Chapter 22
Firms' Characteristics and Tax Evasion

Md. Harun Ur Rashid
https://orcid.org/0000-0001-7660-9531
International Islamic University Chittagong, Bangladesh

Anika Morshed
International Islamic University Chittagong, Bangladesh

ABSTRACT

The study investigates whether the firms' characteristics, including ownership structure, audit, and familiarity affect tax evasion. The study has used the ordinary least square (OLS) to analyze cross-sectional data of 85 countries between 2007 and 2015 collected from the world enterprise survey. The study finds that the domestic, foreign, and government ownership in the firm increases tax evasion, whereas proprietorship and female ownership decreases the tax evasion. Further, the results show that familiar firms with international recognition are less inclined to evade tax. Similarly, the negative relationship between audit and tax evasion implies that the government should make it compulsory to check the financial statements of the firms by the external auditors, which, in turn, reduces the firms' tax evasion. Moreover, the firms that face more financial constraints evade more tax than the firms with access to the bank loan and solvent ones. The tax authorities should also consider reducing the corporate tax rate as the higher tax rates stimulate the firms to evade more tax.

INTRODUCTION

Research on tax evasion has been come out to an obligatory part for every country in this competitive era as most of the real earnings of a country go to the trash for the lack of investigation on taxpayers or tax management. Much more analysis is needed on the topic of firms' tax evasion, which can be theoretical or empirical. Nevertheless, most of the research can be seen from the theoretical perspective due to the lack of data as firms would not like to take the risk of sharing their data. Another reason is, it is complex to capture tax evasion analytically (Alm, Liu, & Zhang, 2019). However, prior research evidenced

DOI: 10.4018/978-1-7998-5567-5.ch022

the significant effect of firm characteristics on tax evasion at both the micro-level (Blackburn, Bose, & Capasso, 2012; Mitra, 2017) and macro-level (Alm, Martinez-Vazquez, & McClellan, 2016; Beck, Lin, & Ma, 2014). Most of the literature has been discussed on individual tax evasion as well as income tax avoidance and a growing literature is working on firm tax evasion in the present situation because of being essential in today's financial condition in the world.

Tax evasion occurs if taxpayers intentionally do not comply with their tax obligations either through the failure of filling return, misreporting income or overstating expenses, or making a lower payment compared to actual tax despite having the ability to pay tax (Rashid, 2020; Islam et al., 2020). Tax evasion is considered as an illegal act which breaks law and influences not to pay tax (Besley, Jensen, & Persson, 2019). It is a willful task which is done in an illegal way to reduce tax liability (Doerrenberg & Duncan, 2019). Tax evasion inaugurated with the informal economy is also called black, underground or shadow economy (Alm *et al*., 2016; Slemrod, 2007).

Tax evasion has been considered as a subject of discussion for academic research in both developed and developing countries (Umar *et al*., 2019; Yamen *et al*., 2018). However, most of it relates to individuals. Most of the previous studies on tax evasion are based on the study of Allingham & Sandmo (1972), which focused on theoretical analysis from the individual perspective, and did not consider the firm with some exceptional studies (Alm *et al*., 2016; Carrillo, Pomeranz, & Singhal, 2017). Though most of the empirical research has mostly investigated the individual income tax evasion, empirical researches on firm tax evasion have been started recently (Abdixhiku, Pugh, & Hashi, 2018; Alm *et al*., 2019; Alm *et al*., 2016).

Research on firm tax evasion has become more critical as firms play a crucial role in an economy and the country's GDP as well. According to Torgler & Schneider (2007), tax evasion is covering more than 50% of countries, especially low-income countries' GDP. If firms continue to evade tax, then most of the countries' tax revenue will go in vain. The study is an attempt to measure which factors influence firms to evade tax and how much firms evade tax across the countries. Social general and economic developments are mostly depended on tax collection capacity. Through firms' tax evasion, a large amount of tax gap is created in government earnings which are one of the crucial reasons behind a country's underdevelopment condition. It is considered a severe loss of government revenue, resulting in pressure to the government in providing public services smoothly (Islam et al., 2020). Therefore, it has been a challenging issue for governments as well as tax authorities to increase the tax revenue from the taxpayers. The marginal net benefit from the firms' income decreases because of poor financial development an economy. The lower stage of financial development makes the higher incidence of evading tax and greater the underground economy size. These types of initiatives are the reasons for resource wastes or inefficient uses (Blackburn *et al*., 2012). Also, imperfect credit-information sharing system and lower level of bank branch penetration, increase tax evasion more (Beck *et al*., 2014; Blackburn *et al*., 2012).

Dearth studies on tax evasion at the firm level are unfortunate, especially given the matter that in most of the countries, firms pay the bulk share of taxes and also consider the bulk of tax evasion as well (Crocker & Slemrod, 2005; Nur-tegin, 2008). Moreover, as per the suggestion of the study of Abdixhiku *et al*. (2018), there is a considerable gap and thus a permanent need for international and cross country research on tax evasion, while the research worldwide at firm-level characteristics is still insufficient. Therefore, the study aims to reduce the gap by introducing some empirical findings for firm characteristics, cross-country and global tax evasion features.

The investigation of some other internal characteristics of the firm on tax evasion is still unexplored across the countries. For example, the firms' size, age, ownership structure (Rafay *et al*., 2016), financial

management process, workforce, top management experience, familiarity, audit have yet to be investigated on tax evasion. The limited research on the relationship between firms' characteristics and tax evasion is also a substantial gap in the existing literature. Therefore, the study aims to examine whether the firm characteristics affect tax evasion.

Do the firm characteristics matter for tax evasion? What factors influence the firms in the decision-making process of tax evasion? Along with the responses of the research questions, the study contributes to the existing literature in the following ways. First, shedding light on the theoretical discussion, this study provides empirical evidence on the crucial linkage between firm characteristics and tax evasion. Second, the study aims to examine, to what extent, the ownership structure, funding behaviour and top management experience lead the firms in tax evasion decision-making in line with the study of Beck *et al*. (2014) and Alm *et al*. (2019). Third, the study includes three heterogeneities such as firm-size-large, medium and small firms; industry- manufacturing and servicing firms; and gender at top-level management- male and female along with firm age, audit, international recognition to provide robust results. Finally, the outcome of this research will guide the government and policymakers to understand the relationship between different firm characteristics and tax evasion, which in turn, helps them to take necessary steps to develop policy frameworks for reducing tax evasion.

The rest of the paper is structured as follows. Section 2 discusses the theories and reviews the literature. Section 3 describes the research methods and design with the empirical specification. Section 4 analyzes the results and presents a discussion of the study. Section 5, finally, sets out the conclusions and implications, along with the limitations of the study and suggestions for future research.

LITERATURE REVIEW

Tax evasion is the reflection of the information gap, as agency problems exist between firms and shareholders. By understanding financial policies, firms can reduce information gap and agency problems which have been reconsidered by economists. Desai (2005) considered tax evasion from the perspective of agency cost theory because managers use tax evasion as a rent extension with them. He also added that tax evasion has a positive relation with information asymmetry. The higher the information gap creates; the more tax evasion takes place in firms. It incites firms' managers to hide information from the shareholders and conceals the real income and cash flows of firms. On the other hand, the shareholders and owners would like to know the actual financial position of their business; it may demotivate the tax evasion (Alm *et al*., 2016; Zhang, Chen, & He, 2018).

Firms and managerial transactions also tamper as tax evasion is not being considered as a legal term. Managers of firms are generally able to divert income earning in the form of rent and show less income than the general one to the shareholders and the tax authorities. If the percentage of tax sheltering is higher on time than the diversion by managers, then it can be taken as strong complementarities (Rafay & Ajmal, 2014). If the cost of tax sheltering is not high and complementarities are not too strong, the managers reduce the tax with the diversion of rents and engaging in more tax-saving activities as well (Desai, 2005). In this case, at what extent, the managers will be able to evade tax highly depend on the external pressure and controlling power of the firm's owners.

Assessing a lending program to estimate whether the firm faces credit constrained, Banerjee & Duflo (2014) documented that the firms face severely credit constrained when the marginal rate of return of

borrowing funds is too high to bear. Due to the unavailability of external funding sources, they find tax evasion as a way to increase internal funds to manage firms' costs (Alm *et al*., 2019).

To ensure the institutional transparency and familiarity, the firms should improve audit and reporting standard to reduce corruption and tax evasion (Hudori & Mustikasari, 2020). The good quality accountants are also required as a means of promoting accountability and ethical action, complying with tax rules and inviting their customers to avoid tax evasion (Khlif & Guidara, 2018)

Firms' Ownership Structure and Tax Evasion

Firms' ownership structure has substantial impacts on tax evasion as either they play the role of decision-makers or create pressure on the management to maximize their interests. Firms with domestic owners are more likely to be involved in tax evasion than firms with foreign owners (Alm *et al*., 2016). The domestic owners are like to be involved in bribes and get enough freedom as they are not answerable to anyone for their activities. On the other hand, foreign owners are seen not to be intended to evade tax as they are accountable both to their government and foreign government for their business activities (Alm *et al*., 2016; Zhang *et al*., 2018). Though some researchers found that foreign firms are not seemed to have a significant impact on tax evasion, Annuar, Salihu & Obid (2014) found a positive relationship between foreign ownership and tax evasion. And they evidenced that foreign firms pay lower taxes compared to local firms despite making higher profits. Preuss (2010) also documented a consistent positive relationship between tax avoidance and foreign ownership, arguing that the foreign-owned firms use profit-shifting strategies to reduce their tax liabilities. Government-owned firms are also connected with tax evasion. The main reason behind the involvement with tax evasion of government owners is not to manage the firms directly. The management can easily hide the actual income from government and tax authorities as tax audits cannot be feasible because of their political connections (Salihu, Annuar, & Obid, 2015). However, the study of Payne and Saunoris (2020) found a negative relationship between government-owned firms and tax evasion. If the government are trustworthy and free from corruption, then government-owned firms may be less tendency to be involved with tax evasion.

Similarly, the proprietorship owned and controlled by a single owner is more intended to evade tax (Alm *et al*., 2016; Bornemann, Jacob, & Sailer, 2019). In the sole proprietorship, the owner is always in need of capital and faces obstacles in managing loans compared to large firms; he/she chooses tax evasion as a more accessible way to gather necessary capital.

The probability of tax sheltering is lower when the firm is under control of female ownership and female CFOs as they are less likely to be involved in tax evasion compared to males (Bornemann *et al*., 2019; Francis *et al*., 2014). Francis *et al*. (2014) worked on a sample of changing ownership from male to male and another sample of changing ownership from male to female. There result indicated that the probability of tax evasion increases in male-to-male transition. On the other hand, there is a decreasing probability when the transition is male to female. Therefore, the study assumes that female ownership and female participation in top management has a negative relation with tax evasion.

Funding Behaviour and Tax Evasion

Funding behaviour can be defined as the usage and accessibility of the fund. It also means the source from which the firms are using to meet their needs and get accessibility whenever they face crises of capital. Some firms use a bank loan or line of credit, while others do not need any loan. Some firms use

banks to finance their investments, while others use banks to finance their working capital. Some other firms have been identified as access to finance as major constraints. Previous studies showed that the firm decision to evade tax is based on different funding behaviour. For instance, firms that face more financial constraints likely to be involved in more tax evasion than the firm not needing any loan (Alm *et al*., 2019). There are two reasons why financial constraints push firms toward tax evasion. At first, financial constraints create prevention in the path of accessing external finance, for which the firms intense to evade tax to gain revenues intentionally. In capital market imperfections, the firms find external funds so difficult or expensive to manage, and thereby they are forced to depend on internal funds. Financial constraint firms face difficulties to get access to external finance from financial institutions. For instance, the banks require collateral - something pledged as security for repayment of a loan, to be forfeited in the event of default before sanctioning loan to firms. They find tax evasion as a way to increase internal funds more to manage firms' costs as they cannot get external funds. Second, underdeveloped financial markets influence firms towards the informal sector rather than formal or legal sectors. Also, it is straightforward to deny obligations and other official rules in the informal sector (Alm *et al*., 2019). In underdeveloped financial markets, credit is costly and less available than the developed markets (Johnson *et al*., 2000).

On the other hand, the solvent firms may have less tendency to evade tax and would like to pay more tax than the firms need a loan or the firms which are in the line of credit. Therefore, it is assumed that there is a negative relationship between solvent firms and tax evasion. On the other hand, the firms which are with a bank loan or line of credit have a high tendency to evade tax. The underlying reason behind tax evasion by loan taking firms is loan cost[1] for which the actual amount of loan increases for some additional expenses. Hence, the firms feel to evade tax for recovering loans with additional costs (Hasan *et al*., 2014). The study of Capasso & Santoro (2016) documented that the firms which have taken bank loan show less tendency to evade tax as their banks are of their risks of financial transactions (Sinha, 2021; Gupta & Biswas, 2021). Nevertheless, Hasan *et al*. (2014) found a positive relationship between the firms obtained a bank loan and tax evasion as a pressure of repayment of the bank loans with interest within due time makes the firms' manager think of tax evasion.

Audit and Familiarity of Firms and Tax Evasion

Chen *et al*. (2019) documented that firms try to shelter their income and decide to evade tax only if it is proved that the tax authorities do not perform the investigation. The firms which are certified by external auditors are less likely to be involved in tax evasion (Huseynov & Klamm, 2012). The external auditors check the financial statement of the firms properly and report the exact income in the income statement with verifications (Hudori & Mustikasari, 2020; Khan *et al*., 2020). Similarly, the firms which are internationally recognized have more familiarity than any other firm (Ramzan *et al*., 2020); it encourages them to comply with tax obligations. These kinds of firms may have fewer tendencies to evade tax as they have more fear of losing goodwill if the firms are caught or accused of tax evasion. Therefore, the audit and familiar firms may have negative impact on tax evasion.

METHODOLOGY

Sampling and Data Collection

In order to examine the impact of firm characteristics on tax evasion, the study used a cross-sectional data of 85 countries between 2007 and 2015. The study used a variety of sources for data based on the availability of data. For instance, the International Monetary Fund (IMF) working paper- 2018 has been used to gather the shadow economy as a proxy of tax evasion data that cover the latest data up to 2015. For the measurement of the firm characteristics, the study uses the country-level aggregated data from the World Enterprise Survey (WES) of the World Bank Group, which collected data over 135,000 firms from 139 countries. The WES creates over 100 indicators that benchmark the quality of the business environment across the globe. As part of its strategic goal of building a climate for investment, job creation, and sustainable growth, the World Bank has promoted improving the business environment as a key strategy for development, which has led to a systematic effort in collecting enterprise data across countries. The countries are surveyed at the firm level at every 3-4 years to understand what firms experience in the private sector. For economic measurement, GDP, inflation, and tax rate have been gathered from World Bank Indicators.

Dependent Variable

Tax evasion (TE) is used as a dependent variable which is a proxy of the shadow economy (Yamen *et al*., 2018). Though some researchers have used hypothetical perceptions of evasion or government estimation, none is better than others (Hardeck *et al*., 2018). As actual tax evasion cannot be measured and impossible to determine, many researchers have used the shadow economy as a proxy for tax evasion (Schneider & Buehn, 2012). Shadow economy determines all hidden economic activities which are concealed from official authorities.

This research is based on the MIMIC model (Multiple Causes Multiple Indicators), a shadow economy macroeconomic measure. The MIMIC model takes various factors such as tax burden, regulatory burden, economic freedom index, business freedom index, unemployment rate and GDP per capita into account (Schneider, Buehn, & Montenegro, 2010) since tax evasion directly affects the dimensions of the shadow economy over time.

Independent Variables

The study has used different types of firm characteristics as independent variables based on country-level aggregated data as the data are available in the World Enterprise Survey of World Bank group. First, the study includes the ownership structure such as domestic owners (DO), foreign owners (FO), government owners (GO), female owners (FeO) and Proprietorship (P) as independent variables. Since the different owners have an interest in the earning management of the firms; they play a significant role in influencing the decision-making process of firms (Nafti, Kateb, & Masghouni, 2020).

Moreover, whether a firm evades tax significantly depends on its financial access or financial constraint (Alm *et al*., 2019). Therefore, this study examines a variety of funding behaviour such as firms with a bank loan/line of credit, not needing a loan (solvent firms), using banks to finance investments, using supplier/customer credit to finance working capital and firms identifying access to finance as a

major constraint. If financial constraints increase in an economy, tax evasion will also increase. There are also problems with information sharing in financial transition and for which firms do not feel free to access loans or any other financial help from financial institutions. Thus, a positive relationship exists between tax evasion and financial constraints. On the contrary, since the solvent firms can manage necessary funds form internal sources for which they need not bear any loan cost. As a result, the firms make a higher profit and keep a portion of the profit as reinvestment which makes them more solvent. On the other hand, the firms which are with a bank loan or line of credit have a high tendency to evade tax.

Finally, the study also included audit and familiarity as crucial explanatory variables of firm characteristics. Whether a firm will conceal income for tax evasion highly depends on the audit and investigation (Chen *et al*., 2019). Higher the possibility of an audit, lower the possibility of tax evasion (Rashid, 2020) imply that verification of financial statement by external auditors may reduce tax evasion (Hudori & Mustikasari, 2020). Similarly, the familiar firms with international recognition may not take the risk of losing their reputation by tax evasion.

Control Variables

For cross-country investigation, it is essential to include a few environmental control variables to regulate the country's social and economic differences (Yamen *et al*. (2018). The study uses two types of control variables- institutional and economic factors. The institutional factors cover firms' size (number of workers) age, and top managers' experience. On the other hand, the environmental factors include GDP, inflation and tax rate; both of these factors have a significant effect on tax evasion (Abdixhiku *et al*., 2018; Atwood & Lewellen, 2019; Carrillo *et al*., 2017; Chen *et al*., 2019; Dyreng, Hanlon, & Maydew, 2018; Gupta, 2008).

Firm size is related to the overall firm's assets, profitability, industry sunk cost and more management layers, more sharp skills, number of departments and functions (Doerrenberg & Duncan, 2019; Gupta, 2008). Among smaller firms, tax evasion is highly prevalent, and they are often not qualified for tax exemption compared to large firms, so they choose a way of tax evasion to cope up with the large firms in the competitive market (Benczúr, Kátay, & Kiss, 2018; Irianto, Sudibyo, & Wafirli, 2017). Therefore, the sizes of the firms negatively impact the tax evasion as prior studies showed that the larger the firms' size, the lower the level of tax evasion (Salihu *et al*., 2015). Similarly, the age of firms has a more considerable influence on tax evasion. Gatsi, Gadzo, and Kportorgbi (2013) and Sharma and Mitra (2015) found a negative correlation between age of firms and tax evasion as new firms always intend to reap more profits. In addition, as a newcomer, they cannot earn much; so new firms find tax evasion as a way of increasing profit.

However, the firms with female participation in the top management are seen in less intended in tax evasion compared to males (Francis *et al*., 2014; McGee & Preobragenskaya, 2006). Since the female is more risk-averse than that of male, they opposed tax evasion. Moreover, female directors do their best to balance the responsible behaviours of firms toward society and shareholders. Hoseini, Gerayli, and Valiyan (2019) have shown that female makes better decisions than men to promote financial report transparency. Therefore, there may have a negative relationship between tax evasion and a top female manager.

Since the shadow economy represents the percentage of GDP, the countries which have a broader shadow economy are more intended to tax evasion (Schneider, Raczkowski, & Mróz, 2015; Tsakumis, Curatola, & Porcano, 2007). Similarly, firms quickly tend to evade tax when inflation occurs; the nominal

disposable income is eroded. A positive relation between tax evasion and inflation can happen if the risk aversion associated with the real disposable income rises (Crane & Nourzad, 1986; Islam et al., 2020) and the net effect on tax revenues by inflation is generally not believed (Besley, Jensen, & Persson, 2019). Moreover, the relationship between tax rate and tax evasion is also positive as with increasing one percent of tax rates, three percentages of tax evasion rate go up (Javorcik & Demir, 2019).

OLS Regression Model

OLS (Ordinary Least Square) method has been used to examine the relationship between firms' characteristics and tax evasion; the regression method is:

Model 1-2: Tax evasion= *f* (Ownership structure, funding behaviour, other specific characteristics, economics factors)

$$TE_i = \alpha_0 + \beta_1 DO_i + \beta_2 FO_i + \beta_3 GO_i + \beta_4 FeO_i + \beta_5 P_i + \beta_6 Age_i + \beta_7 Size_i$$
$$+\beta_9 Audit_i + \beta_8 Familar_i + \beta_{10} Tax\ Rate_i + \beta_{11} GDP_i + \beta_{12} INF_i + \beta_{13} BLFI_i$$
$$+\beta_{14} FCF_i + \beta_{15} Solvent_i + \beta_{16} FBL_i + \beta_{17} TME_i + \varepsilon_i$$

Model 3-10: Further to investigate the robustness of the impact of firms' sizes, top management genders, and industry types on tax evasions, the study offers the following econometric models.

Tax evasion= *f* (Ownership structure; funding behaviour; other specific characteristics; economics factors; small, medium and large firm; female and male in top-level management; and manufacturing and servicing firms).

$$TE_i = \alpha_0 + \beta_1 DO_i + \beta_2 FO_i + \beta_3 GO_i + \beta_4 FeO_i + \beta_5 P_i + \beta_6 Age_i + \beta_7 Size_i +$$
$$\beta_8 Audit_i + \beta_9 Familar_i + \beta_{10} Tax\ Rate_i + \beta_{11} GDP_i + \beta_{12} INF_i + \beta_{13} BLFI_i + \beta_{14} FCF_i +$$
$$\beta_{15} Solvent_i + \beta_{16} FBL_i + \beta_{17} TME_i + \Upsilon_1 Small_i + \Upsilon_2 Medium_i + \Upsilon_3 Large_i +$$
$$\S_1\, TMF_i + \S_2\, TMM_i + Ø_1 Manufacturing_i + Ø_2 Servicing_i + \mu_i + \varepsilon_i$$

Where, in model 1, from β_1 to β_5, β_6 to β_9 and β_10 to β_12 are the coefficients of ownership structure, firms' specific characteristics, and economic factors, respectively. The elaborations of all variables mentioned in Table 1 and =error term for country; = the number of countries used for the study. In model 2, along with model 1, along with model 1, β13 to β_16 and β_17 refers to funding behaviour and top management experiences respectively have been added. Additionally, in model 2, to *Y*3 are the coefficients of firm sizes, small, medium, and large while §1 to §12 and Ø1 and Ø2 are the coefficients of top management male and female, and industry types, manufacturing and servicing firms, respectively. The error term of μ_i and Ɛ_i represent between and within entity error.

Table 1. Variables measurements and data sources

Variables	Short forms	Data Source and Measurements
Dependent variable		Shadow economy around the world- IMF- https://www.imf.org/~/media/Files/Publications/WP/2018/wp1817.ashx
Tax Evasion	TE	Tax Evasion has been adopted as the proxy of the shadow economy. It is defined as the "Market-based production of goods and services, whether legal or illegal, that escapes detection in the official estimates as a percentage of GDP."
Independent and control variables		World Bank Enterprise Surveys - https://www.enterprisesurveys.org/data
Ownership structures		
Proprietorship	P	Percent of firms with the legal status of Sole Proprietorship
Domestic owners	DO	The proportion of private domestic ownership in a firm (%)
Foreign owners	FO	Percent of firms with at least 10% of foreign ownership
Government owners	GO	Percent of firms with at least 10% of government/state ownership
Female owners	FeO	Percent of firms with female participation in ownership
Funding behaviours		
Bank loan	FBL	Percent of firms with a bank loan/line of credit
Solvent firms	Solvent	Percent of firms not needing a loan
Loan for financial investment	BLFI	Percent of firms using banks to finance investments
Financially constraint firms	FCF	Percent of firms identifying access to finance as a major constraint
Familiarity	Familiar	Percent of firms with an internationally recognized quality certification
Audit	Audit	Percent of firms with an annual financial statement reviewed by external auditors
Control variables		
Age	Age	Age of the establishment (years)
Firms' Size	Size	Number of workers
Top management experience	TME	Years of the top management experience working in the firm sector
Economic factors		World Bank Groups- https://data.worldbank.org/indicator
Tax rate	Tax rate	Individual country's corporate tax rate
GDP	GDP	Annual Gross Domestic Product per capita
Inflation rate	INF	Rate of price change in the economy as a whole.
Institutional Characteristics		World Bank Enterprise Surveys-https://www.enterprisesurveys.org/employment-indicators
Small firm	Small	Individual countries' average percentage of firms of which employees number below 20 (1-19).
Medium size firm	Medium	Individual countries' average percentage of firms of which employees' numbers are from 20 to 99.
Large size firm	Large	Individual countries' average percentage of firms of which employees' number are 100 or above.
The female manager at the top level	TMF	The average percentage of female in the top management of individual sample country's firms
Male manager at the top level	TMM	The average percentage of male at the top management of individual sample country's firms.
Manufacturing firms	Manufacturing	Percentage of firms in the manufacturing sector of each of the sample countries.
Services firms	Servicing	Percentage of firms in the service sector of each of the sample countries.

Table 2. Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
TE	85	30.20	10.15	11.75	63.47
Small	85	23.51	12.51	1.6	73.02
Medium	85	34.24	10.10	7.33	60.52
Large	85	42.26	18.78	0.5	90.18
TMF	85	18.18	21.90	0.83	100
TMM	85	80.73	21.77	0.5	99.13
Manufacturing	85	44.13	17.53	8.12	96.12
Servicing	85	55.87	17.53	3.88	91.88
FBL	85	33.59	16.31	2.7	79.6
Solvent	85	46.23	14.18	6	84.6
BLFI	85	25.55	12.21	0.7	53.1
FCF	85	26.39	17.02	0.9	75
Age	85	16.16	4.42	8.2	28.3
DO	85	86.85	12.67	35.2	100
FO	85	12.66	12.65	0	73.3
GO	85	1.04	1.89	0	9.6
P	85	36.33	24.66	0.4	82
Familiar	85	18.83	10.64	0.7	53.4
Audit	85	49.11	21.44	7.8	96.1
FeO	85	33.98	14.11	4.2	69.2
TME	85	16.59	4.10	9.5	28.8
Size	85	39.35	26.70	10.6	184.9
Tax rate	85	38.64	13.54	12	84.5
GDP	85	6701.86	8231.56	243.1	53561.89
INF	85	5.44	5.95	-1.09	34.7

RESULTS AND DISCUSSION

Descriptive Analysis

Table 2 shows the descriptive analysis of 85 countries. In the level of tax evasion, a considerable diversity can be seen. The tax evasion among the sample countries ranges from 11.75% to 63.47% with a mean and standard deviation of 30.2% and 10.15% respectively. Most of the firms are controlled by the domestic ownership as their percentage of shares is 86.85% which is more than any other ownership. The descriptive statistics also show that the majority of the firms are solvent and not needing any loan as their percentage is 46.23. The majority of the firms of the sample countries are large (42.26%), while the number of small firms is in the lowest (23.51%). Most of the firms' top management is controlled by the male (80.73%), whereas the percentage of female managers in the top management is only 18.18%.

The percentage of services firms (55.87%) is higher than that of manufacturing firms (44.13%) in the sample countries. The tax evasion and all other factors highly vary among the countries as their standard deviation are too high.

Correlations

Table 3 shows the pairwise correlation among variables. The findings show that firms needing bank loan (FBL), firms use bank loan as an investment (BLFI) and solvent firms have a negative relationship with tax evasion, while financially constraint firms (FCF) show positive correlations. The study also shows that domestic ownership (DO) has a negative correlation, while foreign ownership, government ownership and proprietorship have a positive correlation with tax evasion. Moreover, both the audit and familiarity have been found in a negative correlation with tax evasion. The results indicate that firms with more familiarity and more prolonged periods of top management reduce the level of tax evasion.

Table 3a. Pairwise correlations

	TE	FBL	Solvent	BLFI	FCF	Age	DO	FO
TE	1							
FBL	-0.399***	1						
Solvent	-0.256**	0.084	1					
BLFI	-0.328***	0.644***	0.065	1				
FCF	0.301***	-0.144	-0.68***	-0.057	1			
Age	-0.151	0.392***	0.153	0.396***	-0.165	1		
DO	-0.229**	0.078	0.077	0.135	-0.107	-0.056	1	
FO	0.208*	0.014	-0.035	-0.067	0.004	0.115	-0.903***	1
GO	0.353***	-0.305***	-0.134	-0.249**	0.083	-0.265**	-0.374***	0.297***
P	0.309***	-0.419***	-0.349***	-0.154	0.366***	0.049	-0.0781	-0.028
FeO	-0.136	0.307***	0.093	0.128	-0.208*	0.095	-0.336***	0.122
Familiar	-0.37***	0.162	0.255**	0.054	-0.458***	0.169	-0.051	0.211*
Audit	-0.148	0.296***	0.125	0.334***	-0.144	0.430***	-0.124	0.403***
TME	-0.293***	0.537***	0.141	0.343***	-0.164	0.659***	0.086	-0.008
Size	-0.151	0.239**	-0.002	0.094	-0.230**	0.412***	-0.136	0.204*
Tax rate	0.052	-0.206*	0.062	-0.044	-0.015	-0.056	-0.122	-0.006
GDP	-0.012	0.127	0.139	0.051	-0.128	0.063	0.063	0.003
INF	-0.009	-0.190*	0.120	-0.079	-0.116	-0.102	0.002	-0.078

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3b. Pairwise correlations

	GO	P	Familiar	Audit	FeO	TME	Size	Tax rate	GDP	INF
GO	1									
P	0.174	1								
Familiar	0.040	-0.377***	1							
Audit	-0.147	0.028	0.125	1						
FeO	0.134	-0.269**	0.239**	0.280***	1					
TME	-0.284***	-0.298***	0.344***	0.295***	0.179	1				
Size	-0.106	-0.046	0.191*	0.163	0.056*	0.301*	1			
Tax rate	0.125	0.217**	0.096	0.021	-0.097	-0.019	-0.085	1		
GDP	0.027	-0.242**	0.075	0.066	0.176	0.130	-0.017	-0.053	1	
INF	0.082	0.198*	-0.250**	0.034	-0.026	-0.134	0.011	0.221**	-0.210*	1

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Multicollinearity Test

Further, the study conducted the Variance Inflation Factor (VIF) to check whether any multicollinearity problem in the variables existed. Multicollinearity occurs when the high correlations exist between the variables. No variable demonstrates the value of VIF more than the recommended level 10 (Hair, Anderson, Tatham, & Black, 1984). Therefore, the study has no multicollinearity problem in regression analysis.

Regression Results

Table 5 shows the regression results of the study and OLS has been run to find out the relationship between tax evasion and firm characteristics. Among all characteristics, the study found that all types of firms' ownership have a substantial impact on tax evasion shown in column 1 and column 2 of Table 5. More specifically, the domestic (DO), foreign (FO) and government (GO) ownership show positive impact while female ownership (FeO) and proprietorship show a negative impact on tax evasion.

Domestic owners are freer to run their business, and they are not bound to anybody, for why they are not accountable to answer anyone about their cash flows. So, private domestic owners have more tendencies to evade tax. The negative relationship between foreign owners and tax evasion implies that foreign firms are more involved in tax evasion as they do not think about the country where they do business and only think about their profit. They may shift their profits to their own countries, hiding actual income for tax evasion. This result is consistent with the study of Annuar *et al*. (2014) evidenced a positive relationship between foreign ownership and tax evasion since foreign-owned firms use profit-shifting strategies to reduce their tax liabilities (Preuss, 2010).

Government-owned firms also have a positive effect on tax evasion, as the government does not manage the firms directly. For that in the government-owned firms, the managers hold the same position after years, and they know well how to hide their activities from government and tax authorities. Also, the result of tax audits cannot be feasible because of their political connections in many firms (Salihu *et al*., 2015).

Table 4. Regression results

		(1)	(2)	(3)	(4)	(5)
	VIF	TE	TE	TE	TE	TE
DO	7.17	0.1607** (0.0685)	0.2636*** (0.0852)	0.6809*** (0.0605)	0.2262*** (0.0644)	-0.1533 (0.0950)
FO	6.92	0.4360*** (0.0513)	0.3264*** (0.0845)	0.7338*** (0.0481)	0.2909** (0.1321)	-0.0676 (0.0916)
GO	1.47	0.9564*** (0.1697)	1.3885*** (0.2710)	3.3463*** (0.2302)	1.3721*** (0.3018)	1.2842*** (0.2275)
P	2.03	-0.1404** (0.0600)	-0.0530** (0.0262)	-0.2123*** (0.0189)	-0.0556* (0.0305)	-0.2153*** (0.0184)
FeO	1.61	-0.0448 (0.0382)	-0.0975 (0.0848)	-0.2997*** (0.0217)	-0.1023* (0.0565)	-0.2343*** (0.0280)
Age	2.96	1.3029*** (0.2567)	1.5307*** (0.1711)	0.8114*** (0.1684)	1.4620*** (0.2034)	0.7266*** (0.1976)
Size	1.48	-0.0549*** (0.0145)	-0.0676*** (0.0108)	0.0163 (0.0104)	-0.0576*** (0.0190)	0.0770*** (0.0230)
Tax rate	1.34	0.0979 (0.0604)	0.1223*** (0.0313)	0.0936*** (0.0286)	0.1325*** (0.0388)	0.0295 (0.0311)
GDP	1.19	-0.0000 (0.0001)	-0.0001 (0.0001)	-0.0002*** (0.0001)	-0.0001 (0.0000)	-0.0001 (0.0001)
INF	1.43	-0.0911 (0.1083)	-0.1037 (0.1279)	-0.0355 (0.0569)	-0.1216 (0.1292)	0.0520 (0.1017)
Audit	1.49	-0.0642* (0.0366)	-0.0782*** (0.0278)	0.1098*** (0.0195)	-0.0950*** (0.0244)	0.1300*** (0.0314)
Familiar	1.87	-0.3425*** (0.0750)	-0.3144*** (0.1037)	-0.1284*** (0.0313)	-0.3031*** (0.0581)	-0.1468*** (0.0424)
Solvent	2.23	-0.1144** (0.0566)	-0.0912 (0.0678)	0.1323** (0.0551)	-0.0920 (0.0571)	0.0864 (0.0644)
BLFI	1.96		-0.1147 (0.0886)			
FBL	2.83	-0.6205*** (0.0476)	-0.6072*** (0.0452)	-0.1341*** (0.0338)	-0.6549*** (0.0424)	-0.1638*** (0.0503)
FCF	2.79	-0.0160 (0.0405)	0.0735* (0.0421)	0.2902*** (0.0404)	0.0621 (0.0394)	0.2489*** (0.0441)
TME	2.78	0.8335*** (0.2931)	0.8080*** (0.1605)	-0.7516*** (0.1473)	0.8172*** (0.2281)	-0.5760*** (0.1782)
Small				0.1437*** (0.0379)		
Medium					0.0065 (0.0633)	
Large						-0.1797*** (0.0351)
_cons		17.5555** (8.6323)	3.9802 (11.3003)	-41.1836*** (7.1869)	7.4194 (8.0445)	53.1209*** (12.4289)
N		85	85	85	85	85

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The study found a negative and significant relationship between proprietorship firms and tax evasion, not supporting the prior results (Alm *et al*., 2016; Bornemann *et al*., 2019). The result implies that the higher the solely owned business, the lower the possibility of tax evasion. For having sole ownership, proprietorship firms have more fear about punishment for illegal works like getting caught for tax evasion; they are not much able to tackle these things.

Similarly, as the women are more risk-averse than male, they would not like to be involved with tax evasion; their negative feeling to illegal activities prevents them from tax evasion. Moreover, since the female-owned firms have the lower possibility in hiding income and sheltering tax as well, the negative relationship between female ownership tax evasion supports the prior findings (Bornemann *et al*., 2019; Francis *et al*., 2014).

During the investigation of funding behaviour, the study found a negative effect of solvent firms and firms with access to bank loans on tax evasion. The findings show that the firms which have accessibility in bank loan are not likely to be involved with tax evasion as they can manage their investment and working capitals whenever they required. Additionally, the solvent firms can manage their funds from internal sources; they have a negative impact on tax evasion. The findings offer an insight that with increasing the number of solvent firms, the level of tax evasion decreases as their cost of capital is less than others. On the contrary, the study found a positive effect of financially constraint firms (FCF) on tax evasion. The result supports the finding of Alm *et al*. (2019) in which they documented that financial constraints firms are more likely to be involved in tax evasion than the solvent ones. Because of financial constraints, firms cannot get easy access to loans and cannot gather necessary capital; it hampers investment decisions. Therefore, the firms find tax evasion is a way to increase their necessary capital.

Further, the results show that familiar firms with international recognition do not tend to evade tax as a negative relationship has been found between familiarity and tax evasion. Internationally recognized firms pay much attention to hold up their position and reputation in the market. Therefore, they would not like to be involved in such kind of illegal activities which can harm their reputation. Therefore, the study documented that the firms which have higher familiarity and international recognition worldwide have lesser the possibility to evade tax.

Similarly, the firms audited by external auditors do not tend to evade tax as a negative relationship exists between audit and tax evasion. Similar results also found by Huseynov & Klamm (2012) and Hudori and Mustikasari (2020), where they commented that a true and fair view of the financial statement by the external auditors reduces tax evasion to a great extent. Furthermore, the study of Chen *et al*. (2019) documented that firms try to shelter their income and decide to evade tax only if it is proved that the tax authorities do not perform the investigation. Therefore, the government should make it compulsory to check the financial statements of the firms by the external auditors, which, in turn, reduces the firms' tax evasion.

Furthermore, the study has investigated the impact of firm size and age on tax evasion. The study found a negative relationship between firm size and tax evasion. The results provide a realization that larger the firm size, lower the possibility of tax evasion. On the other hand, the age of the firms has a positive effect on tax evasion as more experienced firms have more knowledge about the loopholes in tax evasion. Moreover, they can manage the risk where non-experienced firms do not want to take this risk of evasion and thereby getting caught at the starting of business. So, the more aged firms should be under the inspection of government, and thus tax evasion can be under control. Top-level management experience also shows a positive impact on tax evasion. The results indicate that if the top-level management (TME) holds up the same position for a longer period in the same firm, the firms tend to

evade tax. Though, in some other models, TME shows a negative relationship with tax evasion; these results are due to the impact of institutional characteristics.

Finally, the study examined the effect of economic factors such as tax rate, inflation (INF) and GDP on tax evasion. The study found a substantial impact of tax rate and tax evasion. When the tax rate is too high to bear by the taxpayers, they may feel discouraged from paying taxes properly. Therefore, the government should reduce its corporate tax rate to an optimum level. On the other hand, inflation and GDP show a mixed result; some models show a positive impact, while other models show an insignificant impact on tax evasion. Therefore, the government should keep inflation as balanced as it does affect sound decision-making. Otherwise, the high level of inflation in an economy may increase the firms' level tax evasion. Unlikely, the GDP shows a negative effect on some models, which means higher the GDP, lower the level of tax evasion.

Additional Tests

In Table 5, column 3, 4 and 5 represents the impact of different firm sizes on tax evasion. The small firms are positively significant with tax evasion, while large firms are negatively significant and medium-sized firms have no relationship with tax evasion. The results indicate that the greater the number of small firms' size, the higher the level of tax evasion. On the other hand, the higher the number of large firms' size, the lower the possibility of tax evasion. The results are highly consistent in line with the study of Payne and Saunoris (2020). The study shows that both the small and medium firms are highly motivated by both the domestic and foreign shareholders to evade tax while large firms are influenced by government ownership towards tax evasion.

Additionally, small firms are in demand of gaining more profit; they evade tax to increase cash flows even though they are solvent. Moreover, they do not get quick access to loan procedures like large firms. On the contrary, large firms get easy access to loans and other financial bits of help from banks, and they get more tax exemptions due to significant allowable investments and CSR contributions; as a result, they have fewer tendencies to evade tax.

In columns 6 and 7 of Table 5, the study shows a negative relationship between female management at the top level and tax evasion. In contrast, a positive relationship has been noticed between top-level male managers and tax evasion in column 7. These results indicate that higher the female participation in top-level management of a firm, lower the possibility of tax evasion. On the contrary, higher the male participation at the top-level management implies higher the possibility of tax evasion. These results happen as the top management experience, and government ownership influence the male manager than that of the female. Also, another reason of negative association between firms with female managers at the top level and tax evasion is that they are more risk-averse of getting caught than males; they show no propensity to evade tax as a result.

Finally, columns 8 and 9 show the impact of industry category on tax evasion. The study found no significant impact of servicing and manufacturing industries on tax evasion. Nevertheless, when a further model, model 10 was run dropping FCF, the results show a negative relation between manufacturing firms and tax evasion. This result indicates that manufacturing firms may have fewer tendencies to evade tax despite having financial constraints. Moreover, when the tax rate goes up, the manufacturing firms attempt to evade tax than that of servicing firms, as the finding shows a significant and positive relationship between tax rate and tax evasion (Javorcik & Demir, 2019). On the other hand, the tax rate is not a matter for servicing industries; they can easily manage it form the customers than the manufacturing ones.

Table 5. OLS Results (additional tests)

	(6)	(7)	(8)	(9)	(10)
	TE	TE	TE	TE	TE
DO	0.1081* (0.0634)	0.1874*** (0.0629)	0.7370*** (0.0943)	0.4810*** (0.0803)	0.6383* (0.3377)
FO	0.1070* (0.0616)	0.2143*** (0.0481)	0.6511*** (0.0478)	0.5762*** (0.0725)	0.5471* (0.3244)
GO	-0.2135 (0.2063)	1.2402*** (0.1596)	0.2600 (0.5065)	2.9198*** (0.2188)	-0.0554 (0.2864)
P	0.1150*** (0.0298)	-0.0690** (0.0265)	-0.1517*** (0.0190)	0.1224*** (0.0252)	-0.1338*** (0.0454)
FeO	0.0655 (0.0470)	-0.0982* (0.0581)	-0.2097*** (0.0344)	0.0588* (0.0307)	-0.1916*** (0.0277)
Age	-0.5195*** (0.1466)	1.5204*** (0.1927)	0.7725*** (0.2832)	0.4837*** (0.0816)	1.0027*** (0.3242)
Size	0.1014*** (0.0221)	-0.0500*** (0.0084)	0.0167 (0.0141)	0.1251*** (0.0244)	0.0138 (0.0191)
Tax rate	0.0947*** (0.0341)	0.1595*** (0.0353)	0.1331 (0.1059)	0.0840** (0.0398)	0.1998*** (0.0449)
GDP	0.0002*** (0.0000)	-0.0001* (0.0000)	0.0001 (0.0001)	0.0001*** (0.0000)	0.0001*** (0.0001)
INF	-0.1195 (0.0854)	-0.1555 (0.1092)	0.3961*** (0.1175)	0.0734 (0.1042)	0.3043*** (0.1100)
Audit	-0.0070 (0.0234)	-0.0738*** (0.0197)	0.1176*** (0.0260)	-0.2607*** (0.0376)	0.1002*** (0.0321)
Familiar	-0.2325*** (0.0558)	-0.2769*** (0.0683)	-0.0813 (0.0532)	-0.6530*** (0.0558)	-0.0865 (0.0667)
Solvent	-0.3490*** (0.0649)	-0.0504 (0.0584)	-0.2497** (0.1108)	-0.1491*** (0.0273)	-0.3443*** (0.0584)
FBL	-0.1339*** (0.0399)	-0.6160*** (0.0807)	-0.0836* (0.0422)	-0.0655** (0.0294)	-0.1243*** (0.0465)
FCF	-0.1376** (0.0569)	0.0758 (0.0555)	0.0990 (0.0812)	-0.1535** (0.0600)	
TME	0.0923 (0.1164)	0.5246*** (0.1975)	-0.8837*** (0.2753)	0.6532*** (0.1186)	-0.9496*** (0.3156)
TMF	-0.0692*** (0.0202)				
TMM		0.0567 (0.0544)			
Service			0.0925 (0.0567)		
Manufacturing				-0.0465 (0.0324)	-0.1690*** (0.0553)
_cons	42.4673*** (9.1950)	5.1337 (8.9877)	-33.5397*** (11.5460)	-15.4719 (10.5793)	-6.9037 (36.2274)
N	85	85	85	85	85

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

CONCLUSION

Since firms indeed play the most dynamic roles in the countries' economies, the economy will be weak if the firms evade tax, which will ultimately affect the overall economy and firms' future conditions as well. This study draws an analysis on the impact of firms' characteristics on firm tax evasion across the world. Many factors of firms' characteristics, including ownership structure, funding behaviour, audit, familiarity, industry types, have been used to determine the impact of tax evasion. The result has shown substantial evidence that several firms' characteristics have a significant impact on firms' tax evasion across countries. Firms with more domestic, foreign, government ownership have more tendencies to evade tax, while with increasing the sole proprietorship and female-owned firms, the level of tax evasion decreases. The firms with financial constraints evade more tax than the solvent ones, as the solvent firms decrease the level of tax evasion. Audit and familiarity are also crucial at the firm level as they decrease tax evasion. Tax rate and inflation should be controlled in such a way as they did not instigate firms to evade tax as higher the tax rate and inflation increase greater the level of tax evasion.

This study has some implications across the countries which may be used for all kind of firms. First, the governments, tax authorities and regulatory bodies can know a variety of factors that play a role in reducing the tax collection capacity at the firm level. They can take necessary strategic plans and implement firms level policies to reduce tax evasion. Second, the firms should maintain a balance among the ownership structures so that tax evasion can be decreased. More specifically, the study suggests reducing the domestic, foreign and government ownership and increasing the female and sole ownership business. Third, governments and regulatory bodies should take necessary steps so that the firms can manage their funds at a cheap rate of interest under easy collateral. Forth, countries' governments should be more aware of the firms that evade tax, and enforcement initiatives must be taken against them so that they can be controlled to a certain level. Finally, a firm is not only a profit motive, but also, they are intended to gain the faith of their customers, so they will keep them far away from tax evasion as it is treated illegal activity. If tax evaders are caught and punished once, they will reduce their reputations and thereby lose customers' faith. Further, the study is expected to create an avenue for the researchers and academician, it, in turn, helps them to investigate more firms' characteristics which are responsible for tax evasion.

The study has several limitations. First, this paper uses the shadow economy as a proxy of tax evasion as it is difficult to measure the actual amount of tax evasion. As firms have some internal policy not to share their information with others; a true finding may be biased. Second, the study conducted a cross-country investigation with cross-sectional country-level data due to data unavailability; it may not represent the proper picture of the relationship between firms' characteristics and tax evasion. Future researchers may consider firm-level panel data with large sample size. Finally, limited research on the firms' characteristics and tax evasion will motivate future researchers to explore more other factors of tax evasion.

DISCLAIMER

The contents and views of this chapter are expressed by the authors in their personal capacities. It is not necessary for the Editor and the Publisher to agree with these viewpoints and they are not responsible for any duty of care in this regard.

ACKNOWLEDGMENT

The authors extend sincere gratitude to:

- The Editor-in-Chief and International Editorial Advisory Board (IEAB) of this book who initially desk reviewed, arranged a rigorous double/triple blind review process and conducted a thorough, minute and critical final review before accepting the chapter for publication.
- All anonymous reviewers who provided very constructive feedbacks for thorough revision, improvement, extension and finetuning of the chapter.
- All colleagues, assistants and well-wishers who assisted the authors to complete this task.

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ENDNOTE

[1] Indicates loan interest and other formality costs.

APPENDIX

Table 6. Tax evasion score for sample countries

SL	Countries	TE Score	No. of Firms	SL	Countries	TE Score	No. of Firms
1	Albania (2013)	25.68	360	44	Latvia (2013)	16.68	336
2	Angola (2010)	36.54	360	45	Lebanon (2013)	27.96	561
3	Armenia (2013)	34.56	360	46	Lithuania (2013)	18.3	270
4	Azerbaijan (2013)	42.26	390	47	Madagascar (2013)	46.27	532
5	Bahamas, (2010)	37.77	150	48	Malawi (2014)	34.28	523
6	Bangladesh (2013)	28.22	1442	49	Malaysia (2015)	26.07	1000
7	Belarus (2013)	34.07	360	50	Mauritania (2014)	24.38	150
8	Belize (2010)	45.51	150	51	Mauritius (2009)	21.18	398
9	Bhutan (2015)	20.28	253	52	Mexico (2010)	31.15	1480
10	Bosnia and Herzegovina (2013)	33.18	360	53	Moldova (2013)	39.26	360
11	Botswana (2010)	26.44	268	54	Mongolia (2013)	13.04	360
12	Brazil (2009)	36.9	1802	55	Morocco (2013)	29.79	407
13	Bulgaria (2013)	22.37	293	56	Mozambique (2007)	33.53	479
14	Burkina Faso (2009)	35.64	394	57	Namibia (2014)	22.85	580
15	Burundi (2014)	36.25	157	58	Nepal (2013)	33.46	482
16	Cabo Verde (2009)	31.48	156	59	Nigeria (2014)	50.64	2676
17	Central African Republic (2011)	36.94	150	60	Pakistan (2013)	30.62	1247
18	Chile (2010)	14.06	1033	61	Papua New Guinea (2015)	35.16	65
19	China (2012)	12.41	2700	62	Philippines (2015)	28.04	1335
20	Congo, Dem. Rep. (2013)	45.65	529	63	Poland (2013)	18.86	542
21	Congo, Rep. (2009)	40.65	151	64	Romania (2013)	23.97	540
22	Costa Rica (2010)	24.6	538	65	Russian Federation (2012)	31.88	4220
23	Croatia (2013)	25.28	360	66	Rwanda (2011)	29.53	241
24	Czech Republic (2013)	11.79	254	67	Senegal (2014)	35.91	601
25	Dominica (2010)	30.71	150	68	Slovak Republic (2013)	11.75	268
26	Eritrea (2009)	44.45	179	69	Slovenia (2013)	23.02	270
27	Estonia (2013)	17.97	273	70	Solomon Islands (2015)	30.89	151
28	Ethiopia (2015)	25.1	848	71	South Africa (2007)	21.81	937
29	Fiji (2009)	33.48	164	72	Sri Lanka (2011)	39.33	610
30	Gabon (2009)	63.47	179	73	Suriname (2010)	25.18	152
31	Georgia (2013)	56.57	360	74	Sweden (2014)	11.88	600
32	Ghana (2013)	39.25	720	75	Tajikistan (2013)	39.63	359
33	Guinea-Bissau (2006)	40.4	159	76	Tanzania (2013)	44.04	813

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Table 6. Continued

SL	Countries	TE Score	No. of Firms	SL	Countries	TE Score	No. of Firms
34	Guyana, CR (2010)	28.73	165	77	Trinidad and Tobago (2010)	29.85	370
35	Hungary (2013)	21.63	310	78	Tunisia (2013)	32.94	592
36	India (2014)	18.33	9281	79	Turkey (2015)	27.33	6006
37	Indonesia (2015)	21.76	1320	80	Uganda (2013)	32.46	762
38	Israel (2013)	19.9	483	81	Ukraine (2013)	39.99	1002
39	Jamaica (2010)	36.92	376	82	Venezuela, R.B. (2010)	33.5	320
40	Jordan (2013)	14.64	573	83	Vietnam (2015)	14.78	996
41	Kazakhstan (2013)	30.77	600	84	Yemen, Rep. (2013)	31.07	353
42	Kenya (2013)	29.99	781	85	Zambia (2013)	30.83	720
43	Kyrgyz Republic (2013)	31.35	270				