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EVALUATING THE IMPACT OF INFORMAL SECTOR COMPETITION ON FIRM PERFORMANCE: SOME LESSONS FROM SOUTH-EAST EUROPE

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A widespread assumption is that competition from the informal sector has a negative impact on the firm performance of legitimate enterprises. This is because of the unfair competition they face from such enterprises in the informal sector. The aim of this paper is to provide an evidence-based evaluation of whether this is the case based on an analysis of the relationship between the firm performance of enterprises and their perception of the prevalence of informal sector competition. To do so, data is reported from a representative sample of 1,430 enterprises in Bulgaria, Croatia and FYR Macedonia. The finding is that enterprises asserting that their competitors participate in the informal economy have significantly lower real annual sales growth rates compared with those who assert that their competitors do not participate in the informal economy. The theoretical and policy implications are then discussed.

Keywords: Entrepreneurship; informal sector; firm performance; South-East Europe.

1. Introduction

Do enterprises whose competitors participate in the informal sector suffer from lower levels of firm performance? In recent years, a new sub-discipline of entrepreneurship scholarship has emerged which studies enterprises and entrepreneurs operating in the informal sector, by which is meant enterprises and entrepreneurs who do not register with, and/or declare some or all production and/or sales to, the authorities for tax, benefit and/or labor law purposes when they should do so (Chepurenko, 2018; Karki and Xheneti, 2018; Ketchen et al., 2014; Khan, 2017; Linares, 2018; Ram et al., 2017; Siqueira et al., 2016; Williams and Shahid, 2015; Williams et al., 2013, 2015; Williams et al., 2017). A cursory glance at this literature reveals two major rationales for studying informal sector enterprise and entrepreneurship. On the one hand, it is claimed that over one half of all enterprises globally operate on an unregistered basis (Acs et al., 2013), and an even higher proportion if the uncalculated number of formal enterprises under-reporting sales is included

(Williams, 2018). Therefore, to ignore entrepreneurship in the informal sector is to disregard the majority of entrepreneurship across the globe. On the other hand, it is asserted that these informal sector enterprises represent unfair competition for formal enterprises and have a deleterious impact on the firm performance of formal enterprises (Leal Ordóñez, 2014; Lewis, 2004; Webb et al., 2009, 2013; Williams, 2018). However, whether this is the case has not been evaluated to date. Consequently, the aim of this paper is to provide an evidence-based evaluation of whether firms witnessing informal sector competition have lower levels of firm performance. This paper fills this lacuna by reporting 1,430 face-to-face interviews conducted with a representative sample of entrepreneurs in Bulgaria, Croatia and FYR Macedonia.

This paper advances understanding of informal entrepreneurship in three ways. Empirically, the widespread a priori assumption that enterprises witnessing competition from the informal sector have lower levels of firm performance is evaluated. This will provide evidence that enterprises reporting that their competitors participate in the informal economy have significantly lower levels of real annual sales growth rates than those stating their competitors do not engage in the informal economy. Theoretically, this significant positive association between informal sector competition and firm performance provides validation for the thesis that the impact of informal sector competitors on firm performance is negative. Finally, and from a policy perspective, this provides evidence that action is required by policy makers to tackle the significant negative impact of the informal sector competitors on the formal sector business environment.

To commence, the next section frames the contributions of this paper in relation to the extensive body of entrepreneurship scholarship by briefly outlining the burgeoning literature on informal sector entrepreneurship and more particularly the relationship between informal entrepreneurship and firm performance. Revealing the widespread existence of an assertion that enterprises whose competitors participate in the informal economy suffer from lower levels of firm performance, but a marked lack of empirical evidence that this is the case, the third section introduces the data, namely a 2015 survey of a representative sample of 1,430 enterprises in Bulgaria, Croatia and FYR Macedonia. In the fourth section, the results are presented. Finding evidence that enterprises who report their competitors participate in the informal sector suffer lower levels of firm performance measured in terms of real annual sales growth, the fifth and final section discusses the theoretical and policy implications along with the limitations of this study and future research required.

2. Informal Sector Competition and Firm Performance

For many decades during the twentieth century, entrepreneurs participating in the informal sector were not considered worthy of scholarly attention. A modernization theory dominated the literature. This viewed entrepreneurship in the informal sector as unimportant because modernization and economic development meant informal entrepreneurship was disappearing. Its persistence signaled “underdevelopment” and “backwardness” (Lewis, 1959; Geertz, 1963; Gilbert, 1998). However, in recent decades,

the informal sector in general, and informal sector entrepreneurship more particularly, has been found to be extensive and persistent (Schneider and Williams, 2013; ILO, 2013; Williams, 2015a, b, 2018). Indeed, over one half of all enterprises globally have been shown to operate on an unregistered basis (Acs et al., 2013) and two-thirds of businesses in developing countries have been revealed to be unregistered at startup (Autio and Fu, 2015). This recognition of the extensiveness of informal sector entrepreneurship has resulted in the emergence of a new sub-discipline of entrepreneurship scholarship focused on entrepreneurship in the informal sector and the emergence of new theorizations of informal entrepreneurship that seek to explain its persistence.

First, some scholars have simply sought to update conventional modernization theory (La Porta and Shleifer, 2008, 2014). This scholarship recognizes the extensiveness of informality but nonetheless continues to depict the informal sector as separate from the formal sector, and to view informal entrepreneurs as typically composed of uneducated people running small unproductive enterprises in separate "bottom of the pyramid" markets where they produce low-quality products for low-income consumers using little capital and adding little value (La Porta and Shleifer, 2014). A second group of scholars adopting a structuralist perspective recognize that the formal and informal sectors are not disconnected and posit that the persistence and growth of informal sector entrepreneurship is a direct by-product of a deregulated open world economy. Outsourcing and subcontracting by formal firms to the informal sector to reduce production costs display how informal sector enterprise has become an inherent component of contemporary capitalism (Castells and Portes, 1989; Davis, 2006; Meagher, 2010; Slavnic, 2010; Taiwo, 2013).

Both the modernization and structuralist perspectives hold in common a belief that economies are losing "natural" competitiveness because productive formal enterprises suffer unfair competition from unproductive informal enterprises (Leal Ordóñez, 2014; Lewis, 2004). Moreover, governments are perceived to be losing regulatory control over work conditions (ILO, 2014) and tax revenue (Williams, 2014), and customers losing legal recourse and certainty that health and safety regulations have been followed (Williams and Martinez, 2014).

Furthermore, in both perspectives, unfair competition from the informal sector is viewed as having a negative impact on the firm performance of formal enterprises (Farrell, 2004; ILO, 2007; Palmer, 2008). First, modernization theory views informal sector competition as hugely inefficient compared with formal enterprises, but because of evading taxes, social insurance contributions, and health and safety legislation (for example), as able to often out-compete formal sector entrepreneurs on price (La Porta and Shleifer, 2008, 2014). Second, the structuralist approach similarly depicts informal sector competitors as low-productivity enterprises operated by necessity-driven entrepreneurs, requiring low levels of start-up capital. However, these entrepreneurs have cost advantages gained by evading taxes and regulations, which enable them to more than offset their low productivity and small scale (Farrell, 2004; Palmer, 2008).

However, there has been little, if any, empirical evidence until now that informal sector competition reduces the firm performance of legitimate enterprises. Much of the literature

on firm performance has only sought to examine the poor performance of informal sector enterprises, namely their lower productivity. The seminal study in this regard is by La Porta and Shleifer (2008) who find that "productivity is much higher in small formal firms than in informal firms, and it rises rapidly with the size of formal firms." This conclusion is reached by analyzing World Bank Informal Surveys in thirteen countries and Micro-Enterprise Surveys in fourteen countries (nineteen in Africa, six in Asia and two in Latin America). The average Informal Survey comprised 31 registered and 192 unregistered firms, and the average Micro-Enterprise Survey comprised 137 registered and 77 unregistered enterprises (i.e., the total sample was 2,321 registered and 3,574 unregistered enterprises). The non-representative sampling strategy in each country was that "World Bank contractors identified neighborhoods perceived to have a large number of informal firms" (La Porta and Shleifer, 2008). Based on this small unrepresentative sample, statistically significant differences were found in the performance of registered and unregistered enterprises in ten of the 25 countries on value added per employee at the 0.1 level (and four countries at the 0.01 level), seventeen of the 26 countries on sales per employee at the 0.1 level (and twelve at the 0.01 level), and in eighteen of the 26 countries on output per employee at the 0.1 level (twelve at the 0.01 level). Hence, significant variations in firm performance are far from universal. Indeed, unregistered enterprises outperformed registered enterprises in six of the 25 countries on value added per employee, three of the 26 countries on sales per employee and four of the 26 on output per employee (see La Porta and Shleifer, 2008: Tables 13 and 14). More importantly, the authors explicitly state that the overall productivity gap disappears and "unregistered firms are not unusually unproductive once we take into account their expenditure on inputs, the human capital of their top managers, and their small size" (La Porta and Shleifer, 2008).

Similar evidence, albeit weak, exists in the few other studies of this poorer performance thesis (Fajnzylber et al., 2009; Farrell, 2004; McKinsey Global Institute, 2003). For example, although Fajnzylber et al. (2009) claim that Mexican firms paying taxes exhibit between 15-60 percent higher "productivity" levels, their measure of productivity is profit levels and self-employment income and they do not control for the full range of firm-level determinants influencing firm productivity and performance.

This poorer performance thesis has been similarly found in relation to formal enterprises starting-up unregistered compared with enterprises registered from the outset of operations. A study of World Bank survey data on 355 unregistered startups across seven Latin American countries (104 in Colombia, 72 in Argentina, 72 in Bolivia, 66 in Mexico 20 in Peru, twelve in Uruguay and nine in Panama) by Perry et al. (2007) find that unregistered startups "at least initially, exhibit on average, much lower levels of output per worker, after controlling for firm size, time in business, sector and region." However, this is a small sample, the productivity gap is statistically significant in only four of the seven countries studied and the headline average national figure of 29 percent lower productivity for unregistered startups is heavily skewed by the Peru figure where the productivity gap is over 50 percent, is not statistically significant, and only 20 unregistered startups were surveyed. Therefore, there is a strong consensus but weak evidence-base. More in-depth

analysis has recently occurred using more extensive datasets. Examining the firm performance of unregistered startups, various subsequent studies of both individual countries (e.g., India, South Africa) and cross-nationally have revealed that non-registration at startup leads to higher levels of subsequent firm performance (Williams and Kedir, 2016, 2017a, b, 2018a, b, c,). This is asserted to be because unregistered enterprises that initially avoid the cost of registration and focus their resources on overcoming other liabilities of newness, lay a stronger foundation for subsequent growth (Williams et al., 2017).

Therefore, there is some literature on how informal sector enterprises display lower levels of performance. However, when looking at whether enterprises whose competitors participate in the informal sector suffer from lower levels of firm performance, there has been little, if any, evidence produced until now to show that this is the case. Yet, despite this, such a belief is widely held that enterprises and entrepreneurs whose competitors engage in the informal sector witness lower levels of firm performance (Leal Ordóñez, 2014; Lewis, 2004; Webb et al., 2009, 2013; Williams, 2018).

To test this hypothesis that enterprises whose competitors participate in the informal sector suffer from lower levels of firm performance than those whose competitors do not, it is necessary to on the one hand, identify the different means by which competitors may engage in the informal sector and on the other hand, to detail how firm performance can be measured. On the former issue of the different means by which business competitors may engage in the informal sector, the wider literature on the informal sector identifies at least four ways in which enterprises engage in the informal sector. First, enterprises can employ unregistered employees. This is an employment relationship that is not registered with the authorities when it should be registered. Such employees often do not have written contracts or terms of employment and their remuneration is most probably undeclared in nature (Williams, 2018). Second, enterprises can hide or not pay all or some of their taxes, duties and/or excises (Williams, 2006). Third, enterprises can illicitly export or import goods, such as using false documentation or no documentation and finally, enterprises can engage in value-added tax (VAT) fraud. On the issue of measuring firm performance, meanwhile, a common measure used is the annual growth in sales (Williams et al., 2017). Therefore, the following hypothesis can be tested:

Firm performance hypothesis (H1): Enterprises whose competitors always, or in most cases, participate in the informal sector suffer from lower levels of annual sales growth than those whose competitors never do so.

H1a: Enterprises whose competitors hire workers without contract always, or in most cases, suffer from lower levels of annual sales growth than those whose competitors never do so.

H1b: Enterprises whose competitors always, or in most cases, do not pay their full taxes owed suffer from lower levels of annual sales growth than those whose competitors never do so.

H1c: Enterprises whose competitors always, or in most cases, engage in the illicit exporting or importing of goods suffer from lower levels of annual sales growth than those whose competitors do not.

H1d: Enterprises whose competitors always, or in most cases, engage in VAT fraud suffer from lower levels of annual sales growth than those whose competitors never engage in VAT fraud.

3. Data and Variables

3.1. Data

To evaluate these hypotheses on the impact of informal sector competition on firm performance, data is reported from a representative survey of entrepreneurs conducted in 2015 in Bulgaria, Croatia and FYR Macedonia, which are countries with some of largest informal economies in Europe (Medina and Schneider, 2018; Stefanov et al., 2017a, b, c; Williams and Franic, 2015, 2016). The sampling methodology ensured that the samples are proportionate to the universe in each country with respect to firm size, region and sector. The owners or managers of a representative sample of 456 enterprises were surveyed in Bulgaria, 521 enterprises in Croatia and 453 enterprises in FYR of Macedonia.

Considering this is a sensitive topic, a rapport had to be established with the interviewees before asking any sensitive questions. Consequently, the interview schedule commenced with non-sensitive questions about their satisfaction with the business environment, followed by questions on the acceptability of various non-compliant behaviors. Adopting a gradual approach, it was only after these non-sensitive topics that questions were posed on whether they consider themselves affected by businesses using informal practices. Interviewers were asked to rate the reliability of the interviews. Reviewing the responses, interviewers reported excellent or fair cooperation in 94 percent

of the interviews with entrepreneurs. Cooperation was bad, or the interviewer did not assess the reliability of the interviews in only one percent of interviews.

3.2. Variables

To evaluate the hypotheses, linear regression analysis has been used here. The dependent variable is real annual sales growth (%). This measures the real annualized growth in sales expressed as a percentage. Real annual sales growth is the change in sales reported in the current fiscal year from a previous period (three years ago).

Meanwhile, the key independent variables used to evaluate the four hypotheses respectively, are the following:

- Hiring a worker without contract: a categorical variable based on the question "How often would you say the following practices occur within your direct competitor companies/firms? Hiring a worker without a contract." 1=never, 2=sometimes, 3=in most cases/always
- Tax evasion: a categorical variable based on the question "How often would you say the following practices occur within your direct competitor companies/firms? Hiding/not paying taxes, duties and/or excises." 1=never, 2=sometimes, 3=in most cases/always
- Illicit exports/imports of goods: a categorical variable based on the question "How often would you say the following practices occur within your direct competitor companies/firms? Illicit exporting/importing of goods (false documentation/no documentation)." 1=never, 2=sometimes, 3=in most cases/always
- VAT fraud: a categorical variable based on the question "How often would you say the following practices occur within your direct competitor companies/firms? VAT fraud." 1=never, 2=sometimes, 3=in most cases/always

A series of further variables derived from previous studies analyzing the likelihood of participation in the informal economy (Ali and Najman, 2018; Hudson et al., 2012; Putniņš and Sauka, 2017; Putniņš et al., 2018; Williams and Horodnic, 2017a, b) are used as control variables as detailed below:

- Sector: A categorical variable describing the main activity of the company: 1 = agriculture, 2 = hotels and restaurants, 3 = services, 4 = construction, 5 = transport and communications, 6 = trade, 7 = retail, 8 = industry, 9 = health, 10 = other.
- Number of employees: A categorical variable describing the total number of currently employed people in the observed company (excluding owners and partners): 1 = sole proprietor's and micro (0-9 employees), 2 = small (10-49 employees), 3 = medium and large (50+ employees).
- Legal Status: A categorical variable describing the legal status of observed company: 1 = sole proprietorship, 2 = private limited company, limited by shares (LTD.), 3 = public Ltd Company (PLC), 4 = other.
- Firm Age: A categorical variable showing how many years has the observed company been trading (this includes under all ownerships and all legal statuses): 1 = less than 5 years, 2 = 6-10 years, 3 = 11-20 years, 4 = more than 20 years.
- Country: A categorical variable value 1 for FYR of Macedonia, value 2 for Bulgaria and value 3 for Croatia.

For the descriptive analysis, the crude data for each variable is reported to provide an accurate description and to minimize bias that would occur if entrepreneurs who did not respond to all questions included in the analysis but did provide answers to some of the questions were excluded. However, only respondents providing responses to all questions included in the analysis are included in the linear regression analysis because of the technical requirements of this type of analysis. Answers of "don't know" and "refusal" were eliminated in all estimations. Accordingly, a linear regression model has been used without multiple imputations.

4. Findings

To evaluate the impact of informal sector competition on firm performance, Table 1 reports the results of the linear regression analysis of the responses of 1,430 entrepreneurs interviewed in Bulgaria, Croatia and FYR Macedonia. Model 1 reports the results purely for the independent control variables to evaluate whether firm performance in terms of real annual sales growth varies by sector, firm size, firm age, legal status and country. Meanwhile, models 2-5 add each of the key independent variables on informal sector competition. Model 2 adds whether it is common for informal competitors to hire a worker without contract, model 3 whether it is common for informal competitors to engage in tax evasion, model 4 the illicit exporting or importing of goods and model 5 for VAT fraud.

Starting with whether firm performance in terms of real annual sales growth varies by sector, firm size, firm age, legal status and country, the finding is that firm performance does not significantly vary by sector, firm size or legal status. However, firm performance is significantly associated with firm age and country. Younger firms less than five years old have significantly higher levels of real annual sales growth than older firms. This is perhaps not surprising when one considers that many of these ventures are in their initial growth stage (Williams et al., 2017). It is also the case that firm performance is significantly higher in Bulgaria than in FYR Macedonia.

To evaluate the hypothesis that enterprises whose competitors always, or in most cases, participate in the informal sector suffer from lower levels of annual sales growth than those whose competitors never do so, model 2 reveals that those whose informal competitors always, or in most cases, hire workers without contract are not significantly more likely to suffer from lower levels of annual sales growth than those whose competitors never do so (not confirming H1a). However, model 3 displays that enterprises whose competitors always, or in most cases, do not pay their full taxes owed are significantly more likely to suffer from lower levels of annual sales growth than those whose competitors never do so (confirming H1b). Similarly, as model 4 displays, enterprises whose competitors always, or in most cases, engage in the illicit exporting or importing of goods are significantly more likely to suffer from lower levels of annual sales growth than those whose competitors do not (confirming H1c) and enterprises whose competitors always or in most cases engage in VAT fraud suffer from lower levels of annual sales growth than those whose competitors never engage in VAT fraud (confirming H1d).

Table 1. Linear regression, dependent variable: Real annual sales growth

	Model 1	Model 2	Model 3
	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
Sector (RC: Construction)			
Agriculture	1.568 (5.313)	0.273 (6.054)	-2.030 (6.681)
Hotels and restaurants	2.071 (5.603)	3.197 (5.960)	1.893 (6.220)
Services	1.560 (4.814)	0.525 (5.205)	2.789 (5.297)
Transport and communications	0.259 (4.886)	2.941 (5.485)	6.196 (5.629)
Trade	-0.569 (3.936)	-0.131 (4.216)	1.606 (4.356)
Retail	-4.465 (4.327)	-6.290 (4.689)	-5.762 (4.765)
Industry	5.988 (4.481)	7.384 (4.989)	3.330 (5.375)
Health	-3.667 (7.299)	-5.952 (7.936)	-5.080 (7.909)
Other	2.475 (3.812)	3.961 (4.049)	3.086 (4.189)
Number of employees (RC: Sole traders and micro (0-9 employees)			
Small (10-49 employees)	1.091 (3.261)	2.293 (3.614)	-0.072 (3.945)
Medium and large (50+ employees)	5.828 (5.349)	3.718 (6.028)	4.786 (6.017)
Legal status (RC: Sole proprietorship):			
Private limited company (Ltd)	-2.876 (3.303)	-5.581 (3.542)	-5.641 (3.727)
Public Ltd Company (PLC)	-5.705 (5.163)	-14.105 (5.808)**	-5.373 (5.839)
Other	3.365 (5.880)	1.928 (6.739)	0.021 (6.751)
Operating period (RC: Less than 5 years)			
6 - 10 years	-10.703 (3.102)***	-9.742 (3.351)***	-11.202 (3.536)***
11 - 20 years	-6.655 (3.054)**	-6.730 (3.285)**	-5.970 (3.429)*
More than 20 years	-3.175 (3.248)	-1.879 (3.455)	-1.430 (3.680)
Country (RC: FYROM)			
Bulgaria	5.104 (2.648)*	2.866 (3.026)	6.138 (3.272)*
Croatia	1.068 (2.686)	-0.922 (3.008)	2.576 (3.213)
Hiring a worker without a contract (RC: Never)			
Sometimes		-0.063 (2.756)	
In most cases/ always		0.721 (3.154)	
Hiding/ not paying taxes (RC: Never)			
Sometimes			-1.395 (2.805)
In most cases/ always			-6.436 (3.122)**
Constant	2.349 (5.511)	4.889 (6.396)	3.794 (6.596)
Number of observations	439	373	343
Prob > F	0.001	0.005	0.002
Pseudo R2	0.081	0.099	0.103

Table 1 (continued). Linear regression, dependent variable: Real annual sales growth

	Model 4 Coefficient (Standard error)	Model 5 Coefficient (Standard error)
Sector (RC: Construction)		
Agriculture	-0.691 (6.644)	-2.258 (6.781)
Hotels and restaurants	4.556 (6.533)	3.820 (6.687)
Services	0.337 (5.748)	1.849 (5.787)
Transport and communications	4.678 (5.919)	1.635 (6.258)
Trade	1.192 (4.626)	1.024 (4.745)
Retail	-3.054 (5.053)	-5.480 (5.134)
Industry	6.434 (5.420)	4.510 (5.612)
Health	-11.024 (8.508)	-9.595 (8.285)
Other	3.635 (4.414)	3.869 (4.329)
Number of employees (RC: Sole traders and micro (0-9 employees))		
Small (10-49 employees)	-0.860 (4.031)	1.785 (4.131)
Medium and large (50+ employees)	3.678 (6.302)	3.826 (6.797)
Legal status (RC: Sole proprietorship)		
Private limited company, limited by shares (LTD.)	-6.663 (4.109)	-8.184 (4.388)*
Public Ltd Company (PLC)	-9.100 (6.389)	-5.658 (6.696)
Other	5.684 (7.034)	3.975 (7.792)
Operating period (RC: Less than 5 years)		
6 - 10 years	-10.373 (3.603)***	-11.194 (3.869)***
11 - 20 years	-4.386 (3.512)	-5.695 (3.805)
More than 20 years	-0.492 (3.765)	-2.056 (4.085)
Country (RC: FYROM)		
Bulgaria	3.223 (3.460)	3.038 (3.705)
Croatia	1.994 (3.217)	2.704 (3.399)
Illicit export/import of goods (RC: Never)		
Sometimes	-5.421 (2.603)**	
In most cases/ always	-7.755 (3.080)**	
VAT fraud (RC: Never)		
Sometimes		-3.662 (2.699)
In most cases/ always		-9.503 (3.470)***
Constant	6.301 (6.718)	7.766 (6.995)
Number of observations	319	314
Prob > F	0.005	0.007
Pseudo R2	0.107	0.105

Notes: Significance: *p<0.1, **p<0.05, ***p<0.01
Source: Authors' own work based on the representative GREY Survey in Bulgaria, Croatia and FYROM

5. Discussion and Conclusions

Reporting the results of a linear regression analysis of the responses of 1,430 entrepreneurs interviewed in Bulgaria, Croatia and FYR Macedonia, the finding is that informal sector competition has a significant negative impact on firm performance. Enterprises whose competitors always, or in most cases, do not pay their full taxes owed, illicitly export/import goods or engage in VAT fraud are significantly more likely to suffer from lower levels of annual sales growth than those whose competitors never engage in such informal sector practices. Therefore, these results provide evidence to support the widely held assumption that informal sector enterprises represent unfair competition for enterprises and have a deleterious impact on their firm performance (Leal Ordóñez, 2014; Lewis, 2004; Webb et al., 2009, 2013; Williams, 2018).

These findings have important wider theoretical implications. They advance understanding of informal entrepreneurship. The widespread a priori assumption that firms witnessing informal competition have lower levels of firm performance here has been put under the spotlight. This reveals that enterprises reporting their competitors participate in the informal economy have significantly lower annual sales growth rates than those stating their competitors do not engage in the informal sector. Theoretically, this significant association between informal sector competition and firm performance provides validation for the thesis that the impact of informal sector competitors on firm performance is negative. However, this paper only shows this to be the case for three countries in South-East Europe and using only one indicator of firm performance. Future studies need to evaluate whether this is also the case in other countries and global regions and to evaluate this using a wider range of indicators of firm performance. Not only are there well-known difficulties with estimating the sales of sole traders and micro-enterprises (Moock, Musgrove and Stelcner, 1990; Vijverberg, 1991), but there is also a need to consider other indicators of firm performance in future surveys such as annual employment growth rates (using full-time equivalent job growth) and annual productivity growth rates, including total factor productivity, which would account for sources of productivity that include not only labor but also management quality, technological progress and systems of government.

Meanwhile, and in terms of policy implications, this paper provides evidence that action is required by policy makers to tackle the significant negative impact of the informal sector competitors on the business environment. How this can be achieved is a matter of debate. For many decades, the dominant policy approach has been to seek the eradication of informal sector competition. Drawing on the Allingham and Sandmo (1972) rational economic actor approach that seeks to change the costs of operating informally and benefits of operating formally, governments predominantly increased the costs of informality by increasing the penalties. However, this is not the only approach. Policy makers can also reduce the costs and improve the benefits of formality. This requires a simplification of registration and a reduction in the costs and improvement in the benefits of registration (Maloney, 2004; McKenzie and Woodruff, 2006). There is also perhaps a need to deal with the systemic formal institutional deficiencies that lead entrepreneurs to decide to operate in the informal economy (De Castro et al., 2014; Webb et al., 2009, 2013, 2014; Williams and Shahid, 2015). However, to determine what policy actions are required, future research on the impact of informal sector competition on firm performance will need to build into the survey design an analysis of the reasons why enterprises engage in the informal sector. This will require these surveys evaluating firm performance include questions on perceptions of the levels of penalty and risk of detection, along with their perceptions of the benefits of formality, and which formal institutional deficiencies are associated with participation in the informal sector. This will enable policy measures to be targeted at those issues that influence participation in the informal sector.

In sum, this paper has revealed that informal sector competition has a significant negative impact on firm performance. Enterprises reporting their competitors participate in

the informal economy have significantly lower annual sales growth rates than those stating their competitors do not engage in the informal economy. If this now stimulates similar research in other countries and global regions, and a wider range of firm performance indicators to be used, then one intention will have been fulfilled. If it also leads to questions being raised about what policy approaches should be pursued for tackling informal sector competition, and further research on this issue, then this paper will have achieved its fuller intention.

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References

Acs, Z, S Desai, P Stenholm and R Wuebker (2013). Institutions and the rate of formal and informal entrepreneurship across countries. Frontiers of Entrepreneurship Research, 35(15), 1-24.

Allingham, M and A Sandmo (1972). Income tax evasion: A theoretical analysis. Journal of Public Economics, 1(2), 323-38.

Autio, E and K Fu (2015). Economic and political institutions and entry into formal and informal entrepreneurship. Asia Pacific Journal of Management, 32(1), 67-94.

Castells, M and A Portes (1989). World underneath: The origins, dynamics and effects of the informal economy. In The Informal Economy: Studies in Advanced and Less Developing Countries, A Portes, M Castells and L Benton (eds.), 1-19. Baltimore: John Hopkins University Press.

Chepurenko, A (2018). Small family business in Russia: Formal or informal? International Journal of Sociology and Social Policy, 38(9/10), 809-22.

Davis, M (2006). Planet of Slums. London: Verso.

De Castro, JO, S Khavul and GD Bruton (2014). Shades of grey: How do informal firms navigate between macro and meso institutional environments? Strategic Entrepreneurship Journal, 8, 75-94.

Fajnzylber, P, W Maloney and G Montes Rojas (2009). Releasing constraints to growth or pushing on a string? Policies and performance of Mexican micro-firms. Journal of Development Studies, 45, 1027-47.

Farrell, D (2004). The hidden dangers of informal economy. McKinsey Quarterly, 3, 27-37.

Geertz C (1963). Old Societies and New States: The Quest for Modernity in Asia and Africa. Glencoe, IL: Free Press.

Gilbert, A (1998). The Latin American City. London: Latin American Bureau.

ILO (2007) The Decent Work Agenda in Africa 2007-15. Geneva, ILO.

ILO (2013) Women and men in the informal economy: Statistical picture. [laborsta.ilo.org/informal_economy_E.html].

ILO (2014) Transitioning from the informal to the formal economy. Report V(1), International Labor Conference, 103rd Session (2014). Geneva: ILO.

Karki, ST and M Xheneti (2018). Formalizing women entrepreneurs in Kathmandu, Nepal: Pathway towards empowerment? International Journal of Sociology and Social Policy, 38(7-8), 526-54.

Ketchen, DJ, RD Ireland and JW Webb (2014). Towards a research agenda for the informal economy: A survey of the Strategic Entrepreneurship Journal's Editorial Board. Strategic Entrepreneurship Journal, 8, 95-100.

Khan, EA (2017). An investigation of marketing capabilities of informal microenterprises: A study of street food vending in Thailand. International Journal of Sociology and Social Policy, 37(3/4), 186-202.

La Porta, R and A Shleifer (2008). The unofficial economy and economic development. Brookings Papers on Economic Activity, 47(1), 123-35.

——— (2014). Informality and development. Journal of Economic Perspectives, 28(3), 109-26.

Leal Ordóñez, JC (2014). Tax collection, the informal sector and productivity. Review of informality: exit and exclusion. In The Theory of Economic Growth, A Lewis (1959). London: Allen and Unwin.

Lewis, WW (2004). The Power of Productivity: Wealth, Poverty, and the Threat to Global Stability. Chicago: University of Chicago Press.

Linares, LA (2018). The paradoxes of informalizing street trade in the Latin American city. International Journal of Sociology and Social Policy, 38(7-8), 651-72.

Maloney, WF (2004). Informality revisited. World Development, 32(7), 1159-78.

McKenzie, D and C Woodruff (2006). Do entry costs provide an empirical basis for poverty traps? Evidence from microenterprises. Economic Development and Cultural Change, 55(1), 3-42

McKinsey Global Institute (2003). Turkey: Making the Productivity and Growth Breakthrough. New York: McKinsey.

Meagher, K (2010). Identity Economics: Social Networks and the Informal Economy in Nigeria. New York: James Currey.

Moock, P, P Musgrove and M Stelcner (1990). Education and earnings in Peru's informal nonfarm family enterprises. Washington DC: LSMS Working Paper No.64, World Bank.

Palmer, R (2007). Skills Development, the Enabling Environment and Informal Micro-enterprise in Ghana. Edinburgh: University of Edinburgh.

Perry, GE and WF Maloney (2007). Overview - informality: Exit and exclusion. In Informality: exit and exclusion, GE Perry, WF Maloney, OS Arias, P Fajnzylber, AD Mason and J Saavedra-Chanduvi (eds.), 1-20. Washington DC: World Bank.

Ram, M, P Edwards, T Jones and M Villaries-Varela (2017). From the informal economy to the meaning of informality: Developing theory on firms and their workers. International Journal of Sociology and Social Policy, 37(7/8), 361-73.

Schneider, F and CC Williams (2013). The Shadow Economy. London: Institute of Economic Affairs.

Siqueira, ACO, JW Webb and GD Bruton (2014). Informal entrepreneurship and industry conditions. Entrepreneurship Theory and Practice, DOI: 10.1111/etap.12115.

Slavnic, Z (2010). Political economy of informalization. European Societies, 12(1), 3-23.

Taiwo, O (2013). Employment choice and mobility in multi-sector labor markets: Theoretical model and evidence from Ghana. International Labor Review, 152(3-4), 469-92.

Vijverberg, W (1995). Returns to schooling in non-farm self-employment: An econometric case study of Ghana. World Development, 23(7), 1215-27.

Webb, JW, GD Bruton, L Tihanyi and RD Ireland (2013). Research on entrepreneurship in the informal economy: Framing a research agenda. Journal of Business Venturing, 28, 598-614.

Webb, JW, RD Ireland and DJ Ketchen (2014). Towards a greater understanding of entrepreneurship and strategy in the informal economy. Strategic Entrepreneurship Journal, 8(1), 1-15.

Webb, JW, L Tihanyi, RD Ireland and DG Sirmon (2009). You say illegal, I say legitimate: Entrepreneurship in the informal economy. Academy of Management Review, 34(3), 492-510.

Williams, CC (2006). The Hidden Enterprise Culture: Entrepreneurship in the underground economy. Cheltenham: Edward Elgar.

——— (2014) Confronting the Shadow Economy: Evaluating Tax Compliance and Behavior Policies. Cheltenham: Edward Elgar.

——— (2015a). Explaining cross-national variations in the scale of informal employment: An exploratory analysis of 41 less developed economies. International Journal of Manpower, 36(2), 118-35.

——— (2015b). Out of the margins: Classifying economies by the prevalence and character of employment in the informal economy. International Labor Review, 154(3), 331-52.

——— (2018). Entrepreneurship in the Informal Sector: An Institutional Perspective. London: Routledge.

Williams, CC and A Martinez-Perez (2014). Is the informal economy an incubator for new enterprise creation? A gender perspective. International Journal of Entrepreneurial Behavior and Research, 20(1), 4-19.

Williams, CC and M Shahid (2015). Informal entrepreneurship and institutional theory: Explaining the varying degrees of (in)formalization of entrepreneurs in Pakistan. Entrepreneurship and Regional Development, 28(1-2), 1-25.

Williams, CC and AM Kedir (2016). Business registration and firm performance: Some lessons from India. Journal of Developmental Entrepreneurship, 21(3), DOI: 10.1142/S1084946716500163.

Williams, CC and A Kedir (2017a). Starting-up unregistered and firm performance in Turkey. International Entrepreneurship and Management Journal, 13(3), 797-817.

——— (2017b). Evaluating the impacts of starting-up unregistered on firm performance in Africa. Journal of Developmental Entrepreneurship, 22(2), DOI: 10.1142/S1084946717500170.

——— (2018a). Evaluating competing theories of informal sector entrepreneurship: A study of the determinants of cross-country variations in enterprises starting-up unregistered. International Journal of Entrepreneurship and Innovation, 19(3), 155-65.

——— (2018b). Explaining cross-national variations in the prevalence of informal sector entrepreneurship: Lessons from a survey of 142 countries. Journal of Developmental Entrepreneurship, 23(1), 1-22.

——— (2018c). Contesting the underperformance thesis of women entrepreneurs: Firm-level evidence from South Africa. International Journal of Management and Enterprise Development, 17(1), 21-35.

Williams, CC, S Nadin, S Newton, P Rodgers and J Windebank (2013). Explaining off-the-books entrepreneurship: A critical evaluation of competing perspectives. International Entrepreneurship and Management Journal, 9(3), 447-63.

Williams, CC, M Shahid and A Martinez (2015). Determinants of the level of informality of informal micro-enterprises: Some evidence from the city of Lahore, Pakistan. World Development, 84, 312-25.

Williams, CC, A Martinez-Perez and AM Kedir (2017). Informal entrepreneurship in developing economies: The impacts of starting-up unregistered on firm performance. Entrepreneurship Theory and Practice, 41(5), 773-99.