed by Olley and Pakes (1996)[11]. The estimation results are shown in the *Appendix, Table A1*, and total factor productivity is predicted as an outcome of this regression. Table 2 shows that the difference in TFP between firms with and without informal origin is not significant.

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[10] Following Davis and Haltiwanger (1992), we compute employment growth for a particular firm, j, as:

$$g_{i,t} = \frac{E_{i.t} - E_{i,t-3}}{X_{i,t}}$$

where:

$$X_{i,t} = \frac{E_{i.t} + E_{i,t-3}}{2}$$

The growth rate, $g_{i,t}$, is the difference between the number of employees in firm i at time t, $E_{i,t}$, and the number of employees in the previous point in time, $E_{i,t-3}$, in proportion to the *average* number of employees within the three-year period, $X_{i,t}$. Gjerløv-Juel and Dahl (2011) suggest that the advantage of using the average employment level, $X_{i,t}$, over the initial employment level, $E_{i,t-3}$, is that it allows for job creation and job destruction by entry and exit, respectively, and it is symmetric around zero for job creation and job destruction. Using $E_{i,t-3}$ instead would overestimate the growth rate for job creation ($g_{j,t} > 0$) and underestimate the growth rate in the case of job destruction (leading to a numerically smaller $g_{i,t}$). The equation for $g_{i,t}$ also takes into account the intuitive correlation between size and growth. A business with only one employee, which recruits additionally two employees, would have a growth rate of 200% using $E_{i,t-3}$ and just 100% using $X_{i,t}$, whereas a business with an initial employment level of 50 employees and an equivalent increase in staff by two employees by comparison would have a growth rate of 4 and 3.92%, respectively. For exactly this latter reason, we use this same framework to compute 3-year sales growth. In this latter case, the significance of the results is robust to the replacement of $X_{i,t}$ with $E_{i,t-3}$ in the denominator.

[11] We use the opreg command in Stata, by Yasar et al. (2008). Olley and Pakes (1996) introduced a novel approach to address the simultaneity and selection problems while estimating the production function parameters and firm-level productivity. The simultaneity problems are addressed by using investment to proxy for an unobserved time-varying productivity shock, and the selection problems are addressed by using survival probabilities.

This pattern is robust to a number of variations in the estimation of TFP (using 2nd polynomial expansion, using firm age instead of its log etc).

4.3 Access to finance indicators

Our first indicator approximating access to finance is an ordinal variable asking firms to evaluate how easy is to obtain finance. The variable takes the value 1 if the managers respond "very severe obstacle", 2 if "major obstacle", 3 if "moderate obstacle", 4 if "minor obstacle", and 5 if they respond "no obstacle". Firms with informal origin give an average ranking of 3.53, which is significantly smaller compared to the ranking by firms with no informal origin (3.69). The average ranking for young former informal firms is 3.42.

Our second send of variables comprises of 4 binary variables denoting: (i) access to formal finance only, by state or private banks (30.9% of firms), (ii) access to both formal and informal finance (4.5%), (iii) access to informal finance only, e.g. from moneylenders, friends, relatives, neighbors etc. (9.9%), and (iv) no access to finance (54.7%). There is also an independent indicator capturing access to supply credit by suppliers (9.9%). Firms of informal origin are more likely to have acquired finance from a formal institution compared to firms without an informal origin. They are less likely not to have any financing means. The opposite is true for young informal firms, who are less likely to have acquired formal finance and more likely not to have any finance, compared to firms without an informal origin.

Our third financial access indicator approximates customer affiliation with financial institutions, measuring the number of positive responses to questions related to whether a firm has access to a bank account, overdraft facility, and/or a line of credit. The variable ranges from 0 to 3, and Table 2 indicates that 3.1% of the firms have access to zero services, 28.6% have access to one service, 35.8% have access to two services, and 32.5% have access to all three services. Firms of informal origin are more likely to have access to zero services and young informal firms are less likely to have access to all three services.

4.4 Informal payment indicators

Our first set of informal payment indicators comprises of four ordinal variables stemming from questions asking firms to evaluate the frequency with which informal gifts and payment are required towards: (i) customs/imports; (ii) courts; (iii)

taxes/tax collection; (iv) in general. The response categories range from 1 (never) to 6 (always). Table 2 indicates that there are no significant differences in the average ranking of the frequency of informal payments between firms with and without an informal origin.

Our second set of informal payment indicators comprises of two count variables, capturing the number of informal payments made. The first variable counts out of 10 items (electricity, water, phone, certificate, permit, construction, inspection, government contract, imports, and licenses). The second variable counts out of 6 items, to avoid missing variable problems (electricity, phone, permit, inspection, government contract, and licenses). The t-tests indicate that firms with an informal origin are more likely to engage in informal payments during the last year.

The third and final set of informal payment indicators measures the value of informal payments made in USD and as a fraction of the firm's sales. The average value is higher for firms with an informal origin, compared to formal firms, although the mean difference is not statistically significant. Firms with informal origin pay 2% of their sales on average to informal payments, compared to a figure of 1.5% of the sales of firms without an informal origin.

Retrospectively, the statistics in Table 2 suggest firms stemming from the informal sector are more likely to perform better in terms of sales and employment growth, as well as exports. There are no significant differences in TFP, while the averages for access to finance and informal payments produce mixed insights[12]. Hence, it is interesting to examine the determinants of these indicators in a regression setting, in order to see whether these differences persist or not. In the next section, we examine our three hypotheses of the previous section and present three sets of estimates for: (a) the impact of informal origin on our performance measures, (b) the impact of the interaction between informal origin and access to finance on our performance measures, and (c) the impact of informal origin on the frequency, number, and value of informal payments. Linear regression models are used for continuous dependent variables, *i.e.* for the logarithms of sales, employment, and value of informal

[12] The *Appendix Table A2* presents averages for the main variables for each of the eight countries in our sample. It is shown that firms in Albania, Croatia and Slovenia have higher total sales on average compared to firms in the remaining countries. Firms in Albania, FYROM and Bosnia and Herzegovina have higher sales growth compared to the remaining firms. The *Appendix Table A3* presents the pairwise correlation matrix for the main variables in our study, and stars for significance at the 5% level.

payments, as well as for the percentage employment and sales growth, the percentage of sales exported, the percentage of sales paid in informal payments and TFP. Non-linear models are used for binary, count and ordinal outcomes. Specifically, probit models are used to estimate the likelihood of being an exporter, poisson models are estimated for the count of informal payments, and ordered probit models are estimated for the ordinal access to finance variable, and the frequency of informal payments.

5. Results and Discussion

Table 3 presents our estimates of the determinants of firm performance. The dependent variables are: the natural logarithm of total sales in column 1, percentage sales growth in column 2, the logarithm of the number of full-time employees in column 3, percentage employment growth in column 4, a binary variable taking the value 1 if the firm is an exporter in column 5, the percentage of sales exported in column 6, total factor productivity in column 7, and an ordinal variable capturing self-assessed access to finance, ranging from 1 (very severe obstacle) to 5 (no obstacle), in column 8. The specification in all columns incorporates a binary variable capturing informal sector origin, a dummy variable for SMEs, one for foreign ownership, the logarithm of firm age, 11 dummy variables for 1-digit ISIC codes, 8 dummy variables for country, four year dummies and a constant term.

[*Table 3 here*]

The results in Table 3 show that firms of informal origin have higher 3-year sales and employment growth, and are more likely to be exporters, as well as to export a higher fraction of their sales. Moreover, they are less likely to report that they have no obstacles in accessing finance, compared to their counterparts without an informal origin. The effects are of considerable magnitude, and statistically significant at the 1% level, with the exception of columns 5 and 8 in which the coefficients for firms with informal origin are significant at the 5% and the 10% level respectively. Specifically, firms of informal origin have 11.7 percentage point higher sales growth, 7.1 percentage point higher employment growth, 12.3 percentage point higher probability to export and 3.7 percentage point higher fraction of their sales exported. Given the sample predictions at the bottom of the table, the magnitude of the effect

is in the order of 37 percent higher sales and employment growth, 40 percent higher exporting probability, and 25 percent higher fraction of sales exported.

Among the other interesting findings, SMEs perform worse in all performance indicators, and foreign firms have higher volumes of sales and employment, but do not grow faster. The latter are also more likely to export and have easier access to finance. Ceteris paribus, firms in Slovenia, are the top performers in terms of sales, sales growth and exports, and firm in Montenegro and Albania are the top performers in terms of employment, employment growth, and access to finance. The contrast between firms of informal origin and the SMEs in terms of performance is of great interest, as SMEs in Eastern and Central Europe are often claimed to be responsible for most of the employment growth. The results contradict this view for the Balkans, and highlight the higher performance of firms with informal sector experience in the past.

This particular latter result could be very misleading if firms of informal origin tend to die younger, because of initially worse performance. This survivorship bias would bias our estimates upwards. In order to mitigate such concerns as much as possible given the available data, we perform three specific robustness exercises, presented in *Table 4*. In Panel A, we match firms of informal origin with similar firms without informal origin. To accommodate that firms of informal origin may not survive as long as those without any prior informal sector experience, we use regression weights. Weights are calculated using 5 nearest-neighbor propensity score matching; the outcome variable is the informal origin dummy variable, and controls are the socio-demographic characteristics used in the specification of Table 3[13]. In Panel B we include an interaction term between informal origin and firm age lower than or equal to five years (*Young*). The firm age variable is replaced with *Young* in this specification. Finally, in Panel C, we present estimates for the sub-sample of firms with age less than or equal to five years.

[*Table 4 here*]

The results in Panel A confirm the robustness of our previous findings, as for the matched sample of "statistical twin" firms, firms of informal origin have 11.5 percentage point higher sales growth, 5.8 percentage point higher sales growth, 10.3

[13] We use the psmatch2 package in Stata.

percentage point higher probability of exporting and 3.2 percentage point more sales exported. Given the predicted probabilities of the models (not shown), the magnitude of the effects translates to 38 percent higher sales growth, 27 percent higher employment growth, 34 percent higher likelihood to export, and 24 percent more sales exported.

The estimate for the interaction term between young firms and informal origin in Panel B shows that young former informal firms have higher sales and higher sales growth. They have 152 percent higher sales[14] compared to the remaining firms and 120 percent (38 percentage point higher sales growth). Moreover, they are less likely to export in high volumes. Finally, the estimates for the sample of firms with age less than or equal to five years suggest that among the young firms, those with informal origin have higher volume of sales, higher sales growth and higher employment growth. The magnitude of the effects is 125 percent higher volume of sales, 129 percent (40.7 percentage points) higher sales growth, and 82 percent (15.8 percentage points) higher employment growth.

All three panels confirm that, to the extent that survivorship bias can be mitigated by matching firms and examining young firms, firms of informal origin grow considerably faster in terms of sales and employment. Taken together, our results strongly reject hypothesis 1, providing evidence of the contrary, *i.e.* firms of informal origin in the Balkans perform better in terms of sales growth and employment growth, as well as in the likelihood and volume of sales exported.

The competitive view of the informal sector stresses the role of the interaction between informality and access to finance for performance. In the following two tables, we examine the importance of this interaction term in three distinct settings, using the three sets of variable approximating access to finance described in the previous section. In *Table 5*, columns 1-7 we estimate the specifications of columns 1-7 of the previous two tables, including an interaction term between informal origin and ease of access to finance, *i.e.* the ordinal variable that ranks from 1-5, with 5 denoting that access to finance is no obstacle. The inspection of the results indicates

[14] The calculation of the effect of dummy variables in models with log-transformed dependent variables is based on the following formula: $100(\exp(Coef. - \frac{S.E.^2}{2}) - 1)$

that firms of informal origin with easier access to finance have higher 3-year sales growth, compared to their counterpart firms with more obstacles in access to finance.

[*Table 5 here*]

Columns 8-14 incorporate a set of four dummy variables, capturing access to formal finance exclusively, access to both formal and informal finance, access to informal finance only, and no access to finance, respectively. The results in all columns indicate that access to formal finance exerts a positive impact of a large magnitude to the majority of our performance dependent variables. Columns 15-21 present estimates which include an interaction term between informal origin and access to formal finance exclusively. The interaction term is insignificant in all specifications and exerts a negative impact on sales in column 15. This pattern is reversed when we include an interaction term between formal finance and young firms of informal origin in columns 22-28. In columns 22 and 23, the interaction term exerts a positive impact of large magnitude to both total sales and 3-year sales growth. Hence, young informal firms with access to formal means of finance perform much better in terms of sales and sales growth compared to their counterparts without access to formal finance.

In *Table 6*, we test the robustness of our findings with respect to the importance of access to finance by presenting estimates which incorporate a proxy for customer affiliation with financial institutions, *i.e.* the number of banking services used, ranging from zero to three. The results in columns 1-7 show that the number of banking services used is positively related to the vast majority of our performance indicators, with the only exception of the fraction of sales exported. In columns 8-14, we incorporate an interaction term between informal origin and the number of banking services used. The interaction term exerts an insignificant impact in all seven performance measures. Finally, columns 15-21 present results from specifications which incorporate an interaction term between young firms of informal origin and number of banking services used. The results show that young former informal firms who use more banking services have significantly higher sales growth and employment growth figures.

[*Table 6 here*]

Altogether, the results of this section provide moderate positive evidence rejecting hypothesis 2, *i.e.* the interaction between informal origin and access to formal finance does exert a positive impact on some of our performance indicators, such as sales growth, but the effects are higher and more significant for young firms of informal origin. We interpret this evidence as favourable to the competitive view of the informal sector in the Balkans.

Our final set of estimates test our third and final hypothesis which is related to informal origin and the persistence of informal forms of business conduct. *Table 7*, columns 1-8 present the estimation results from specifications which use the same set of independent variables as in Table 3. For reasons of space we present the estimates which use one distinct feature, *i.e.* incorporating two dummy variables for firms of informal origin with age less than (or equal to) five years, and firms with informal origin which operate for more than five years. The reference category comprises of firms without informal origin. The dependent variable in column 1 is the frequency of informal payments in general, ranging from 1 (least frequent) to 5 (most frequent). Then, the dependent variable is the frequency of informal payments (1-5): to tax authorities in column 2; to courts in column 3; and to customs in column 4. The dependent variable in column 5 is the count of informal payments in a total of 10 items, and the count out of 6 items in column 6 (fewer missing observations). Columns 7 and 8 have the percentage of sales given in informal payments and the logarithm of the value of informal payments in USD as dependent variables.

[*Table 7 here*]

The inspection of the results provides a strong positive answer to our Hypothesis 3, indicating that firms of informal are not more likely to engage in any type of informal payments. Young informal firms are even less likely to frequently give informal payments to customs. We interpret this result with caution, as we have seen that young informal firms are less likely to be exporters in the first place. Moreover, older former informal firms give a slightly higher fraction of their sales to informal payments, compared to firms without informal origin. However, the vast majority of coefficients for firms of informal origin, both younger and older, are insignificant at all conventional levels. Hence, the hypothesis that norms of informality persist in the future is strongly rejected by the data.

6. Concluding Remarks

In the last two decades, the Balkan counties have been a laboratory of business environment and financial sector reform in the post-communist and the post-conflict processes. Within this interesting environment of reform, we examine three important hypotheses related to the performance and behaviour/conduct of firms that stemmed from the informal sector. Specifically, we examine whether formerly informal firms perform better or worse compared to their counterparts without any informal origin. Our results indicate that they actually perform better in terms of sales and employment growth, as well as exporting activity. These findings are robust to a number of features, and even strengthened when comparing statistically similar and younger firms. Secondly, we examine the interaction of access to finance and informal origin, an interplay which is pivotal to testing the recently expressed view of the competitive role of the informal sector in some counties. Our results indicate a moderate positive relationship between access to finance among former informal firms and their performance. That relationship is stronger for young firms of informal origin, and we interpret this as in accordance with a competitive aspect of informality in the Balkans. Finally, we test whether informal forms of conduct persist and are stronger among formerly informal firms. Our results strongly reject this conjecture.

These results can be thought to support the perception of the informal sector as a potential incubator for viable formal entrepreneurship in the early years of transition, through which individuals acquire skills that can facilitate their future entrepreneurial activities. Our finding that experience in 'grey' or 'unofficial' markets may be seen as an outlet to latent entrepreneurship might be considered in the policy dialogue on the treatment of the informal sector after economic liberalization in the process of economic development (Kaufmann and Kaliberda, 1996; Johnson et al., 1997). Given Baumol's (1990) view supporting the existence of a fixed pool of entrepreneurial talent, the findings contribute to the debate on the treatment of informality in the Balkans, *i.e.* whether this should target its banning and prosecution or if opportunities should be sought aiming at the reallocation of "jack of all trades" talent (Lazear, 2004) in more efficient markets.

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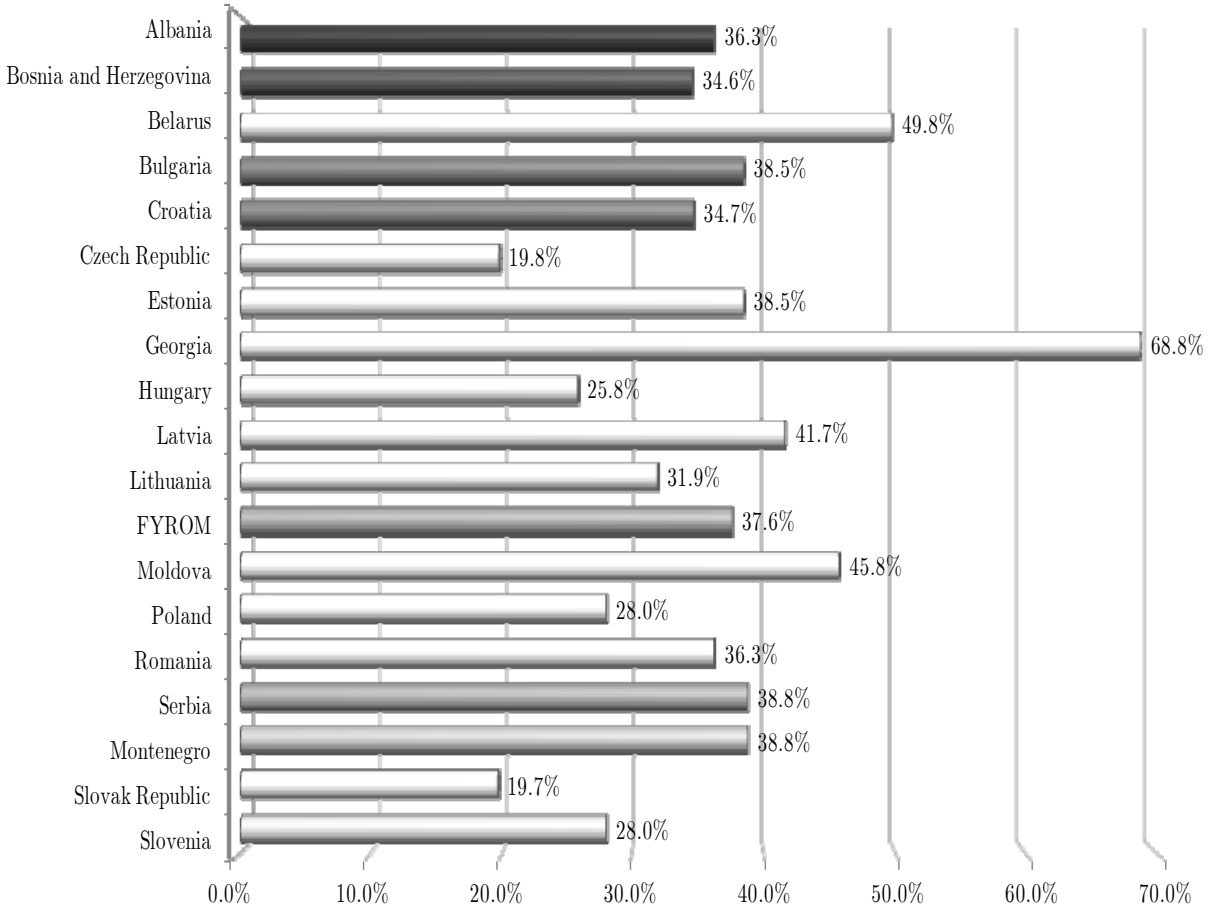
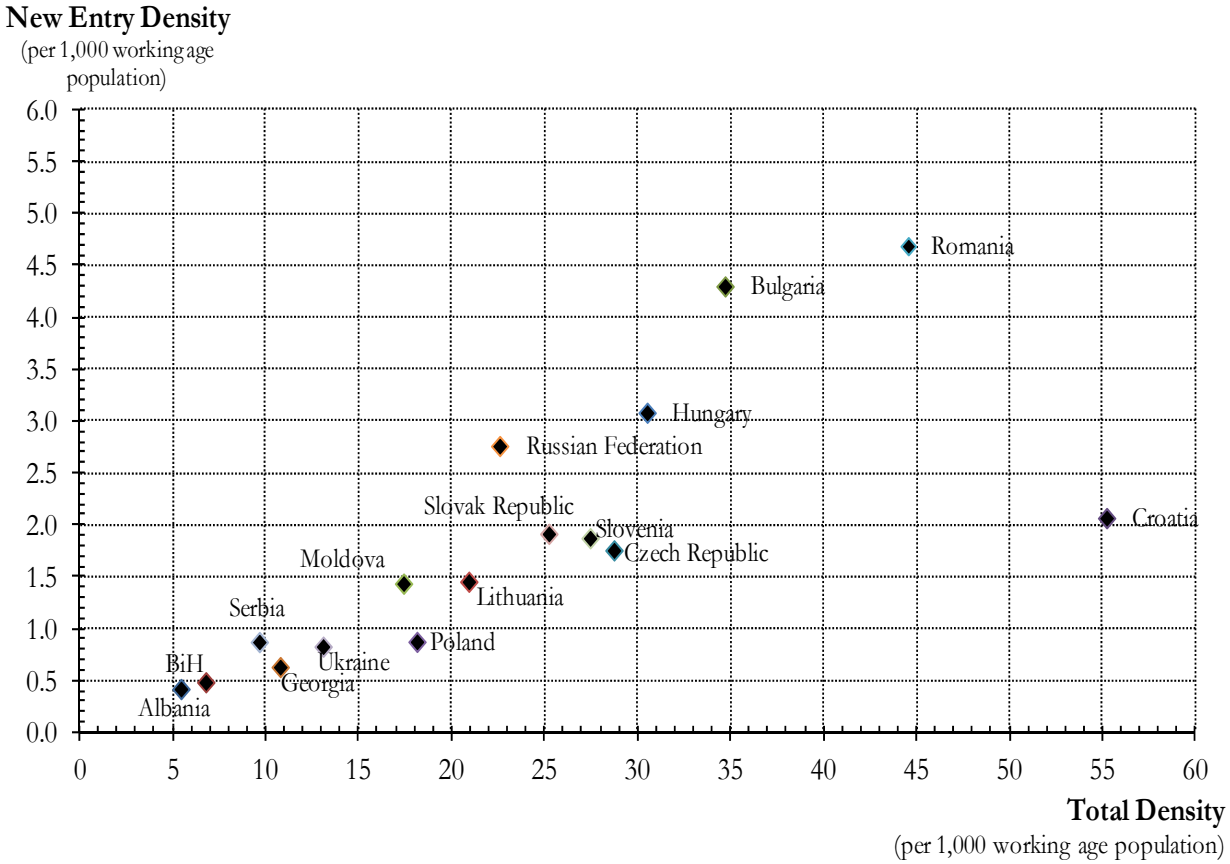
Figure 1
The size of the informal sector



Source: Schneider et al. (2010) & Schneider (2012); Figures for Serbia and Montenegro are only available for 2002/2003.

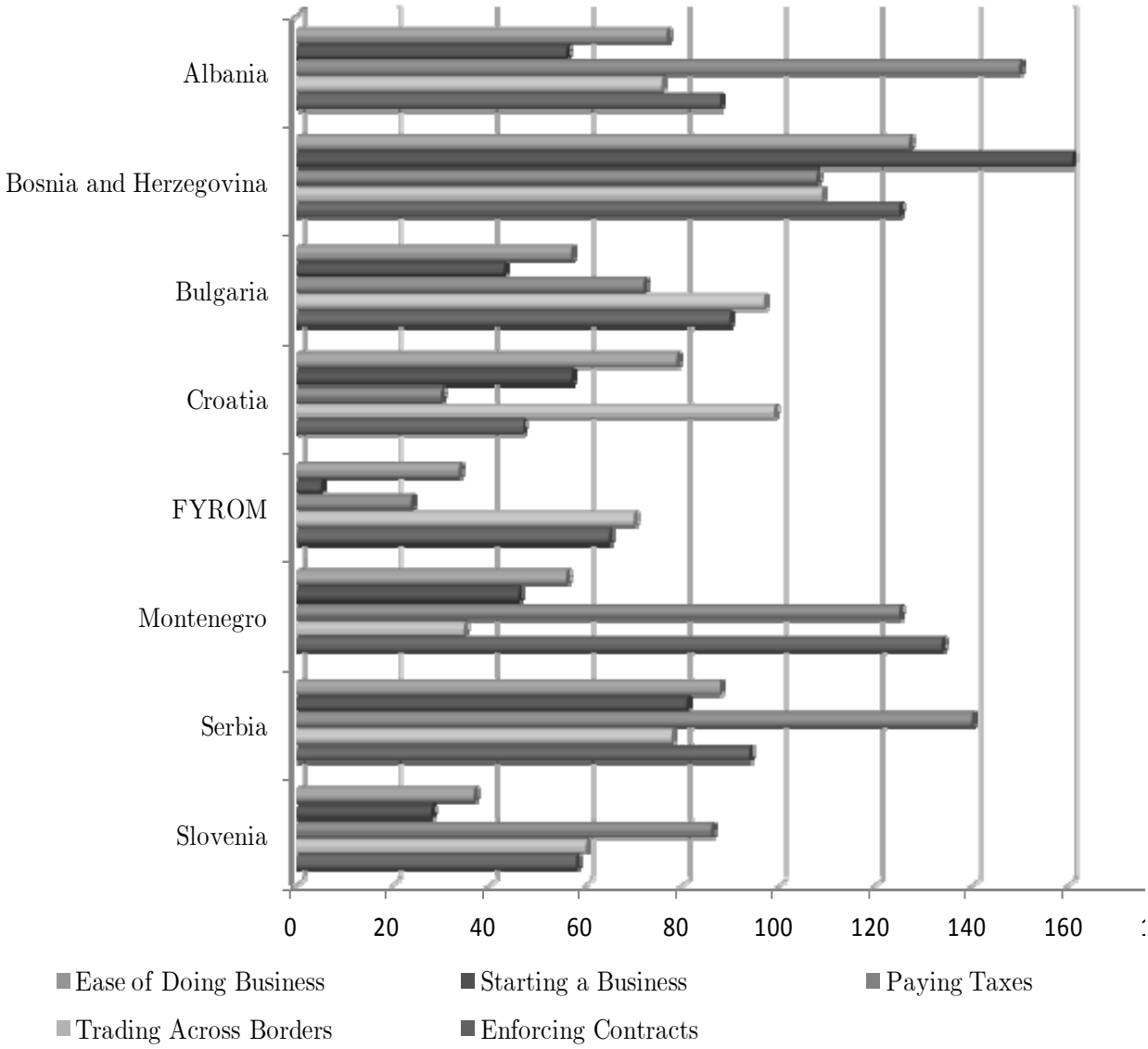
Figure 2

Total and new entry density in ECA



Source: World Bank Group 2008 Entrepreneurship Database (2002–2004 averages); Available at: http://rru.worldbank.org/businessplanet/default.aspx?pid=8

Figure 3
Selected doing business rankings



Source: World Bank Group Doing Business Indicators (2011; total of 183 countries); Available at: http://rru.worldbank.org/businessplanet/default.aspx?pid=1.:

Table 1
Sample descriptive statistics

		All years		2002		2005		2007		2009	
All countries	Total	5,756	*[100.0%]*	1,089	{18.9%}	1,300	{22.6%}	1,778	{30.9%}	1,589	{27.6%}
	Informal	325	(5.6%)	33	(3.0%)	129	(9.9%)	68	(3.8%)	95	(6.0%)
	Formal	5,431	(94.4%)	1,056	(97.0%)	1,171	(90.1%)	1,710	(96.2%)	1,494	(94.0%)
Albania	Total	702	*[12.2%]*	156	{22.2%}	191	{27.2%}	302	{43.0%}	53	{7.5%}
	Informal	50	(7.1%)	3	(1.9%)	7	(3.7%)	36	(11.9%)	4	(7.5%)
	Formal	652	(92.9%)	153	(98.1%)	184	(96.3%)	266	(88.1%)	49	(92.5%)
Serbia	Total	660	*[11.5%]*	171	{25.9%}	211	{32.0%}	-		278	{42.1%}
	Informal	55	(8.3%)	4	(2.3%)	26	(12.3%)			25	(9.0%)
	Formal	605	(91.7%)	167	(97.7%)	185	(87.7%)			253	(91.0%)
Bosnia & Herzegovina	Total	549	*[9.5%]*	127	{23.1%}	149	{27.1%}	-		273	{49.7%}
	Informal	35	(6.4%)	0	(0.0%)	14	(9.4%)			21	(7.7%)
	Formal	514	(93.6%)	127	(100.0%)	135	(90.6%)			252	(92.3%)
FYROM	Total	608	*[10.6%]*	139	{22.9%}	154	{25.3%}	-		315	{51.8%}
	Informal	47	(7.7%)	5	(3.6%)	27	(17.5%)			15	(4.8%)
	Formal	561	(92.3%)	134	(96.4%)	127	(82.5%)			300	(95.2%)
Slovenia	Total	533	*[9.3%]*	153	{28.7%}	160	{30.0%}	-		220	{41.3%}
	Informal	18	(3.4%)	3	(2.0%)	7	(4.4%)			8	(3.6%)
	Formal	515	(96.6%)	150	(98.0%)	153	(95.6%)			212	(96.4%)
Bulgaria	Total	1,659	*[28.8%]*	185	{11.2%}	246	{14.8%}	974	{58.7%}	254	{15.3%}
	Informal	84	(5.1%)	12	(6.5%)	35	(14.2%)	30	(3.1%)	7	(2.8%)
	Formal	1,575	(94.9%)	173	(93.5%)	211	(85.8%)	944	(96.9%)	247	(97.2%)
Croatia	Total	908	*[15.8%]*	145	{16.0%}	175	{19.3%}	502	{55.3%}	86	{9.5%}
	Informal	24	(2.6%)	6	(4.1%)	12	(6.9%)	2	(0.4%)	4	(4.7%)
	Formal	884	(97.4%)	139	(95.9%)	163	(93.1%)	500	(99.6%)	82	(95.3%)
Montenegro	Total	137	*[2.4%]*	13	{9.5%}	14	{10.2%}	-		110	{80.3%}
	Informal	12	(8.8%)	0	(0.0%)	1	(7.1%)			11	(10.0%)
	Formal	125	(91.2%)	13	(100.0%)	13	(92.9%)			99	(90.0%)

Notes: The data is from the EBRD-World Bank Business Environment and Enterprise Performance Survey (BEEPS) II-IV. The sample comprises of firms that started operations on or after 1984. Percentages in parentheses indicate fractions of firms in a given country-year, percentage is brackets indicate fractions of the total number of firms in all countries-years, and percentages in braces indicate fractions of a firms in all years for each country. Informal refers to informal origin and formal to no informal origin.

Table 2
Summary statistics

	(1)	(2)	(3)	(4)	t-tests	
	Pooled	Informal origin	Young inf. origin	No informal origin	(2)vs(4)	(3)vs(4)
No. of observations	5,756	325	48	5,431		
Firm characteristics						
Foreign	12.9%	10.2%	10.4%	13.0%	[-]	[-]
Firm age	10.55	11.39	4.08	10.50	[+] ***	[-] ***
SME	85.7%	91.1%	97.9%	85.3%	[+] ***	[+] **
Performance indicators						
Total sales	4,816,406	4,917,244	2,906,116	4,810,542	[+]	[-]
%3-year sales growth	31.6%	35.6%	98.3%	31.4%	[+]	[+] ***
Full-time employment	64.36	38.26	18.58	65.93	[-] **	[-]
%3-year employment growth	19.4%	24.3%	36.6%	19.1%	[+] **	[+] ***
Exporter	33.0%	38.8%	20.8%	32.7%	[+] **	[-] *
%Exports	14.4%	15.5%	5.4%	14.3%	[+]	[-] **
Total factor productivity	2.11	1.96	1.73	2.12	[-]	[-]
Informal payment indicators						
Frequency: Customs/imports	2.02	1.95	1.65	2.02	[-]	[-]
Frequency: Courts	1.97	2.01	2.00	1.97	[+]	[+]
Frequency: Taxes/tax collection	1.98	2.02	2.03	1.98	[+]	[+]
Frequency: General	2.38	2.51	2.59	2.37	[+]	[+]
# Informal payments (out of 6)	1.02	1.25	1.74	1.01	[+] **	[+] ***
# Informal payments (out of 10)	0.98	1.14	1.59	0.97	[+] *	[+] ***
Value of informal payment	50,407	61,196	27,118	49,782	[+]	[-]
% sales for informal payments	1.5%	2.0%	1.7%	1.5%	[+] **	[+]
Access to finance						
Access to finance	3.68	3.53	3.42	3.69	[-] **	[-]
Formal finance	30.9%	38.5%	17.1%	30.3%	[+] **	[-] *
Both formal & informal finance	4.5%	5.3%	2.9%	4.4%	[+]	[-]
Informal finance	9.9%	7.5%	8.6%	10.1%	[-]	[-]
No finance	54.7%	48.7%	71.4%	55.2%	[-] *	[+] *
Supply credit	8.5%	11.0%	4.9%	8.3%	[+]	[-]
Bank services: 0	3.1%	8.8%	14.6%	2.6%	[+] ***	[+] ***
Bank services: 1	28.6%	25.7%	37.5%	28.9%	[-]	[+]
Bank services: 2	35.8%	32.9%	31.3%	36.1%	[-]	[-]
Bank services: 3	32.5%	32.6%	16.7%	32.4%	[+]	[-] **
Industry						
Manufacturing	35.0%	29.5%	20.8%	35.3%	[-] **	[-] **
Electricity, gas, steam & air cond,	0.3%	0.0%	0.0%	0.3%	[-]	[-]
Water supply; sewerage, waste mng.	1.5%	1.2%	2.1%	1.5%	[-]	[+]
Wholesale & retail trade; repairs	7.3%	8.0%	6.3%	7.3%	[+]	[-]
Transportation and storage	34.3%	39.7%	43.8%	34.0%	[+] **	[+]
Accommodation and food service	5.2%	8.9%	16.7%	5.0%	[+] ***	[+] ***
Information and communication	4.9%	8.0%	2.1%	4.7%	[+] ***	[-]
Financial and insurance activities	0.6%	0.3%	0.0%	0.6%	[-]	[-]
Professional, scientific & technical	7.7%	2.8%	6.3%	8.0%	[-] ***	[-]
Arts, entertainment and recreation	1.9%	0.0%	0.0%	2.0%	[-] ***	[-]
Other industries	1.5%	1.5%	2.1%	1.5%	[+]	[+]

Notes:
* p<0.10, ** p<0.05, *** p<0.01: from t-tests of differences in averages.

Table 3
Informal origin and firm performance

	Log (Sales)	*% Sales growth*	*Log (Employees)*	*% Empl. growth*	*Exporter*	*%Exports*	*TFP*	*Access to finance*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Informal origin	-0.115	0.117***	-0.080	0.071***	0.123***	0.037**	-0.225	-0.095*
	[0.171]	[0.044]	[0.063]	[0.025]	[0.032]	[0.016]	[0.145]	[0.057]
SME	-2.263***	-0.111***	-2.671***	-0.046***	-0.187***	-0.112***	-0.313***	-0.212***
	[0.102]	[0.030]	[0.037]	[0.016]	[0.021]	[0.014]	[0.091]	[0.046]
Foreign affiliation	0.644***	0.013	0.399***	0.006	0.272***	0.176***	0.111	0.271***
	[0.111]	[0.031]	[0.042]	[0.018]	[0.023]	[0.015]	[0.103]	[0.048]
Log(firm age)	0.355***	-0.356***	0.221***	-0.115***	0.047***	-0.011	0.678***	0.038
	[0.073]	[0.023]	[0.027]	[0.013]	[0.014]	[0.008]	[0.073]	[0.031]
Countries (*Ref.: Montenegro*)								
Albania	0.778**	0.654***	0.110	-0.028	0.174***	0.076***	-0.365	-0.481***
	[0.331]	[0.104]	[0.086]	[0.043]	[0.064]	[0.018]	[0.517]	[0.114]
Serbia	0.773**	0.272***	-0.067	-0.105**	0.251***	0.022	-0.477	-0.833***
	[0.314]	[0.102]	[0.087]	[0.042]	[0.063]	[0.016]	[0.505]	[0.113]
Bosnia & Herzegovina	0.492	0.413***	-0.016	-0.106**	0.215***	0.055***	-0.358	-0.544***
	[0.328]	[0.101]	[0.088]	[0.042]	[0.064]	[0.017]	[0.510]	[0.114]
FYROM	0.279	0.432***	-0.152*	-0.108**	0.262***	0.109***	-0.305	-0.588***
	[0.323]	[0.102]	[0.088]	[0.043]	[0.063]	[0.018]	[0.511]	[0.115]
Slovenia	2.134***	0.592***	-0.178**	-0.134***	0.453***	0.133***	-0.377	-0.296**
	[0.308]	[0.100]	[0.090]	[0.043]	[0.056]	[0.019]	[0.502]	[0.116]
Bulgaria	-0.166	0.366***	-0.043	-0.165***	0.128**	0.067***	-0.639	-0.518***
	[0.315]	[0.100]	[0.085]	[0.041]	[0.059]	[0.016]	[0.506]	[0.111]
Croatia	1.501***	0.579***	-0.196**	-0.168***	0.216***	0.047***	-0.709	-0.428***
	[0.317]	[0.101]	[0.088]	[0.042]	[0.063]	[0.017]	[0.507]	[0.117]
Prediction	13.11	31.63%	2.91	19.36%	30.60%	14.42%	2.11	-
No. of observations	4,927	4,883	5,729	5,395	5,744	5,744	3,414	5,571
No. of firms	4,488	4,456	5,076	4,780	5,091	5,091	3,012	4,918
Adjusted R^2/ Pseudo R^2	0.273	0.212	0.57	0.05	0.156	0.19	0.091	0.014
F-stat/Wald χ^2	-11034.3	-5148.8	-7755.1	-2290.3	-3077.8	-504.5	-6679.3	-7970.7

Notes: Linear models, with the exception of column 5 (probit) and column 8 (ordered probit). The specification also includes 1-digit ISIC codes (11 industries), year dummies and a constant term. * p<0.10, ** p<0.05, *** p<0.01

Table 4
Robustness exercises: Matched samples and Young firms

	Log (Sales)	*% Sales growth)*	*Log (Employ.)*	*%Employee growth*	*Exporter*	*%Exports*	*TFP*	*Access to finance*
Panel A; Propensity score matching (1-5 nearest neighbours)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Informal origin	-0.158	0.115**	-0.100	0.058**	0.103***	0.032*	-0.121	-0.106
	[0.183]	[0.050]	[0.065]	[0.027]	[0.032]	[0.017]	[0.159]	[0.067]
SME	-1.939***	-0.123	-2.510***	-0.106**	-0.136*	-0.106**	-0.594**	-0.302**
	[0.433]	[0.098]	[0.103]	[0.052]	[0.069]	[0.052]	[0.283]	[0.131]
Foreign affiliation	0.642*	0.017	0.466***	0.046	0.203***	0.114***	-0.099	0.06
	[0.360]	[0.087]	[0.117]	[0.048]	[0.058]	[0.037]	[0.246]	[0.121]
Log(firm age)	0.046	-0.507***	0.226***	-0.160***	0.074**	0.019	0.598***	0.064
	[0.195]	[0.052]	[0.063]	[0.034]	[0.034]	[0.016]	[0.173]	[0.066]
No. of observations	1,222	1,210	1,476	1,381	1,478	1,478	886	1,435
Panel B: Informal origin and firm age								
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Informal origin*Young	1.016**	0.381***	0.004	0.083	-0.104	-0.076**	0.477	-0.023
	[0.428]	[0.136]	[0.157]	[0.074]	[0.071]	[0.034]	[0.341]	[0.139]
Informal origin	-0.214	0.046	-0.065	0.051*	0.144***	0.047***	-0.238	-0.089
	[0.185]	[0.049]	[0.070]	[0.026]	[0.034]	[0.018]	[0.161]	[0.064]
Young firm	-0.385***	0.402***	-0.221***	0.099***	-0.037**	0.001	-0.723***	-0.063
	[0.098]	[0.033]	[0.035]	[0.017]	[0.018]	[0.010]	[0.095]	[0.041]
SME	-2.287***	-0.094***	-2.683***	-0.040**	-0.190***	-0.110***	-0.340***	-0.213***
	[0.102]	[0.030]	[0.037]	[0.016]	[0.021]	[0.014]	[0.092]	[0.046]
Foreign affiliation	0.617***	0.036	0.382***	0.017	0.267***	0.178***	0.083	0.270***
	[0.111]	[0.031]	[0.042]	[0.018]	[0.023]	[0.015]	[0.103]	[0.048]
No. of observations	4,927	4,883	5,729	5,395	5,744	5,744	3,414	5,571
Panel C: Firm age less than 5 years								
	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
Informal origin	0.882**	0.407***	0.015	0.158**	0.024	-0.031	0.281	-0.13
	[0.369]	[0.106]	[0.140]	[0.074]	[0.076]	[0.030]	[0.301]	[0.129]
SME	-2.189***	0.112	-2.835***	0.043	-0.181***	-0.134***	-0.376	-0.227*
	[0.296]	[0.088]	[0.108]	[0.057]	[0.053]	[0.039]	[0.291]	[0.128]
Foreign affiliation	0.268	0.094	0.457***	0.052	0.273***	0.188***	0.217	0.357***
	[0.256]	[0.071]	[0.082]	[0.047]	[0.042]	[0.029]	[0.238]	[0.099]
Log(firm age)	0.845***	-0.844***	0.193*	-0.097	0.009	-0.015	1.240***	0.162
	[0.304]	[0.092]	[0.113]	[0.091]	[0.050]	[0.035]	[0.344]	[0.134]
No. of observations	761	743	979	803	982	983	537	950

Notes: The remaining specifications are identical to Table 3. * p<0.10, ** p<0.05, *** p<0.01

Table 5
Informal origin, access to finance and firm performance

	Log (Sales)	*% Sales growth)*	*Log (Employ.)*	*%Employ. growth*	*Exporter*	*%Exports*	*TFP*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Informal origin	-0.095	-0.404	-0.132	0.311	0.055	0.032	-0.481
	[0.526]	[0.328]	[0.176]	[0.998]	[0.092]	[0.047]	[0.445]
Access to finance (1-5)	0.012	-0.043**	0.019*	-0.152**	-0.005	0.001	0.033
	[0.028]	[0.020]	[0.011]	[0.063]	[0.006]	[0.003]	[0.026]
Informal origin*Access to finance	0.003	0.153*	0.013	0.160	0.017	0.001	0.085
	[0.142]	[0.083]	[0.054]	[0.262]	[0.023]	[0.013]	[0.125]
No. of observations	*4,808*	*2,864*	*5,557*	*4,241*	*5,571*	*5,571*	*3,341*
No. of firms	*4,369*	*2,729*	*4,904*	*3,843*	*4,918*	*4,918*	*2,939*
	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Informal origin	-0.502***	0.083*	-0.121	0.078***	0.155***	0.031*	-0.197
	[0.184]	[0.048]	[0.081]	[0.029]	[0.038]	[0.018]	[0.135]
Formal finance	0.421***	0.119***	0.317***	0.092***	0.062***	0.015	0.116
	[0.100]	[0.030]	[0.045]	[0.017]	[0.023]	[0.011]	[0.086]
Both formal and informal finance	0.219	0.088	0.347***	0.151***	0.092*	0.01	-0.04
	[0.182]	[0.057]	[0.103]	[0.041]	[0.051]	[0.023]	[0.127]
Informal finance	-0.092	0.114***	0.054	0.045*	0.048	0.029*	-0.185*
	[0.134]	[0.043]	[0.067]	[0.027]	[0.037]	[0.017]	[0.111]
No finance	{*Ref.*}	{*Ref.*}	{*Ref.*}	{*Ref.*}	{*Ref.*}	{*Ref.*}	{*Ref.*}
Supply credit	0.379**	0.011	0.252***	0.025	0.083**	0.040**	0.248
	[0.173]	[0.052]	[0.067]	[0.028]	[0.035]	[0.018]	[0.162]
No. of observations	*2,412*	*2,378*	*3,013*	*2,872*	*3,011*	*3,017*	*1,773*
No. of firms	*2,019*	*1,995*	*2,429*	*2,325*	*2,433*	*2,433*	*1,411*
	(15)	(16)	(17)	(18)	(19)	(20)	(21)
Informal origin	-0.141	0.122**	-0.046	0.067*	0.099**	0.017	-0.023
	[0.213]	[0.060]	[0.088]	[0.034]	[0.040]	[0.020]	[0.171]
Formal finance	0.487***	0.106***	0.303***	0.073***	0.036*	0.007	0.183**
	[0.099]	[0.030]	[0.045]	[0.017]	[0.020]	[0.011]	[0.086]
Informal origin*Formal finance	-0.840**	-0.087	-0.190	0.033	0.080	0.037	-0.428
	[0.381]	[0.096]	[0.169]	[0.058]	[0.066]	[0.038]	[0.263]
No. of observations	*2,412*	*2,378*	*3,013*	*2,872*	*3,017*	*3,017*	*1,773*
No. of firms	*2,019*	*1,995*	*2,429*	*2,325*	*2,433*	*2,433*	*1,411*
	(22)	(23)	(24)	(25)	(26)	(27)	(28)
Young informal	-0.288	0.174	-0.162	0.063	0.087	-0.025	0.199
	[0.521]	[0.136]	[0.172]	[0.078]	[0.084]	[0.030]	[0.438]
Formal finance	0.387***	0.101***	0.279***	0.077***	0.047**	0.011	0.135
	[0.097]	[0.029]	[0.044]	[0.017]	[0.019]	[0.011]	[0.082]
Young informal*Formal finance	2.477***	0.344*	0.435	0.145	0.005	0.012	0.031
	[0.794]	[0.199]	[0.433]	[0.198]	[0.205]	[0.073]	[0.769]
No. of observations	*2,412*	*2,378*	*3,013*	*2,872*	*3,017*	*3,017*	*1,773*
No. of firms	*2,019*	*1,995*	*2,429*	*2,325*	*2,433*	*2,433*	*1,411*

Notes: The remaining specifications are identical to Table 3. * p<0.10, ** p<0.05, *** p<0.01

Table 6

Informal origin, customer affiliation with financial institutions and firm performance

	Log (Sales)	*% Sales growth)*	*Log (Employ.)*	*%Employ. growth*	*Exporter*	*%Exports*	*TFP*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Informal	-0.037	0.084*	0.011	0.051*	0.122***	0.032*	-0.214
	[0.185]	[0.051]	[0.058]	[0.026]	[0.037]	[0.018]	[0.165]
No. of bank services	0.408***	0.074***	0.239***	0.064***	0.058***	0.002	0.168***
	[0.053]	[0.016]	[0.020]	[0.008]	[0.011]	[0.006]	[0.050]
No. of observations	*3,657*	*3,647*	*3,788*	*3,492*	*3,802*	*3,802*	*2,316*
No. of firms	*3,334*	*3,334*	*3,320*	*3,057*	*3,334*	*3,334*	*2,026*
	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Informal origin	-0.196	0.135	-0.127	0.029	-0.018	-0.024	-0.637**
	[0.375]	[0.115]	[0.124]	[0.054]	[0.054]	[0.031]	[0.309]
No. of bank services	0.401***	0.076***	0.232***	0.062***	0.040***	-0.001	0.146***
	[0.055]	[0.017]	[0.021]	[0.008]	[0.009]	[0.006]	[0.053]
Informal origin*No. of bank services	0.079	-0.025	0.071	0.011	0.057**	0.029*	0.217
	[0.172]	[0.050]	[0.055]	[0.026]	[0.026]	[0.015]	[0.141]
No. of observations	*3,657*	*3,647*	*3,788*	*3,492*	*3,802*	*3,802*	*2,316*
No. of firms	*3,334*	*3,334*	*3,320*	*3,057*	*3,334*	*3,334*	*2,026*
	(15)	(16)	(17)	(18)	(19)	(20)	(21)
Young informal	0.768	0.313	-0.26	0.07	0.097	-0.005	-0.29
	[0.717]	[0.247]	[0.209]	[0.107]	[0.125]	[0.055]	[0.612]
No. of bank services	0.407***	0.075***	0.237***	0.064***	0.048***	0.003	0.161***
	[0.053]	[0.016]	[0.020]	[0.008]	[0.009]	[0.006]	[0.050]
Young informal*No. of bank services	0.083	0.134*	0.131	0.142**	-0.071	-0.034	0.347
	[0.373]	[0.0766]	[0.112]	[0.057]	[0.065]	[0.028]	[0.283]
No. of observations	*3,657*	*3,647*	*3,788*	*3,492*	*3,802*	*3,802*	*2,316*
No. of firms	*3,334*	*3,334*	*3,320*	*3,057*	*3,334*	*3,334*	*2,026*

Notes: The remaining specifications are identical to Table 3. * p<0.10, ** p<0.05, *** p<0.01

Table 7
Informal origin and informal norms & payments

	General	*Taxes*	*Courts*	*Customs*	*#Inf. paym.(10)*	*#Inf. paym.(6)*	*%Sales*	*Log(Inf. paym.)*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Informal origin*Firm age≤5	0.010	-0.171	-0.244	-0.553***	0.245	0.190	0.002	-0.150
	[0.174]	[0.189]	[0.217]	[0.203]	[0.165]	[0.180]	[0.004]	[0.450]
Informal origin*Firm age>5	0.064	0.066	0.006	-0.003	0.038	-0.022	0.005*	0.493
	[0.081]	[0.086]	[0.082]	[0.082]	[0.099]	[0.102]	[0.002]	[0.303]
No informal origin	{*Ref.*}	{*Ref.*}	{*Ref.*}	{*Ref.*}	{*Ref.*}	{*Ref.*}	{*Ref.*}	{*Ref.*}
SME	0.137**	0.191***	0.190***	0.161**	0.239***	0.297***	0.005***	0.166
	[0.058]	[0.067]	[0.064]	[0.065]	[0.072]	[0.073]	[0.001]	[0.167]
Foreign	-0.009	-0.086	0.027	0.108*	-0.040	-0.039	-0.001	0.134
	[0.055]	[0.065]	[0.062]	[0.063]	[0.060]	[0.061]	[0.002]	[0.160]
Log(Firm age)	-0.009	-0.049	-0.021	-0.053	-0.03	-0.027	-0.001	-0.008
	[0.043]	[0.047]	[0.046]	[0.046]	[0.047]	[0.048]	[0.001]	[0.112]
Countries: (*Ref.: Montenegro*)								
Albania	1.040***	1.388***	1.331***	1.201***	1.321***	1.322***	0.021***	2.029***
	[0.127]	[0.135]	[0.157]	[0.132]	[0.229]	[0.229]	[0.006]	[0.477]
Serbia	0.700***	0.873***	1.128***	0.667***	0.886***	0.896***	0.006	1.793***
	[0.121]	[0.129]	[0.150]	[0.126]	[0.232]	[0.233]	[0.006]	[0.487]
Bosnia & Herzegovina	0.538***	0.872***	1.108***	0.737***	0.887***	0.878***	-0.001	1.703***
	[0.121]	[0.129]	[0.150]	[0.125]	[0.233]	[0.232]	[0.006]	[0.499]
FYROM	0.386***	0.307**	0.866***	0.295**	0.539**	0.542**	0.001	0.945**
	[0.122]	[0.131]	[0.150]	[0.128]	[0.235]	[0.235]	[0.006]	[0.478]
Slovenia	-0.338***	-0.470***	-0.146	-0.563***	0.003	0.005	-0.004	0.836*
	[0.129]	[0.142]	[0.158]	[0.136]	[0.250]	[0.251]	[0.006]	[0.471]
Bulgaria	0.515***	0.601***	0.867***	0.528***	0.878***	0.873***	0.007	2.445***
	[0.120]	[0.127]	[0.149]	[0.125]	[0.230]	[0.230]	[0.006]	[0.489]
Croatia	0.156	0.098	0.429***	0.009	0.373	0.343	0.001	2.028***
	[0.130]	[0.139]	[0.159]	[0.138]	[0.240]	[0.241]	[0.006]	[0.481]
Years (*Ref.: 2002*)								
Year 2005	-0.054	-0.064	0.081	-0.148***	-0.086*	-0.096**	-0.006***	-0.056
	[0.046]	[0.050]	[0.052]	[0.051]	[0.044]	[0.044]	[0.001]	[0.038]
Year 2007	-0.143	-0.206	-0.093	-0.441	-1.794***	-2.008***	0.001	-0.097
	[0.337]	[0.397]	[0.391]	[0.384]	[0.068]	[0.069]	[0.002]	[0.131]
Year 2009	-0.239***	-0.189***	0.016	-0.293***	-1.017***	-1.200***	0.003	3.840***
	[0.050]	[0.057]	[0.056]	[0.056]	[0.067]	[0.069]	[0.002]	[0.211]
No. of observations	3,829	3,731	3,670	3,666	5,252	5,148	4,371	5,744
No. of clusters	3,178	3,078	3,019	3,018	4,599	4,495	3,741	5,091
Pseudo/Adjusted R^2	0.045	0.077	0.054	0.072	-	-	0.066	0.129
Wald χ^2 / F-statistic	448.91***	616.08***	1027.99***	589.99***	1701.66***	2048.67***	14.47***	16.81***

Notes: * p<0.10, ** p<0.05, *** p<0.01. The models estimated are ordered probit in columns 1-4, poisson regressions in columns 5-6, and linear regressions in columns 7-8.

Table A1
Total factor productivity

Dev. Var.: Log(Sales)	
Log(Firm age)	-0.608***
	[0.233]
Log(Capital)	0.285***
	[0.041]
Log(Labour)	0.502***
	[0.027]
Log(Raw materials)	0.137***
	[0.023]
Albania	1.003***
	[0.387]
Serbia	1.606***
	[0.314]
Bosnia & Herzegovina	1.495***
	[0.416]
FYROM	1.656***
	[0.304]
Slovenia	1.796***
	[0.218]
Bulgaria	1.733***
	[0.330]
Croatia	1.848***
	[0.284]
Montenegro	{*Ref.*}
Year 2005	0.142***
	[0.044]
Year 2009	-0.079
	[0.081]
No. of Observations	3,963
No. of Individuals	3,626

Notes: * p<0.10, ** p<0.05, *** p<0.01. The total cost of electricity is used as a proxy variable in the first stages. The results presented are robust to the use second-degree polynomial expansion (available upon request).

Table A2
Country summary statistics

	(1) Albania	(2) Serbia	(3) BiH	(4) FYROM	(5) Slovenia	(6) Bulgaria	(7) Croatia	(8) Montenegro
Firm characteristics								
Informal origin	7.1%	8.3%	6.4%	7.7%	3.4%	5.1%	2.6%	8.8%
Foreign	14.8%	14.7%	10.8%	13.2%	13.0%	13.1%	11.9%	5.1%
Firm age	8.18	10.89	9.94	10.54	12.21	10.46	11.70	10.55
SME	90.6%	83.8%	88.9%	89.3%	83.9%	82.6%	85.0%	88.9%
Performance indicators								
Total sales (thousands)	11,125	2,798	1,726	1,526	5,714	2,449	8,927	2,387
%3-year sales growth	47.3%	18.9%	37.5%	45.0%	29.6%	24.1%	33.0%	22.9%
Full-time employment	51.22	86.41	44.20	43.95	72.31	72.89	67.67	39.14
%3-year employment growth	30.1%	20.7%	22.1%	21.6%	16.1%	16.3%	13.3%	34.3%
Exporter	27.8%	34.1%	28.6%	32.9%	52.2%	30.6%	35.4%	13.9%
%Exports	14.7%	8.2%	10.5%	16.4%	19.4%	17.1%	13.5%	3.9%
Total factor productivity	2.05	2.05	1.99	2.22	2.07	2.16	2.09	2.49
Frequency of unofficial payments/gifts expected to deal with:								
Customs/imports	3.13	2.22	2.35	1.84	1.21	2.09	1.59	1.51
Courts	2.62	2.30	2.30	2.02	1.22	1.99	1.59	1.32
Taxes/tax collection	3.10	2.30	2.31	1.70	1.22	1.98	1.57	1.46
In general	3.25	2.69	2.47	2.30	1.60	2.47	2.10	1.83
# Informal payments (out of 6)	1.76	1.40	1.35	0.97	0.61	0.83	0.61	0.45
# Informal payments (out of 10)	1.70	1.37	1.28	0.92	0.60	0.78	0.58	0.41
Value of informal payment	3.1%	1.5%	0.8%	1.0%	0.5%	1.7%	0.9%	1.0%
% sales for informal payments (thous.)	338.3	28.6	47.2	29.3	20.7	72.3	43.2	18.9
Access to finance								
Formal finance	22.1%	24.4%	42.9%	30.2%	41.7%	23.4%	29.8%	52.9%
Both formal and informal finance	0.6%	3.0%	2.7%	3.1%	5.0%	6.5%	11.1%	4.7%
Informal finance	9.1%	6.7%	8.8%	10.7%	11.5%	11.8%	12.4%	5.9%
No finance	68.3%	65.9%	45.6%	56.0%	41.9%	58.4%	46.7%	36.5%
Supply credit	4.4%	10.1%	23.2%	5.4%	4.7%	5.3%	10.0%	24.7%
Bank services: 0	2.5%	3.1%	3.8%	10.8%	0.0%	1.5%	1.7%	12.5%
Bank services: 1	12.0%	19.1%	21.5%	32.1%	10.1%	46.8%	15.5%	22.3%
Bank services: 2	41.3%	36.2%	36.4%	43.3%	40.4%	26.8%	43.2%	43.8%
Bank services: 3	44.3%	41.6%	38.3%	13.9%	49.5%	24.9%	39.6%	21.4%
Industry								
Manufacturing	33.6%	24.6%	27.7%	22.2%	26.6%	45.5%	44.6%	20.4%
Electricity, gas, steam & air condition	0.0%	0.5%	0.0%	0.0%	0.2%	0.0%	1.0%	1.5%
Water supply; sewerage, waste mng.	4.0%	1.2%	2.7%	2.0%	0.9%	0.1%	1.0%	3.7%
Wholesale and retail trade; repairs	10.3%	5.9%	7.1%	7.4%	13.5%	3.7%	9.6%	5.1%
Transportation and storage	33.2%	42.4%	41.4%	42.1%	29.3%	28.6%	30.6%	51.1%
Accommodation & food service activ.	8.1%	4.7%	7.8%	6.6%	5.3%	3.9%	2.5%	8.0%
Information and communication	5.1%	7.4%	3.3%	5.8%	6.4%	4.1%	3.5%	5.1%
Financial and insurance activities	1.1%	0.8%	0.7%	0.8%	0.8%	0.4%	0.3%	0.0%
Professional, scientific and technical	2.4%	8.3%	2.2%	4.0%	13.1%	12.3%	6.1%	2.9%
Arts, entertainment and recreation	2.1%	3.9%	2.6%	1.6%	2.4%	1.5%	0.7%	0.7%
Other industries	0.0%	0.3%	4.6%	7.6%	1.5%	0.0%	0.1%	1.5%

Table A3
Pairwise correlation matrix

	Informal	Young inf.	Firm age	SME	Foreign	Sales	%sales growth	Full-time employment	%employm. growth	%exports	TFP	In general	Customs	Courts	Taxes	#informal payments	Value of informal	Formal finance	Both finance	Informal finance	Bank services
Informal	1.00																				
Young informal	0.37*	1.00																			
Firm age	0.04*	-0.12*	1.00																		
SME	0.03*	0.03*	-0.07*	1.00																	
Foreign	-0.01	0.00	-0.11*	-0.21*	1.00																
Sales	0.01	-0.01	0.06*	-0.39*	0.14*	1.00															
%sales growth	0.01	0.07*	-0.07*	-0.05*	0.02	0.23*	1.00														
Full-time employment	-0.02*	-0.01	0.04*	-0.47*	0.13*	0.31*	0.06*	1.00													
%employment growth	0.03*	0.03*	-0.12*	-0.02	0.02*	0.05*	0.24*	0.02	1.00												
Exporter	0.02*	-0.02	0.07*	-0.20*	0.19*	0.09*	0.03*	0.10*	0.02												
%exports	0.01	-0.02*	0.00	-0.21*	0.23*	0.06*	0.03*	0.09*	-0.01	1.00											
TFP	-0.02	-0.01	0.21*	-0.07*	0.01	0.29*	0.26*	0.06*	0.05*	0.05*	1.00										
In general	0.02	0.01	-0.08*	0.05*	0.00	-0.08*	-0.05*	-0.04*	0.03*	-0.04*	-0.02	1.00									
Customs	-0.01	-0.02	-0.11*	0.04*	0.03	-0.08*	-0.04*	-0.02	0.05*	-0.03*	-0.05*	0.51*	1.00								
Courts	0.00	0.00	-0.05*	0.05*	0.00	-0.08*	-0.02	-0.03*	0.02	-0.06*	-0.03	0.50*	0.71*	1.00							
Taxes	0.00	0.00	-0.09*	0.06*	-0.02	-0.10*	-0.03*	-0.04*	0.01	-0.07*	-0.06*	0.52*	0.70*	0.72*	1.00						
#informal paym. (out of 10)	0.03*	0.04*	-0.14*	0.09*	0.00	-0.11*	-0.15*	-0.04*	0.01	-0.08*	-0.10*	0.43*	0.45*	0.42*	0.49*						
#informal paym. (out of 6)	0.02	0.03*	-0.15*	0.09*	0.00	-0.13*	-0.17*	-0.04*	0.01	-0.08*	-0.11*	0.42*	0.45*	0.42*	0.50*	1.00					
Value of informal payment	0.01	0.00	-0.07*	0.02	0.00	0.02	-0.03	-0.01	0.03	-0.02	-0.02	0.20*	0.15*	0.16*	0.18*	0.07*	1.00				
%Informal payments/sales	0.03*	0.00	-0.04*	0.06*	0.00	0.03*	0.04*	-0.04*	0.06*	-0.01	-0.01	0.31*	0.19*	0.18*	0.19*	0.20*	0.04				
Formal finance	0.04*	-0.03	0.16*	-0.08*	-0.07*	0.09*	0.16*	0.04*	0.08*	0.06*	0.11*	-0.06*	-0.03*	-0.02	-0.03*	-0.11*	0.05	1.00			
Both formal & informal fin.	0.01	0.00	-0.01	-0.01	0.01	0.00	-0.03	0.00	0.03*	0.01	-0.02	0.01	-0.02	-0.02	0.00	0.02	-0.04	-0.14*	1.00		
Informal finance	-0.02	0.00	-0.08*	0.00	-0.05*	-0.03	-0.04*	0.00	0.00	0.00	-0.09*	0.01	0.01	0.00	0.00	0.07*	0.00	-0.22*	-0.07*	1.00	
No finance	-0.03	0.03*	-0.09*	0.08*	0.09*	-0.07*	-0.11*	-0.04*	-0.10*	-0.06*	-0.03	0.03*	0.04*	0.03*	0.03	0.04*	-0.03	-0.73*	-0.23*	-0.36*	
# bank services (0-3)	-0.02	-0.06*	0.13*	-0.11*	-0.06*	0.19*	0.10*	0.07*	0.12*	0.00	0.07*	0.00	-0.01	-0.04*	-0.01	-0.03*	0.00	0.38*	0.03	-0.06*	1.00

Notes: A star indicates significance at the 5% level.