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WIDER Working Paper 2018/64

Why do household businesses in Vietnam stay informal?

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June 2018

United Nations University World Institute for Development Economics Research
wider.unu.edu

Abstract: Using unbalanced panel data from the small and medium enterprise surveys in Vietnam in 2005, 2007, 2009, 2011, 2013, and 2015, this paper investigates factors associated with informality in Vietnam. We assume that household businesses, especially the top tier firms, become formal either because they perceive benefits of formalization such as an increase in the household performance, or because they want to escape bribes and harassment. Using the random effects model with controlling for the pre-formalization trends, our results show that productive household businesses stay informal because net costs from tax payment may surpass net benefits from formalization. Moreover, government controls do not promote formalization, especially among the 'upper' tiers of informal households. Our findings raise a suspicion of collusion corruption between informal households in the top tiers and government tax officials. This opens room for future qualitative and quantitative studies to investigate collusion corruption as a determinant of informality in developing countries.

Keywords: formalization, informal sector, Vietnam
JEL classification: I24, N85, O17

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This study has been prepared within the UNU-WIDER project on 'Structural transformation and inclusive growth in Viet Nam'.

Information and requests: publications@wider.unu.edu

ISSN 1798-7237 ISBN 978-92-9256-506-0 https://doi.org/10.35188/UNU-WIDER/2018/506-0

Typescript prepared by Ans Vehmaanperä.

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The Institute is funded through income from an endowment fund with additional contributions to its work programme from Finland, Sweden, and the United Kingdom as well as earmarked contributions for specific projects from a variety of donors.

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1 Introduction

In spite of the benefits of formalization such as the improvement in firms' profits and customer base, better access to infrastructure and other public goods, and protection from corruption (Boly, 2017; Cling et al., 2012; Demenet et al., 2016; Fajnzylber et al., 2011; McKenzie and Sakho, 2010; Rand and Torm, 2012a), the informal sector remains large (La Porta and Shleifer, 2014; Williams et al., 2016). This sector is observed with a heterogenous structure which is composed of 'lower' tiers of vulnerable workers with low levels of education and 'upper' tiers of high earnings and skilled employers. The informal sector is also perceived as a weakness in economic development (Loayza, 1996; C. Nguyen et al., 2013) with tax erosion (Dabla-Norris et al., 2008), the unequal playing field for firms which comply with regulations (Tenev et al., 2003), and the disadvantages for employees working without social security. Therefore, the identification of the factors associated with informality and formalization becomes a desirable policy goal.

Theories explaining the existence of the informal sector can be classified into two categories. The first strand of the literature attributes burdens of regulations as a catalyst for the prevalence of informal activity among 'lower' tiers of the sector (Rauch, 1991; Loayza, 1996; Marcouiller and Young, 1995; Azuma and Grosman, 2002). Avoiding heavy regulatory burdens—including tax, labor regulations, and entry costs—is therefore recommended (Nelson and De Bruijn, 2005; T. Nguyen, Verreynne, and Steen, 2014). However, there may be another primary reason: informal employers are too weak to have incentives to formalize (Cunningham and Maloney, 2001; Fajnzylber et al., 2011; Günther and Launov, 2012).

The second strand of the literature focuses on the quality of the legal system as one of the determinants which induce informality (Tenev et al., 2003; Dabla-Norris et al., 2008; Fajnzylber et al., 2009; Soto, 1989). Among them, Dabla-Norris et al. (2008) find different effects of regulatory burdens on the size of informality across countries. They show that while a heavier burden of regulations correlates positively with the size of the informal sector in countries with a weak rule of law, such an effect may not happen in countries with better legal quality. In addition, De Andrade et al. (2014) reveal that firms are forced to register by government interventions in countries with a weak rule of law.

Our research is motivated by these legal system-related findings and the literature on the 'exit' view that recognizes an informal firm as a decision-maker considering net benefits of formalization. For these firms, the evasion of tax and social security costs for labour are perceived as benefits. They will persist in the informal sector as long as these benefits are higher than the costs that they pay for their illegal action (Rand and Tarp, 2012). In addition, in Viet Nam, collusion corruption, or a handshake, between household businesses and government tax officials for personal gains at the expenses of the state is very common (Giang et al., 2016). It may provide one of many explanations why a household prefers to stay informal given its profit maximization function.

In this paper, we look at determinants explaining why household businesses, with a particular focus on those in the 'top' tiers, stay informal. There are two reasons for paying more attention to the 'top' tier. First, only these households can consider costs and benefits of formalization whereas businesses in the 'lower' tier are too weak to afford the cost of formalization (Cling et al., 2012). Second, while empirical evidence (Demenet et al., 2016) and our descriptive statistics show that formalized businesses often belong to the 'upper' tier, a significant proportion of businesses in this spectrum of the informal sector remains informal. We contribute to the literature by focusing on the legal system-related reasons, especially regarding tax evasion and government controls, and their effects on formalization in Viet Nam. It should be noted that in this research the division of

household businesses into 'lower' and 'upper' tiers is based on households' revenues. This classification is closely related to the entrepreneurs' ability, as empirical evidence shows that businesses with higher value added and profits are run by more educated owners and have more workers (Rand and Torm, 2012a; Nguyen et al., 2013; Boly, 2017).

Because most of the informal firms in Viet Nam are household businesses, we limit our study to the household sector. According to Vietnamese laws, all non-farm household businesses which employ up to 10 employees and have one establishment have to register for a business license and a tax code. The exemption is for households which earn less than a certain amount and mobile street vendors including motorbike taxis (xe om) (Decree 88/2006/ND-CP). However, because only very few household businesses have an income less than this threshold, they generally should be registered (Cling et al., 2012). Nevertheless, in practice the informal sector in Viet Nam is prevalent, not only among the 'lower' but also in the 'upper' tiers.

The remainder of our paper is organized as follows. Section 2 overviews the existing literature on the heterogeneity of the informal sector and its associated factors. In Section 3 we describe the dataset and discuss the analytical approach. Section 4 presents the main empirical results and Section 5 concludes.

2 Literature review

Since the work of Maloney (2004), the literature has converged into unanimous consensus on the heterogeneity of informality in developing countries. Accordingly, informal workers are classified from the 'lower' to the 'upper' tiers of the informal labour market spectrum, and their existence is observed as the last resort and as the preference of workers. The last resort view considers informal workers as those in the 'lower' tiers who could not find a job in the formal sector, then escape unemployment by working involuntarily in the informal sector (Harris and Todaro, 1970; Lewis, 1954). The preference view argues that informal employment is the choice of workers in the 'upper' tiers given their profit and utility maximization (Hart, 1973; Levenson and Maloney, 1998).

Empirical evidence on the issue of heterogeneity of informality can be found for the case of Mexico (Cunningham and Maloney, 2001), Côte d'Ivoire (Günther and Launov, 2012), and Viet Nam (Cling et al., 2012; T. Nguyen et al., 2014). Often, the literature finds at the lowest level of the informal labour market segmentation poorly educated, unskilled, and vulnerable employees. For these people, entry barriers to the formal sector do not matter given their inability (Cunningham and Maloney, 2001). They are not generally able to afford the costs of formalization (Cling et al., 2012; Demenet et al., 2016; Nelson and De Bruijn, 2005). They have no choice but to stay informal for surviving. Therefore, instead of losing constraints, development policies need to identify disadvantages that they face and focus on helping these people for the objective of inclusive growth.

Within this 'lower' tier of informal employment, Roubaud (1994) and Bacchetta et al. (2009) present two approaches that segment the informal labour market into further detail. The 'dualist' approach considers the informal sector as the residual component of the market, which is entirely unrelated to the formal economy. On the other hand, the 'structuralist' approach focuses on the interdependencies between the informal and the formal sector (Moser 1978, Portes et al.1989). According to the 'structuralist' approach, when young people start up as small informal businesses, they might have interaction with the formal sector and are eager to transform into the formal status. Moreno-Monroy (2012) argues that when formal and informal firms take part in the value chain through backward and forward linkages, and if informal enterprises undertake part of the

production process of formal enterprises through sub-contracting, benefits such as productivity and wages could occur. This more detailed classification implies that regulatory burdens may impede firms in the higher end of the 'lower' tiers to formalize.

In the heterogeneous informal labour market, the 'upper' tier of informal employment comprises successful and voluntary entrepreneurs. As indicated in the literature, those people select the informal sector as their preferences and their earnings are as high as salaried workers in the formal sector (Cross, 2000; Rand and Torm, 2012b; Snyder, 2004). Despite empirical evidence on the benefits of formalization such as increases in profits and investment (Rand and Torm, 2012), customer base (McKensie and Sakho, 2010), access to information and protection from corruption (Cling et al, 2012), government assistance (Nguyet et al., 2013 and the cost of informality (Tenev et al., 2003), these entrepreneurs stay informal. Regulation burdens are often cited as the main reasons for the existence of informal households in these 'upper' tiers. Rauch (1991), Loayza (1994), Marcouiller and Young (1995), and Azuma and Grosman (2002) show that high tax and regulation burdens are the determinants of informality while entry costs (Auriol and Warlters, 2005), labour regulations (Friedman et al., 2000; Johnson et al., 1997; Botero et al., 2004), and financial constraints (Straub, 2005) are identified as obstacles for formalization.

As informality is partly seen as a weakness in economic development (Loayza, 1996; C. Nguyen et al., 2013) with tax erosion (Dabla-Norris et al., 2008), the unequal playing field for firms which comply with regulations (Tenev et al., 2003), and the disadvantages of employees working with no social security, identifying factors associated with informality and formalizing the sector is a desirable policy goal. However, formalization mainly belongs to the 'upper' tiers of the informal labour market segmentation, and the degree of transition depends on several factors including businesses' characteristics and the macroeconomic environment. For instance, Tenev et al. (2003) and Dabla-Norris et al. (2008) find that the quality of the legal system is a critical determinant of informality while Demenet et al. (2016) reveal that micro-enterprises decide to operate in a more competitive environment.

In Viet Nam, heterogeneity in informal household businesses is very common. The majority of the sector comprises of small and weak informal businesses. Households in this 'lower' tier tend to be run by old entrepreneurs, with low levels of education and technical skills. They also have weak social capital and productivity. Household businesses in this group have no incentive to register their businesses. Their informal status can be explained by either their lack of knowledge of laws or lack of control from the government. Most of small informal businesses feel they are ignored by the government (Cling et al., 2012).

The 'upper' tiers of the informal sector include younger and higher educated employers. Households belonging to this group are more modern with high electronic access. They achieve the highest level of productivity and efficiency and have more opportunities to grow (C. Nguyen et al., 2013). Formalization mostly happens among household businesses at the 'upper' tiers (Demenet et al., 2016; C. Nguyen et al., 2013). Tax and regulation burdens, as well as the level of access to resources, affect the firm informality (Tenev et al. 2003). Cling et al. (2010; 2012) find that a business size, income, and professional premises, access to information, large customer base, and protection from corruption are positively and significantly correlated with its registration decision. Moreover, the education level of entrepreneurs influences their behaviour when working under regulations.

In this paper, we will unveil factors associated with the formal/informal status of micro firms in Viet Nam. According to qualitative studies from Cling et al. (2012) and Rand and Torm (2012a), there are two types of registered households. The first is composed of households that are encouraged by their perception of benefits of formalization such as an increase in the probability

of accessing formal credits and public facilities (Rand and Torm, 2012a). The second type includes businesses which want to avoid harassment and bribes from state officials (Cling et al., 2012). Therefore, in addition to the characteristics of households and household owners, we examine the quality of the legal system, tax evasion, corruption behaviours, and government controls on informality in Viet Nam.

The recent literature has focused on the link between corruption and firm informality. Dabla-Norris et al. (2008) investigate this correlation using cross-country micro-firm data from China, India, Brazil, Indonesia, and Russia. They find that informality is positively correlated with corruption. Similar results are found for the case of Viet Nam (Tenev et al., 2003). On the other hand, Rand and Tarp (2012) discover that informality is negatively associated with bribe incidence. They then argue that the informal status helps firms easily hide their visibility. Nevertheless, none of these above studies distinguish between two types of corruptions: extortion (corrupt practices which household businesses are exposed to) and collusion (corrupt acts they actively engage in) and the reason may be lack of data.

Dang et al. (2016) are amongst the first persons who separate two types of corruption while investigating corruption in the formal household businesses in relationship to business formalization, tax compliance, and access to information and capital in Viet Nam. They find that while extortion in the form of requests for bribes seemed to be low, hidden extortion is quite widespread, especially in the tax area. It is quite common in the business sector that business owners have incentives to collude with state officials for personal gains at the expenses of the state. Using cross-sectional household data in the two biggest cities in Viet Nam, Hanoi and Ho Chi Minh City in 2007, Cling et al. (2012: 649) reveal that while household businesses express their incentives of registration to avoid corruption, they are in fact the hardest hit by corruption.

These above findings from the literature for the case of Viet Nam induce us to hypothesize that collusion corruption is one of the factors that cause self-employed entrepreneurs in the 'upper' tiers of informal employment to stay informal even if they are subject to being registered. If informal households can collude with tax officials for personal benefits, they will not formalize. Although we do not have information to evaluate whether tax evasion arises from collusion or extortion corruption, we can evaluate whether benefits from tax payment are correlated with the size of informality in Viet Nam.

3 Data and the analytical framework

In this paper, we use panel dataset from the Small and Medium Enterprise (SME) surveys conducted every two years by the Central Institute for Economic Management of Viet Nam and the University of Copenhagen in 2005, 2007, 2009, 2011, 2013, and 2015. The SME surveys use a stratified sampling approach to sample formal enterprises and registered households in ten cities and provinces of Viet Nam. The sampling frame for formal enterprises and registered households is selected from the enterprise censuses of the General Statistics Office of Viet Nam. Informal household businesses, which were included in the SME surveys, were sampled randomly by the enumerator in surveyed districts. Therefore, it is worth noting that the sample of informal household businesses may not be entirely representative of the informal sector in Viet Nam (see Rand and Torm (2012a) for more details about the surveys).

As mentioned above, most of the informal firms in Viet Nam have household status, and we limit our study to the household sector. The 15th International Conference of Labour Statisticians defines an Informal Household Business as a household which sells parts of its products, has no

Business Registration Certificate, and has a small size regarding the number of employees (Hussmanns, 2004b). The size varies across countries (Hussmanns, 2004a). In Viet Nam, this threshold is set up to ten workers. Households using more than ten workers have to register under the Enterprise Law (Decree 88/ND-CP). According to Vietnamese laws, all non-farm household businesses which employ up to ten employees and have one establishment need to register with the exemption of two types: (i) those who earn less than a certain amount set at district level (usually the minimum wage stipulated by the law)[1] and (ii) mobile street vendors including motorbike taxis (xe om) (Decree 88/2006/ND-CP). Moreover, within ten days since it has obtained a Business Registration Certificate (BRC), a household needs to register for a tax code at the local tax office (Article 22, Tax management law).

Under the first criteria (that households with an income above the minimum wages need to register), and using data from representative informal households surveys in Hanoi and Ho Chi Minh City in 2007-2009, Cling et al. (2012) show that 95 per cent of Informal Household Businesses (IHBs) should register in both cities. If adding the second criteria (that a household business should have a fixed premise), the share of informal households drops to 70 per cent. This result implies that almost all IHBs in Viet Nam should register under the laws. Nevertheless, IHBs account for 81.5 per cent of the total household businesses in 2007 (Cling et al., 2011).[2]

Among household businesses which are registered, many households have a business registration certificate but do not have a tax code (Rand and Torm, 2012a). On the other hand, some have a tax code but do not have a business registration certificate (Demenet et al., 2016). This is because the tax office still provides a household with a tax code for the purpose of tax collection even when a household does not have a business registration certificate (Cling et al., 2012). This fact is understandable because a household business applies for a business registration certificate at the district registration office while their request for a tax code is submitted to the tax office. Until now, these two systems of registration have been separated in Viet Nam. Therefore, under regulations, a firm is formal if it has either a business registration certificate or a tax code. In this article, we define formal household businesses as those who have a tax code.[3]

Our unbalanced panel sample for the descriptive section includes all household businesses with at least two observations during the studying period. This sample covers always-formal businesses (976 or 41.8 per cent of the total), switched firms (933 or 39.9 per cent of the total) and always-informal firms (427 or 18.3 per cent of the total). We limit the sample to only informal and switching businesses for the shake of identifying the reasons behind formalization within the informal sector. It means that the final sample only covers firms that were under informal status at the start of the interviews. These 1,360 informal businesses at the starting points form a panel

[1] Before 2015, the threshold above which a household has to pay taxes is set up by the local government at the district level, and this threshold cannot be below the minimum wage stipulated by the law. Therefore, this limit depends on the discretion of the local government. Since 2015, the amendment of the Tax Law has set up taxes of households on revenue and families do not have to pay taxes if their revenue is below 100 million VND per year (Tax Law number 71/2014/QH13).

[2] Using data on informal household businesses from the Vietnam Establishment Census carried out by the General Statistics Office of Viet Nam in 2012 (the census covers all fixed location businesses (household businesses), production establishments (enterprises), administrative organizations, and political and non-profit associations (GSO, 2013)), we calculate the proportion of informal household businesses in the household sector. The share is 63 per cent. We think that this drop is not mainly related to changes over time but may be due to different ways of defining informal household businesses. In our data, an informal household business needs to match both the criteria: not registering and having fixed premise, while we think Cling et al. (2011) use only the first criteria.

[3] In the SME data, the number of households having only a business registration certificate is almost the same as those having a tax code.

of 5,424 observations. Out of these businesses, 28.2 per cent have observations in all six surveys, 10.4 per cent have five observations, 15.7 per cent have four observations, 22 per cent have three observations, and 23.5 per cent have two observations.

Our purpose in this paper is to examine factors associated with the status of informality in Viet Nam. As indicated in Section 2, households remain informal if either they are too weak or they can evade taxes. Furthermore, formalized households may include businesses that can perceive the benefits of formalization such as an increase in the household performance, or may include businesses which want to escape bribes and harassment. For the first type of formalization, we investigate the impacts of formalization on households' performance and tax payment. For the second type of formalization, we use the probit model to examine the effects of government controls and bribes on the household decision of registering.

To examine the impacts of formalization on household performance and tax payment, we follow the method proposed by Boly (2017). The benefits of formalization on household performance and tax payment can be estimated using the following equation:

$$y_{it} = \beta_0 + \beta_1 F_{it} + \beta_2 NS_i + \beta_3 X_{it} + \lambda_i + \gamma_t + \epsilon_{it} \quad (1)$$

where the dependent y_{it} represents revenue (in logarithm form), taxes and fees (in logarithm form) and ratio of taxes to revenue of firm i at time t. To take into account the time and provincial differences in prices and living costs, both revenue and taxes are converted into values of year 2015 using the spatial cost of living index (SCOLI). The main variable F_{it} is a dummy which is equal to 1 if the household is identified as formal at any point of time on the panel and 0 otherwise. Similar to Boly's (2017) method, we create a non-switcher variable NS_i which equals to 1 for all years if the businesses remained informal through these surveys, and 0 if an informal business has become formalized at any time during the study period. With the construction method as above, NS_i can capture firm-type time-invariant unobservable differences between non-switchers and switchers while F_{it} captures the net effect of formalization. We apply the random effects model for this equation due to the time-constant nature of the non-switcher variable. We run this model over the whole panel sample and among top tier informal households. The top tier informal household businesses are identified as the top 10 per cent among all household businesses at any time before formalization during the survey period.

The literature which studies the benefits of formalization can be split into two types: experimental and non-experimental approaches. Experimental studies involve the use of randomized control trials and often show that the costs of formalization outweigh the benefits (Boly, 2017; McCaig and Nanowski, 2017). On the other hand, almost all non-experimental studies which use either cross-sectional analysis (Fajnzylber et al., 2009, 2011; McKenzie and Sakho, 2010; Monteiro and Assunção, 2012,) or panel data (Boly, 2017; Demenet et al., 2016; Rand and Torm, 2012a) reveal the benefits of formalization. For instance, Rand and Torm (2012a) report an increase in profits of 12 to 16 per cent, Demenet et al. (2016) show a growth of 20 per cent in value added while Boly (2017) report an increase in profit and value added of 9 to 11 per cent due to formalization in Viet Nam. The only exceptional case is the study of McCaig and Nanowski (2017) who use double-difference methods and data from Vietnam Household Living Standards Surveys. They find that registering is not accompanied by an increase in profits and other performance outcomes. They therefore suggest that controlling for the trend of pre-formalization period is crucial to unveil the *'de facto'* effects of formalization.

The reason for controversial results from the non-experimental approach may come from the fact that the decision to formalize is endogenous. Formalized or switched firms may not be comparable

to non-switchers due to unobserved heterogeneity. As indicated by McCaig and Nanowski (2017), while household fixed-effects in panel data can control for unobserved time-invariant heterogeneity, unobserved time-variant heterogeneity may remain, such as firm-specific time trends, and these trends may be correlated with changes in business performance and the decision to formalize. Thus, controlling for the pre-formalization trend is important to estimate the correct impacts of formalization. It is fortunate that each year, the SME survey collects information on firms' revenue in two previous consecutive years. Therefore, instead of using double-difference methods, we control for household-specific time trend effects before formalization by utilizing the growth rate of revenue. The revenue growth rate is calculated based on the financial reports of two continuous years in the same survey (e.g, revenue recorded in 2012 and 2011 for the 2013 survey).

Control variables are also incorporated in the model. They consist of observable firm characteristics variables X_{it} such as the gender, age, and education level of the owner/manager; the number of regular full-time employees (in logarithm form), the share of production and service workers, the percentage of female workers, and owning a Certificate of Land Use Right (CLUR). Other time-invariant control variables (λ_i) include industry dummy variable, location dummies (rural/urban and central cities/smaller provinces) to capture variations in local governances. Year dummies (γ_t) are also included to control for potential time effects.

To identity factors (including government control and bribes) associated with the household decision to formalize, we use the probit model as presented below:

$$F_{it} = 1[\alpha_1 Z_i + \alpha_2 X_{it} + \lambda_i + \gamma_t + \epsilon_{it}] \quad (2)$$

where $1[.]$ is the binary indicator function; Z_i, the leading independent variable, is a dummy variable which equals 1 (i) if a business paid at least one informal payment during the last financial year, or (ii) if a household had to spend time dealing with business issues with government officials, or (iii) if a business has poor knowledge of or is not interested in tax laws. The first two variables are used as proxy for government control and the level of harassment. All these dummy variables, Z_i, are identified before a firm is formalized to test the hypothesis that firms will formalize to avoid harassment. These dummies are unchanged over time.

4 Empirical results

First, we analyse the characteristics of the informal sector in Viet Nam and then discuss the reason behind formalization using results from the analytical model presented in Section 3.

4.1 Characteristics of the informal sector in Viet Nam

Considering solely the informal sector, our sample shows that 31 per cent of households are always informal and the majority of them are in the bottom 90 per cent (394 observations in Table 1a). Formalization happens more frequently among the top 10 per cent than the bottom 90 per cent groups (73 per cent versus 68 per cent). However, when we exclude the data of the six rounds of this survey in 2015 due to its irrationally high formalization rate among the household business group (96 per cent) when panelled with the 2013 survey, IHBs are predominant in the sample, accounting for 72 per cent. Moreover, the percentage of formalized households in the top 10 per cent is much lower (only 44 per cent in Table 1b).

Table 1a - Frequency of business types

	Bottom 90%	Top 10%	Total
Non-switcher	394	33	427
(%)	*31.85*	*26.83*	*31.40*
Switcher	843	90	933
(%)	*68.15*	*73.17*	*68.60*
Total	1237	123	1360
	100	*100*	*100*

Source: Authors' calculation using SME data 2005–15.

Table 1b - Frequency of business types during 2005–13

	Bottom 90%	Top 10%	Total
Non-switcher	773	57	830
(%)	*71.44*	*51.82*	*69.63*
Switcher	309	53	362
(%)	*28.56*	*48.18*	*30.37*
Total	1082	110	1192
	100	*100*	*100*

Source: Authors' calculation using SME data 2005–13.

To shed light on the reasons why some households stay informal but others do not, we provide descriptive statistics on the characteristics of households and household owners for the whole sample (Table 2) and for the top 10 per cent (Table 3). Results from Table 2 show that switchers are stronger than non-switchers in terms of economic performance. However, they experience lower revenue growth rate after formalization, especially for the top 10 per cent (8.9 per cent compared to 1 per cent before and after switching – Table 3). Furthermore, formalized businesses pay much more taxes than before switching and they have to be controlled more by government officials after formalization (Tables 2 and 3). On the other hand, the non-switcher group pays the least taxes and informal fees. Households in this group spend less time to deal with government officials than switchers. Overall, the results indicate that strong firms can formalize whereas weaker households retain their informal status. In Section 5, we investigate whether these factors are associated with the household decision to formalize.

Table 2 - Income, tax and bribe by business types - All sample

	Non-switcher	Pre-switching	After-switching	Total
Revenue (mil VND)	552.8	862.0	1172.1	2425.5
	(772.0)	(2775.8)	(5728.8)	(7988.3)
Revenue growth rate (%)	5.723	6.437	4.117	5.722
	(20.44)	(19.05)	(30.30)	(24.35)
Taxes and fees (mil VND)	1.452	4.252	7.740	43.40
	(3.484)	(15.48)	(31.34)	(153.8)
Tax/Revenue (%)	0.388	0.631	0.679	2.544
	(0.868)	(1.378)	(1.199)	(2.486)
% paid at least one informal payment	12.42	19.59	22.88	37.48
	(24.01)	(33.36)	(36.69)	(33.48)
% spend time to deal with government officials	47.22	61.38	80.92	92.23
	(35.37)	(38.41)	(36.40)	(18.32)
% with poor knowledge/no interest in tax law	82.86	78.58	83.50	57.38
	(26.66)	(33.81)	(31.69)	(34.41)

Notes: Figures in parentheses are standard deviation. We first take average each variable of each firm, and then calculate the mean of each group.

Source: Authors' calculation using SME data 2005–15.

Table 3 - Income, tax and bribe by business types - Top 10%

	Non-switcher	Pre-switching	After-switching	Total
Revenue (mil VND)	2321.4	3832.0	3346.4	3402.0
	(1488.3)	(7902.7)	(4468.5)	(6018.0)
Revenue growth rate (%)	7.186	8.906	1.044	5.524
	(19.44)	(16.85)	(17.36)	(17.78)
Taxes and fees (mil VND)	4.032	13.39	17.62	13.59
	(6.754)	(40.11)	(47.28)	(40.27)
Tax/Revenue (%)	0.383	0.400	0.631	0.488
	(0.805)	(1.048)	(1.271)	(1.112)
% paid at least one informal payment	28.60	29.41	46.36	35.99
	(32.87)	(35.00)	(43.33)	(38.98)
% spent time to deal with government officials	61.26	75.05	92.71	79.87
	(35.13)	(32.86)	(22.24)	(31.54)
% with poor knowledge/no interest in tax law	73.60	71.22	72.89	72.26
	(29.51)	(35.97)	(36.45)	(35.11)

Notes: Figures in parentheses are standard deviation. We first take average each variable of each firm, and then calculate the mean of each group.

Source: Authors' calculation using SME data 2005–15.

Tables 4 and 5 present the characteristics of household owners by types. As can be seen from Table 4, while the age of owners/managers of households is similar across groups, the percentage of owners who complete higher secondary school is higher in the switcher group compared to that of the non-switcher counterparts. While the result for the whole sample is in line with the literature which shows that informal households are operated by persons with a low level of education, a different story is found for the top 10 per cent. The education level of the households in the switcher group is lower than that of the non-switcher businesses (Table 5). Furthermore, knowledge on tax law is similar between non-switchers and formalized households before they register. Results from Tables 4 and 5 also show that household businesses in urban areas are more likely to be formalized than those in rural places.

Table 4 - Owner and household business characteristics by business types - All sample

	Non-switcher	Switcher	Total
Male owner (%)	67.25	69.22	63.27
	(40.75)	(38.57)	(41.61)
Age of owner	46.81	46.17	46.37
	(10.33)	(8.634)	(9.382)
Owner completed higher secondary school (%)	38.74	46.76	56.37
	(41.61)	(41.38)	(41.12)
No. of dependent household members	1.320	1.372	1.453
	(1.037)	(0.985)	(1.105)
Total labor force (people)	4.649	5.447	8.848
	(4.663)	(7.570)	(17.02)
Share of female workers (%)	38.80	39.13	34.47
	(26.99)	(25.12)	(22.86)
Share of production and service workers (%)	63.91	59.15	67.30
	(18.11)	(20.40)	(15.27)
Have a CLUR (%)	68.27	74.54	67.93
	(37.74)	(35.59)	(39.59)
Urban areas (%)	27.10	35.90	67.91
	(44.49)	(47.99)	(46.71)
Ha Noi, Hai Phong and HCM city (%)	12.26	18.52	56.94
	(32.83)	(38.86)	(49.54)
Medium, high-tech sector (%)	28.41	23.58	38.47
	(43.79)	(41.82)	(47.08)

Note: We first take average each variable of each firm, and then calculate the mean of each group.

Source: Authors' calculation using SME data 2005–15.

Table 5 - Owner and household business characteristics by business types - Top 10%

	Non-switcher	Switcher	Total
Male owner (%)	77.03	78.19	77.90
	(37.70)	(32.05)	(33.45)
Age of owner	41.71	45.48	44.52
	(8.540)	(8.623)	(8.730)
Owner completed higher secondary school (%)	51.44	44.89	46.56
	(41.97)	(38.96)	(39.70)
No. of dependent household members	1.656	1.519	1.554
	(1.215)	(1.053)	(1.094)
Total labor force (people)	9.718	12.70	11.94
	(7.398)	(17.43)	(15.53)
Share of female workers (%)	33.35	37.77	36.64
	(25.33)	(23.66)	(24.08)
Share of production and service workers (%)	75.98	75.21	75.41
	(14.30)	(13.15)	(13.41)
Have a CLUR (%)	74.46	74.91	74.79
	(37.56)	(33.90)	(34.74)
Urban areas (%)	21.62	25.93	24.83
	(41.73)	(44.03)	(43.35)
Ha Noi, Hai Phong and HCM city (%)	16.22	24.07	22.07
	(37.37)	(42.95)	(41.61)
Medium, high-tech sector (%)	29.73	14.66	18.51
	(46.34)	(34.69)	(38.40)

Note: We first take average each variable of each firm, and then calculate the mean of each group.

Source: Authors' calculation using SME data 2005–15.

4.2 Which households are more likely to formalize?

In this section, we test the most common hypotheses that firms will register either when they perceive benefits of formalization or they want to avoid bribes and harassment. As indicated in the analytical framework, the estimation of the first should consider the issues of endogeneity carefully because firm heterogeneity may be both time-invariant and variant. On the other hand, the estimation of the second type of formalization is straightforward by using the probit model.

Staying in the informal sector because benefits outweigh the costs

Households will consider to register or stay in the informal sector based on their perceived benefits and costs of formalization. Household businesses may compare the benefits such as the increase in their revenues and profits with the costs including taxes and labour regulations. In this paper, only taxes will be considered because household businesses are not required to register for the use of labour (Rand and Torm, 2012a) in Viet Nam. We will evaluate the benefits of formalization covering the increase in the household revenue and the cost of paying taxes. Revenue is chosen as an indicator of household performance because it allows us to quickly match them with the tax indicator. The reason is that although before 2015 households had to pay taxes based on their value added (Law on Tax management, 78/2006/QH11), tax officials use households' revenues to compute an amount of tax payment for households. This is because almost all informal households in the sample do not have accounting books (Tables 4 and 5).

Similar to Boly's (2017) study, we firstly use the random effect (RE) model to examine whether household businesses switch to the formal status because of their expected revenue increase. As indicated in Section 3, random effect models are applied because the non-switcher variable is time-constant. The benefits of formalization on a business revenue and its growth are documented in Table 6. In this table, the dummy variable *'non-switcher'* (1 for non-switcher and 0 otherwise) reflects the differentials in revenues of informal households and their formalized counterpart. As the way to construct this variable explained in Section 3, it should be noted that the sub-sample 'non-

switcher' may include the informal status of formalized businesses before they register. Therefore, the variable *'switcher' (after formalization)* reflects the net effects of formalization on a switched firm. That means it reflects the revenue that a household gains after formalization.

Model 1 in Table 6 shows our estimation for the whole sample. As indicated in the literature and shown in our descriptive section that formalization mostly happens among 'top' tier informal firms, we divide our sample into two groups based on their revenues before they switch from informal to formal status. Model 2 in Table 6 indicates the estimates for the top 10 per cent.

Results from model 1 reveals that non-switchers have lower revenues than formalized ones (Table 6). The coefficient of this variable in model 1 indicates that overall the revenues of informal household businesses (non-switchers) is about 20 per cent less than their formalized counterparts. The coefficient of variable *'switcher' (after formalization)* indicates that formalization increases a firm's revenue by approximately 15 per cent on average, holding other constant. Rand and Torm (2012a) find a similar rate of profit gains for formalized households using the same SME surveys in 2007 and 2009.

The estimation for the top 10 per cent reveals an interesting story. While formalized households are much stronger than informal businesses, formalization does not bring them any benefit. The coefficient of the variable *'switcher' (after formalization)* is insignificant (model 2, Table 6). Furthermore, when we control for pre-formalization trend by using the dependent variable as the growth of revenue, the variable *'switcher' (after formalization)* becomes negative and significant at 10 per cent as shown in model 3, Table 6. This indicates that non-switchers have no disadvantages over their formalized counterparts. McCaig and Nanowski (2017) also show that formalization does not bring any benefit for formalized firms if controlling pre-formalization trend using the double-difference method. The result may be one of the reasons explaining why some firms in the 'top' tiers do not register.

Table 6 - Random effect model: Ln(Rev) and ΔLn(Rev)

	Ln(Revenue)All (1)	Ln(Revenue)Top 10% (2)	Revenue growth rate: Top 10% (3)
Switcher (after formalization)	0.152***	-0.064	-0.059*
	(0.033)	(0.112)	(0.031)
Non-switcher	-0.197***	-0.237*	-0.014
	(0.042)	(0.127)	(0.030)
Male owner	0.084***	-0.021	-0.005
	(0.028)	(0.101)	(0.027)
Ln(Age of owner)	-0.400***	-0.183	-0.045
	(0.064)	(0.213)	(0.055)
Owner completed higher secondary school	0.075***	0.141*	0.032
	(0.025)	(0.086)	(0.023)
No. of dependent household members	-0.001	-0.008	0.001
	(0.010)	(0.033)	(0.009)
Ln(Total labor force)	0.773***	0.509***	0.007
	(0.021)	(0.057)	(0.015)
Share of female workers	-0.279***	-0.353*	-0.099**
	(0.050)	(0.182)	(0.048)
Share of production and service workers	0.152***	-0.162	0.100
	(0.053)	(0.247)	(0.069)
Have a CLUR	0.029	0.029	-0.029
	(0.027)	(0.092)	(0.025)
Urban areas	0.094**	-0.026	0.013
	(0.041)	(0.146)	(0.034)
Ha Noi, Hai Phong and HCM city	0.337***	-0.175	-0.049
	(0.056)	(0.162)	(0.036)
Medium, high-tech sector	-0.043	-0.251*	-0.011
	(0.042)	(0.149)	(0.035)
Year 2007	0.075**	-0.110	0.129***

	(0.033)	(0.116)	(0.035)
Year 2009	0.239***	0.133	-0.052
	(0.034)	(0.117)	(0.035)
Year 2011	0.323***	0.405***	0.136***
	(0.037)	(0.126)	(0.037)
Year 2013	0.367***	0.323**	-0.034
	(0.038)	(0.136)	(0.040)
Year 2015	0.323***	0.038	0.024
	(0.052)	(0.168)	(0.048)
Constant	13.019***	14.367***	0.189
	(0.248)	(0.824)	(0.213)
Observations	5,424	516	516
Chi2-Statistics	2,580	140	74
p-value	0.000	0.000	0.000
R2	0.481	0.205	0.126

Note: Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Source: Authors' calculation using SME data 2005–15.

Table 7 - Random effect model: Ratio of taxes to VA

	Tax/Rev: All (1)	Tax/Rev: Top 10% (2)	Ln(Tax): Top 10% (3)
Switcher (after formalization)	0.005***	0.004***	2.064***
	(0.001)	(0.001)	(0.356)
Non-switcher	-0.002***	0.001	-0.571
	(0.001)	(0.002)	(0.417)
Male owner	-0.000	-0.000	-0.461
	(0.000)	(0.001)	(0.322)
Ln(Age of owner)	0.001	0.000	1.350**
	(0.001)	(0.003)	(0.687)
Owner completed higher secondary school	-0.000	-0.001	0.277
	(0.000)	(0.001)	(0.274)
No. of dependent household members	0.000	-0.000	0.129
	(0.000)	(0.000)	(0.105)
Ln(Total labor force)	0.001***	0.001	0.856***
	(0.000)	(0.001)	(0.183)
Share of female workers	0.001	-0.001	0.284
	(0.001)	(0.002)	(0.585)
Share of production and service workers	-0.004***	0.003	-0.486
	(0.001)	(0.003)	(0.790)
Have a CLUR	0.000	0.003**	0.569*
	(0.000)	(0.001)	(0.294)
Urban areas	0.001**	0.004**	0.731
	(0.001)	(0.002)	(0.477)
Ha Noi, Hai Phong and HCM city	0.007***	0.010***	1.316**
	(0.001)	(0.002)	(0.533)
Medium, high-tech sector	0.002***	0.000	0.465
	(0.001)	(0.002)	(0.489)
Year 2007	-0.003***	0.001	-0.373
	(0.001)	(0.001)	(0.367)
Year 2009	-0.005***	0.000	-0.775**
	(0.001)	(0.001)	(0.371)
Year 2011	-0.005***	-0.001	-0.497
	(0.001)	(0.002)	(0.401)
Year 2013	-0.006***	-0.002	-0.197
	(0.001)	(0.002)	(0.432)
Year 2015	-0.009***	-0.003	-1.370**
	(0.001)	(0.002)	(0.535)
Constant	0.003	-0.006	-0.943
	(0.004)	(0.011)	(2.659)
Observations	5,424	516	516
Chi2-Statistics	422	78	136
p-value	0.000	0.000	0.000
R2	0.119	0.218	0.274

Note: Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: Authors' calculation using SME data 2005–15.

We now turn to evaluate the cost of formalization by considering whether households have to pay higher taxes if they register or benefit from tax evasion if they stay in the informal sector. Table 7 documents the random effects of formalization on a firm's percentage of taxes to revenues. As can be seen from this table, household businesses pay higher taxes after formalization and the results are robust in all specifications. Specifically, a formalized household in the top 10 per cent has to pay around two times more taxes than before registering (model 3, Table 7). On the other hand, staying in the informal sector saves households' costs. An informal household can preserve 0.002 percentage points of taxes over revenue compared to formalized businesses in the whole sample. Therefore, households do not formalize because they benefit from tax evasion.

As indicated by Giang et al. (2016), it is quite common in the business sector that business owners have incentives to collude with state officials for personal gains at the expenses of the state. Although we do not have information to indicate whether tax gains come from collusion or distortion, our evidence shows that informal households benefit from not paying taxes. For the top 10 per cent, we cling to the assumption that those households cannot benefit from tax evasion without the help from tax officials. Our assumption rests on the fact that the bigger the household is, the more 'visibility' it has (Rand and Tarp, 2012). It is also shown in our descriptive statistics (Tables 4and5) that households with higher revenues, for example the top 10 per cent, have the size in terms of labour workforce which is almost double that of small businesses. Therefore, IHBs might deal with tax officials to stay informal for the benefits of tax evasion.

Do government controls promote formalization?

As indicated in the literature, firms are more likely to register in countries with a better quality of the legal system (Dabla-Norris et al., 2008) or they are forced to register by government interventions in countries with a weak rule of law (De Andrade et al., 2014). We add one more reason for the case of Viet Nam where informal households formalize to avoid harassment and bribes from state officials (Cling et al., 2012). In order to investigate effects of these factors on the probability of staying in the informal sector, we estimate random effect probit model where the dependent variable is a dummy which takes the value one if a household is formalized and zero if a business is informal. The results are documented in Table 8.

Table 8 - Random effect probit model of formalization - All sample

	(1)	(2)	(3)
Paid at least one informal payment	-0.126***		
	(0.014)		
Spend time to deal with government officials		-0.162***	
		(0.011)	
Poor knowledge/no interest in tax law			-0.307***
			(0.011)
Male owner	-0.019*	-0.023**	-0.022**
	(0.011)	(0.011)	(0.010)
Ln(Age of owner)	0.024	0.041*	0.054***
	(0.023)	(0.023)	(0.020)
Owner completed higher secondary school	0.038***	0.039***	0.030***
	(0.010)	(0.009)	(0.009)
No. of dependent household members	-0.004	-0.004	-0.004
	(0.004)	(0.004)	(0.003)
Ln(Total labor force)	0.069***	0.069***	0.044***
	(0.008)	(0.008)	(0.007)
Share of female workers	-0.067***	-0.065***	-0.051***
	(0.019)	(0.019)	(0.017)
Share of production and service workers	0.096***	0.085***	0.090***
	(0.022)	(0.022)	(0.022)
Have a CLUR	0.019*	0.021**	0.019*
	(0.011)	(0.010)	(0.010)
Urban areas	0.058***	0.049***	0.046***

	(0.013)	(0.013)	(0.011)
Ha Noi, Hai Phong and HCM city	0.089***	0.062***	0.002
	(0.017)	(0.017)	(0.014)
Medium, high-tech sector	0.044***	0.044***	0.022*
	(0.014)	(0.013)	(0.011)
Year 2007	0.145***	0.141***	0.143***
	(0.014)	(0.014)	(0.014)
Year 2009	0.214***	0.208***	0.214***
	(0.014)	(0.014)	(0.014)
Year 2011	0.314***	0.305***	0.304***
	(0.015)	(0.015)	(0.015)
Year 2013	0.342***	0.326***	0.299***
	(0.015)	(0.015)	(0.015)
Year 2015	1.027***	1.008***	0.980***
	(0.016)	(0.016)	(0.016)
Observations	5,424	5,424	5,424
Chi2-Statistics	6,325	6,486	7,205
p-value	0.000	0.000	0.000
R2	0.503	0.524	0.571

Notes: Marginal effects; Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Authors' calculation using SME data 2005–15.

To examine how government controls and households' knowledge on the legal system, especially on the tax law, are associated with the probability of being registered, we separate the impacts of '*paying at least one informal payment*' (1 if paid and 0 if did not pay anything), '*spend management time to deal with government officials*' (1 if spent time and 0 if did not), and '*poor knowledge or no interest in tax law*' (1 if the household has poor knowledge of tax law and 0 otherwise) in three specifications in Table 8. These variables are taken in the pre-formalization period, based on the assumption that firms are more likely to register if they were more inspected or had a good knowledge of tax law.

Our results show that paying the informal payment and dealing with government officials in the past do not increase the likelihood of formalization (Tables 8 and 9). Moreover, the coefficient of variable '*poor knowledge or no interest in tax law*' indicates that households, which have poor knowledge of tax law, are less likely to register (model 3, Table 8). For the top 10 per cent, households are indifferent with formalization regardless of involving informal payment or not. In addition, the likelihood of formalization in this 'top' tier business reduces when households spend more time to '*deal with government officials*' and '*have poor knowledge or no interest in tax law*' (models 2 and 3, Table 9). As indicated by Giang et al. (2016: 413), the majority of household businesses are subject to be checked at least once a year and businesses often give informal payment each time they are inspected. Furthermore, business owners often do not understand how the tax level is calculated and have to pay what they are told. It seems that household businesses deal with government officials to stay informal and therefore, they do not need to acquire good knowledge on the tax law.

The above results do not support findings from Cling et al. (2012)'s qualitative study that households register to avoid bribes and harassment. Instead, the results might support our assumption in the previous section that there may be a handshake between informal households, especially those in the top tiers, and tax officials. Although our findings lack evidence to examine whether there is a potential collusion between informal households and tax officials, these are worthy for future qualitative and quantitative studies to investigate the collusion corruption as determinants of informality in developing countries.

Table 9 - Random effect probit model of formalization - Top 10%

	(1)	(2)	(3)
Paid at least one informal payment	-0.027		
	(0.040)		
Spend time to deal with government officials		-0.194***	
		(0.042)	
Poor knowledge/no interest in tax law			-0.268***
			(0.043)
Male owner	-0.049	-0.059	-0.063
	(0.041)	(0.039)	(0.039)
Ln(Age of owner)	0.040	0.079	0.070
	(0.085)	(0.081)	(0.079)
Owner completed higher secondary school	0.047	0.043	0.030
	(0.034)	(0.033)	(0.033)
No. of dependent household members	-0.034***	-0.026**	-0.024**
	(0.013)	(0.013)	(0.012)
Ln(Total labor force)	0.029	0.024	0.013
	(0.023)	(0.022)	(0.022)
Share of female workers	0.019	0.010	0.012
	(0.073)	(0.070)	(0.069)
Share of production and service workers	-0.010	-0.009	0.018
	(0.101)	(0.099)	(0.098)
Have a CLUR	-0.014	-0.013	-0.013
	(0.037)	(0.036)	(0.036)
Urban areas	0.013	-0.045	-0.051
	(0.057)	(0.054)	(0.052)
Ha Noi, Hai Phong and HCM city	0.112*	0.128**	0.054
	(0.061)	(0.056)	(0.055)
Medium, high-tech sector	-0.031	-0.022	-0.029
	(0.058)	(0.054)	(0.052)
Year 2007	0.099**	0.099**	0.101**
	(0.048)	(0.048)	(0.048)
Year 2009	0.159***	0.161***	0.168***
	(0.048)	(0.048)	(0.048)
Year 2011	0.353***	0.350***	0.360***
	(0.050)	(0.050)	(0.049)
Year 2013	0.494***	0.480***	0.485***
	(0.051)	(0.051)	(0.050)
Year 2015	0.955***	0.937***	0.945***
	(0.054)	(0.053)	(0.053)
Observations	516	516	516
Chi2-Statistics	482	504	532
p-value	0.000	0.000	0.000
R2	0.456	0.487	0.509

Notes: Marginal effects; Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Authors' calculation using SME data 2005–15.

5 Conclusion

The informal sector remains large in poor and developing countries. Since the existence of the sector has been seen as a weakness of the economy, identifying determinants of informality to promote the process of formalization is an ideal policy goal for any country. In this paper, we investigate factors associated with the informality of household businesses in Viet Nam using the unbalanced panel data from the SME surveys in Viet Nam in 2005, 2007, 2009, 2011, 2013, and 2015.

The paper finds that most of the informal households are in the bottom of 90 per cent. They are run by lower educated owners and have lower revenue than formalized and formal households. On the other hand, informal household businesses in the top 10 per cent have no disadvantages

in terms of human capital over their formal counterparts. In line with the literature, our results reveal that only strong firms can formalize whereas weaker households stay informal. Furthermore, household businesses in urban areas are more likely to be formalized than those in rural places. Although we find that formalization happens more frequently among the top than the 'lower' tiers, results from the paper show that not all stronger firms formalize.

Using the random effect method, we find that while switchers in the whole sample benefit from an increase in revenues, formalized households in the top 10 per cent do not benefit or even experience a negative revenue growth rate when controlling for pre-formalization trend. Whereas staying informal reduces business costs from tax evasion and this gain is higher if a household is in the top tiers. Results from the paper may explain why a proportion of households in the top-tiers remains informal.

The paper also examines whether government controls and household knowledge on tax law help to promote formalization. The results reveal that being more inspected by government officials and paying the informal payment in the past do not promote the likelihood of formalization, especially among the top 10 per cent. This, coupled with tax benefits from staying informal, raise a suspicion on the handshake between informal households in the top tiers and government tax officials for personal gains. This opens room for future qualitative and quantitative studies to investigate the collusion corruption as a determinant of informality in developing countries.

References

Azuma, Y., and H.I. Grossman (2002). 'A Theory of the Informal Sector'. NBER Working Paper no. 8823. Cambridge, MA: National Bureau of Economic Research. Available at: http://www.nber.org/papers/w8823.pdf

Bacchetta, M., E. Ernst, and J.P. Bustamante (2009). *Globalization and informal jobs in developing countries*. Geneva: ILO and WTO.

Boly, A. (2017). 'On the short-and medium-term effects of formalisation: Panel evidence from Vietnam'. *The Journal of Development Studies*, 1–16.

Botero, J., S. Djankov, R. La Porta, F. Lopez-de-Silanes, and A. Shleifer (2004). 'The Regulation of Labor'. *Quarterly Journal of Economics* 119, no. 4: 1339–82.

Cling, J.-P., M. Razafindrakoto, and F. Roubaud (2011). *The informal economy in Viet nam*. Hanoi: International Labour Organization.

Cling, J.-P., M. Razafindrakoto, and F. Roubaud (2012). 'To be or not to be registered? Explanatory factors behind formalizing non-farm household businesses in Vietnam'. *Journal of the Asia Pacific Economy*, *17*(4), 632–52.

Cross, J. (2000). 'Street vendors, and postmodernity: Conflict and compromise in the global economy'. *International Journal of Sociology and Social Policy*, *20*(1/2), 29–51.

Cunningham, W.V., and W.F. Maloney (2001). 'Heterogeneity among Mexico's microenterprises: An application of factor and cluster analysis'. *Economic Development and Cultural Change*, *50*(1), 131–56.

Dabla-Norris, E., M. Gradstein, and G. Inchauste (2008). 'What causes firms to hide output? The determinants of informality'. *Journal of Development Economics*, *85*(1), 1–27.

De Andrade, G.H., M. Bruhn, and D. McKenzie (2014). 'A helping hand or the long arm of the law? Experimental evidence on what governments can do to formalize firms'. *The World Bank Economic Review*, *30*(1), 24–54.

Demenet, A., M. Razafindrakoto, and F. Roubaud (2016). 'Do informal businesses gain from registration and how? Panel data evidence from Vietnam'. *World Development*, *84*, 326–41.

Fajnzylber, P., W.F. Maloney, and G.V. Montes-Rojas (2009). 'Releasing constraints to growth or pushing on a string? Policies and performance of Mexican micro-firms'. *The Journal of Development Studies*, *45*(7), 1027–47.

Fajnzylber, P., W.F. Maloney, and G.V. Montes-Rojas (2011). 'Does formality improve micro-firm performance? Evidence from the Brazilian simples program'. *Journal of Development Economics*, *94*(2), 262–76.

Friedman, E., S. Johnson, D. Kaufman, and P. Zoido-Lobatón (2000). 'Dodging the Grabbing Hand: The Determinants of Unofficial Activity in 69 Countries.' *Journal of Public Economics* 76, no. 3: 459–92.

General Statistics Office of Vietnam (2013). 'Results of the 2012 establishment census'. Hanoi: Statistical Publishing House.

Giang, D.H., P.T. Xuan, and N.Q. Hai (2016). 'Corruption risks in Vietnam? A household business sector'. *Crime, Law and Social Change*, *65*(4-5), 395–422.

Günther, I., and A. Launov (2012). 'Informal employment in developing countries: Opportunity or last resort?' *Journal of Development Economics*, *97*(1), 88–98.

Harris, J. R., and M.P. Todaro (1970). 'Migration, unemployment and development: A two-sector analysis'. *The American Economic Review*, *60*(1), 126–142.

Hart, K. (1973). 'Informal income opportunities and urban employment in Ghana'. *The Journal of Modern African Studies*, *11*(1), 61–89.

Hussmanns, R. (2004a). *Measuring the informal economy: From employment in the informal sector to informal employment*. Geneva: Policy Integration Department, Bureau of Statistics, International labour Office.

Hussmanns, R. (2004b). 'Statistical definition of informal employment: Guidelines endorsed by the seventeenth international conference of labour statisticians (2003)'. In *7th meeting of the expert group on informal sector statistics (Delhi group)* (pp. 2–4).

Johnson, S., D. Kaufmann, and A. Shleifer (1997). 'The unofficial economy in transition'. *Brookings Papers on Economic Activity* 27, no. 2: 159-239. Washington, DC: Brookings Institution.

La Porta, R., and A. Shleifer (2014). 'Informality and development'. *The Journal of Economic Perspectives*, *28*(3), 109–126.

Levenson, A. R., and W. Maloney (1998). *The informal sector, firm dynamics, and institutional participation*. Washington, DC: The World Bank.

Lewis, W. A. (1954). 'Economic development with unlimited supplies of labour'. *The Manchester School*, *22*(2), 139–91.

Loayza, N. V. (1996). 'The economics of the informal sector: A simple model and some empirical evidence from Latin America'. In *Carnegie-rochester conference series on public policy* (Vol. 45, pp. 129–62). Amsterdam: Elsevier.

Maloney, W. F. (2004). 'Informality revisited'. *World Development*, *32*(7), 1159–78.

Marcouiller, D., and L. Young (1995). 'The Black Hole of Graft: The Predatory State and the Informal Economy'. *American Economic Review* 85, no. 3: 630–46.

McCaig, B., and J. Nanowski (2017). 'Business formalization in Vietnam'. LCERPA Working Paper No. 2018-7. Waterloo, ON: Laurier Centre for Economic Research & Policy Analysis. Available at: http://www.lcerpa.org/public/papers/LCERPA_2018_7.pdf

McKenzie, D., and Y.S. Sakho (2010). 'Does it pay firms to register for taxes? The impact of formality on firm profitability'. *Journal of Development Economics*, *91*(1), 15–24.

Monteiro, J. C., and J.J. Assunção (2012). 'Coming out of the shadows? Estimating the impact of bureaucracy simplification and tax cut on formality in Brazilian microenterprises'. *Journal of Development Economics*, *99*(1), 105–115.

Moreno-Monroy, A. (2012). 'Critical commentary. Informality in space: Understanding agglomeration economies during economic development'. *Urban Studies*, 49(10), 2019–30. doi:10.1177/0042098012448554

Moser, C.N. (1978). 'Informal sector or petty commodity production: dualism or independence in urban development'. *World development*, 6 (9–10), 1041–64.

Nelson, E. G., and E.J. De Bruijn (2005). 'The voluntary formalization of enterprises in a developing economy? The case of Tanzania'. *Journal of International Development*, *17*(4), 575–93.

Nguyen, C., T.B. Tran, and H.A. La (2013). 'The dynamics of Vietnam informal sector: Which policy should be the best?' DEPOCEN Working Paper No. 18. Hanoi: Development and Policies Research Center. Retrieved from https://EconPapers.repec.org/RePEc:dpc:wpaper:1813 (accessed on 18 December 2017).

Nguyen, T., M.-L. Verreynne, and J. Steen (2014). 'Drivers of firm formalization in Vietnam: An attention theory explanation'. *Entrepreneurship and Regional Development*, *26*(7-8), 574–93.

Portes, A., M. Castells, and L.A. Benton (1989). *The informal economy: studies in advanced and less developed countries*. Baltimore, MD: John Hopkins University Press.

Rand, J., and F. Tarp (2012). 'Firm-level corruption in Vietnam'. *Economic Development and Cultural Change*, *60*(3), 571–95.

Rand, J., and N. Torm (2012a). 'The benefits of formalization: Evidence from Vietnamese manufacturing SMEs'. *World Development*, *40*(5), 983–98.

Rand, J., and N. Torm (2012b). 'The informal sector wage gap among Vietnamese micro-firms'. *Journal of the Asia Pacific Economy*, *17*(4), 560–77.

Snyder, K. A. (2004). 'Routes to the informal economy in New York's East Village: Crisis, economics, and identity'. *Sociological Perspectives*, *47*(2), 215–40.

Soto, H. de. (1989). 'The other path: The invisible revolution in the third world'. New York: Harper and Row Publishers.

Tenev, S., A. Carlier, O. Chaudry, and Q.-T. Nguyen (2003). *Informality and the playing field in vietnam's business sector*. Washington, DC: World Bank.

Williams, C. C., M.S. Shahid, and A. Martínez (2016). 'Determinants of the level of informality of informal micro-enterprises: Some evidence from the city of Lahore, Pakistan'. *World Development*, *84*, 312–25.