How Does Foreign Ownership Affect Administrative Corruption in Ukraine?

By Emil Bondarev

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Supervisor: Professor Sergey Lychagin

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Abstract

In 2013 Transparency International places Ukraine on the 144th place out of 175 in the ranking of the most corrupt countries in the world, among Nigeria, Iran, Cameroon, and Central African Republic. Yet, the new Ukrainian government pledged to converge with EU countries in economic and social matters in order to eventually apply for membership in the union. Such changes require a lot of investments, a significant part of which is expected to come from abroad. Corruption, being a strong repulse for FDI, needs to be taken very seriously in this regard. On the macro level corruption in Ukraine acts as a negative determinant of FDI, but some researchers suggest that on the firm level the effect may be reversed. Therefore, in this paper I evaluate the relationship between foreign ownership and administrative corruption in Ukraine and estimate the magnitude of impact. To do so I use a firm-level survey data provided by EBRD and The World Bank for 2009. I construct an instrument variable to address the issue of reverse causality. The results of the estimations support the hypothesis about positive relationship between foreign ownership and petty corruption. I suggest that foreign firms are more likely to corrupt, and such behavior encourages further demands of corruption, which results in a positive estimated relationship. I argue that it is crucial to break this link in order to attract more investment in Ukraine. This can be achieved by targeting corruption with a specially designed set of policies.

Contents

Chapter 1: Introduction

Ukraine is the most corrupt country in Europe.[1] In 2013 Transparency International places Ukraine on the 144th place out of 175 in the ranking of the most corrupt countries in the world, among Nigeria, Iran, Cameroon, and Central African Republic (Transparency International, 2013). In the same year 47% of Ukrainians state corruption as the major threat to the country. This comes to no surprise that it is a serious issue to economic development of any economy.

In 2014 the new Ukrainian government pledged to converge with EU countries in economic and social matters in order to eventually apply for membership in the union. In order to do this, however, a lot of reforms and improvements need to be done. Fighting corruption is probably the major one of them. It is believed that corruption is a big obstacle in Ukraine`s development and by eliminating it the new government plans to resume stable growth and attract the needed investment, including FDI. Both the corruption and FDI seem to be out of desirable levels. Ukraine suffers from extremely corrupt bureaucrats and relatively low levels of FDI. This constitutes a major policy problem to deal with in the coming years.

Corruption and FDI are undoubtedly important economic indicators. Numerous studies proved the negative effects corruption can have on economy, many studies also evaluate and estimate the impact of foreign investment. Studies of Mauro (1995) and Fisman & Svensson (2000) investigate how corruption can retard growth through channels, such as investment and capital allocation. Javorcik and Wei (2009) examine the impact of corruption on FDI, where the former acts as an additional tax on investment. Lambsdorff (2003) argues that corruption negatively affects firms`

[1] (Goncharova, 2013)

productivity. Among the academic literature an important set of research constitutes finding determinants of corruption. One of such determinants is FDI.[2] Yet, little research is done in this area, none specifically for Ukraine.

The relationship between FDI and corruption has been examined in a number of studies. The researchers generally agree that corruption is negatively associated with FDI. However, some studies argue that it may be beneficial for investments in economies with excessive bureaucracy.[3] Other empirically prove positive relationship, but under certain conditions.[4] A topic of reverse relationship of FDI on corruption is not researched so well. Some research argue that FDI should have negative effect on corruption, as foreign investors can "import" clean business practices with them. The spillover effects thereafter can lead to weakening of corrupt environment (Hellman, Jones, & Kaufmann, 2002). In certain cases, though, the effects may reverse, as shown by Pinto and Zhu (2013). As a result, FDI may become positively associated with less transparent economies.

Hellman, Jones, & Kaufmann (2000) evaluated the link between corruption and FDI in transition countries. One of their findings is that there is no significant difference between domestic and foreign firms, when it comes to the share of sales paid in bribes. The authors also note that administrative corruption by FDI firms is much more common in CIS region, and less frequent in Central and Eastern Europe and Baltic states. Similar results are shown for high-level corruption and influence. These findings hint at the existence of a positive link between FDI and corruption in the CIS region.

[2] See Hellman, Jones, & Kaufmann (2002), Pinto & Zhu (2013), Ades & Tella (1999), Egger & Winner (2005)
[3] (Leff, 1964)
[4] (Henisz, 2000)

Studying this topic in more detail is important as understanding corruption and its determinants are essential for building anti-corruption strategies.

The purpose of my thesis is to evaluate the relationship between foreign ownership and corruption in Ukraine and estimate the magnitude of the effect. My hypothesis is that the higher foreign ownership is positively associated with corruption perception in Ukraine, as foreign-owned firms tend to be more corrupt and lead to even more corruption due to reinforcement effect. I believe this study can prove useful to both the National Anti-Corruption Bureau of Ukraine, which deals with the corruption issues on daily basis, and to policy makers in the government, who design anti-corruption laws. To study the issue and test my hypothesis I run a series of *probit* models using survey data from the Business Environment and Enterprise Performance Survey (BEEPS). Using firm-level data is an improvement over existent research, as the majority of previous research focus on cross-sectional data on the macro-level. Firm-level data, on the other hand, can give important insights into decision making of firms, their behavioral patterns and can be used in the future to design effective anti-corruption policies.

1.1 Corruption and FDI in Ukraine

Foreign Direct Investment (FDI) is defined as "an investment made to acquire a lasting interest in enterprise operating outside of the economy of the investor".[5] It is widely accepted to assume a 10% threshold to qualify for an FDI. With such a share it becomes possible to have an objective impact on control and decision making within the foreign-owned enterprise. Corruption is defined as "Dishonest or fraudulent conduct by those in power, typically involving bribery".[6] The purpose of bribe in this

[5] (UNCTAD, 2014)
[6] (Oxford Dictionaries, 2014)

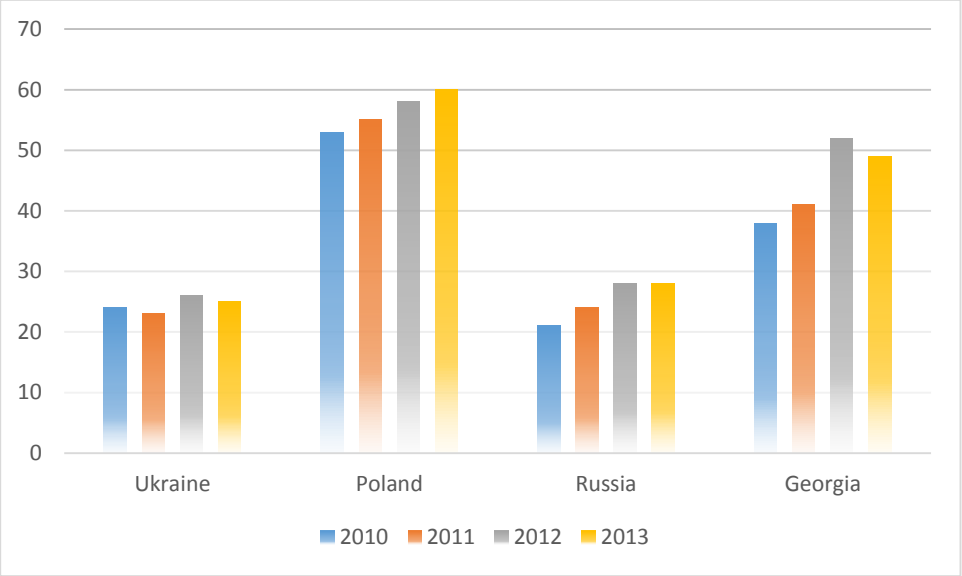
case would be to make a government official place his interest above that of an organization or person that he acts as an agent for.

Let us place Ukraine in the context of other countries in the region and the world. Currently, Ukraine is on the 144th place in the ranking of Transparency International. Over the past few years little to no progress has been made on this rating, despite implementation of a new piece of legislation in 2011 – "On the foundations of the state policy in the field of anti-corruption"[7]. The policy was developed using the recommendations of Europe's Group of States against Corruption (GRECO) and received positive acclaim for government`s commitment to change. However, the next few years showed the legislation to be rather ineffective.

As we can see from the Figure 1, the perception of corruption in Ukraine remained low and mostly unchanged in the years 2010 – 2013, while that of Poland, Russian Federation and Georgia grew steadily and substantially. The likely reason for this is that the anti-corruption legislation in Ukraine largely targeted high-level corruption, leaving administrative corruption untouched. Yet, in Ukraine corruption among high-level officials did not weaken, rather intensified.[8] Georgia and Poland, on the other hand, are actively fighting corruption. This allowed them to move up the ranking of Doing Business and Transparency International. For example, according to (Transparency International, 2013) Georgia moved from 124th place up to 55th, Poland advanced from 64th to 38th rank. Ukraine moved down from 106th to 144th rank.

[7] (Fedirko, 2013)
[8] (Balmforth, 2014)

*Figure 1: Corruption Perception Index (2010 – 2013)**

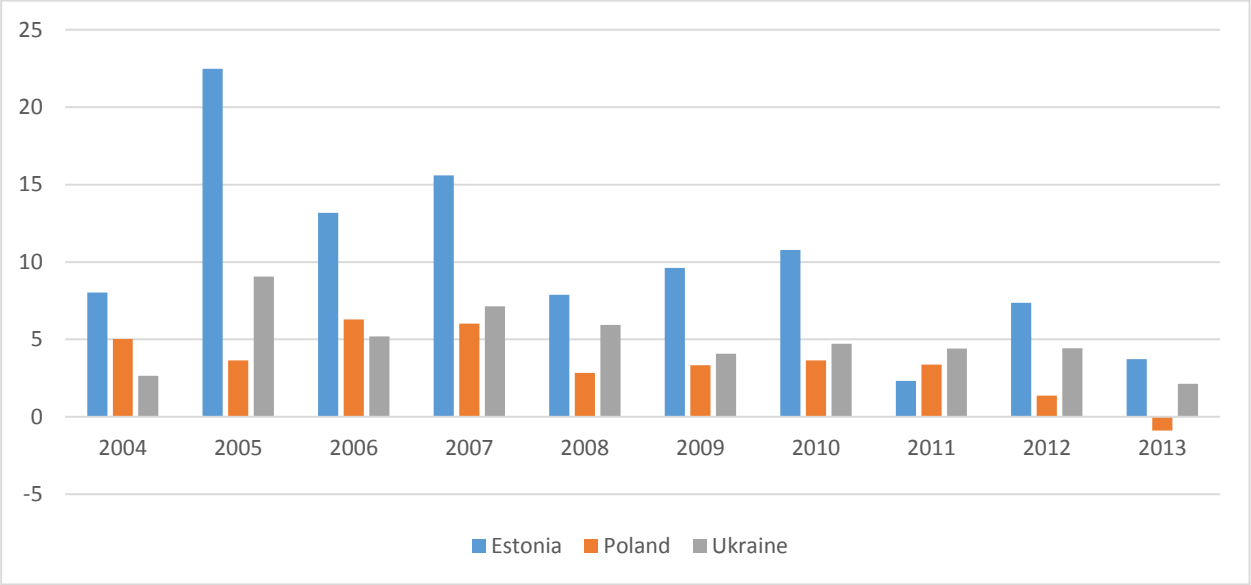


*Higher value of index represents less corrupt economies Source: Transparency International, 2014

Since corruption is one of the major barriers to foreign direct investment in Ukraine[9], decreasing its intensity is likely going to encourage FDI inflow. So far, Ukraine has not been the most attractive host for foreign capital, even though some believe in its high potential for it.[10] According to Hellman, Jones, & Kaufmann (2000), between 1994 and 1999 Ukraine received less than $20 of FDI per capita annually, while Czech Republic and Hungary received over $200. In absolute terms since 1992 Ukraine has been receiving on average around $ 3.3 billion worth of foreign direct investment each year. Russia and Kazakhstan received $22.3 and $5.4 billion a year respectively. Hungary and Poland attracted $9.47 and $8.70 billion a year since 1992.[11] Since early 2000th though, the situation has improved. Figure 2 and 3 display Ukraine`s position relative to some countries in CEEC and CIS region.

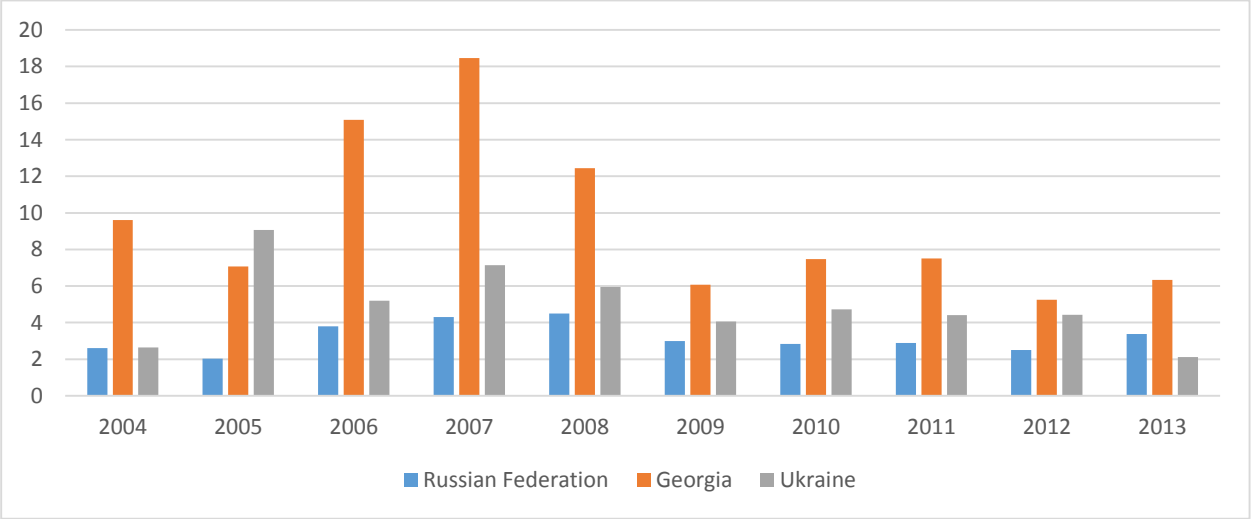
[9] (Crane & Larrabee, 2007)
[10] (Ögütçü & Stepanenko-Malan, 2002)
[11] (The World Bank, 2014a)

Figure 2: Net FDI Inflows as a % of GDP in Ukraine and selected CEEC countries



Source: The World Bank, 2014

Figure 3: Net FDI inflows as a % of GDP in Ukraine and selected CIS countries



Source: The World Bank, 2014

The graphs above show the amount of net FDI inflow as a share of GDP. For some countries foreign investment can become a crucial part of total capital formation. Small countries like Georgia or Estonia managed to attract around 20% of GDP worth of foreign investment. Obviously, the importance of such capital is exceptional. Larger

countries, such as Poland and Russia have been less reliant on FDI due to their economic size and availability of financial resources. Still, even for larger countries FDI as high as 4-5% of GDP is significant. Compared to such economies Ukraine does perform badly, yet recently the net FDI intensity has been unusually low and in 2013 dropped to 2%. Still, it constitutes to 26% of capital formation in Ukraine. In absolute terms the inward FDI totaled 7.8 billion USD in 2013 (UNCTAD, 2014). As the EU recovers from the sovereign debt crisis of 2010, investment in transition economies is likely to restart. The potential importance of FDI for Ukraine therefore is high. It is important to address the issue of FDI attraction in conjunction with the corruption fight, as the two are interrelated and have influence on each other.

The thesis is organized as follows. Chapter 2 presents literature and theoretical background of the issue. Here I briefly review existing research on the issue of FDI and corruption and present theoretical justification for their relationship. Next, in Chapter 3, the data, the variables and the methodology are summarized and explained. I explore the survey data used in the model and explain in the details the variables. Methodology of the estimation is also explained. Chapter 4 includes the detailed model description and the estimation results. Finally, in Chapter 5 lays out a summary of the finding and provides policy recommendation, based on them.

Chapter 2: Literature and Theory

2.1 Literature review

The FDI is gaining importance around the world as globalization takes place. It is especially desirable in emerging and transition economies, as these have the highest need for investments in various sectors, such as infrastructure, communications, natural resource extraction and processing, services etc.

For the investor FDI is desirable as it can open access to new markets, cheaper production, more educated labor, technologies and financing. For the host country the benefits include a source of financing or co-financing of large infrastructure projects, source of new, more advanced technologies, management skills, jobs, foreign currency etc. It is therefore obvious that FDI can facilitate growth and have a generally positive impact on host economies. Numerous studies have been done to determine and estimate the impact and effects of FDI. Let us review some of them.

FDI mostly affects host economies in 3 ways:

a) By increasing investment stock
b) By technology transfer and spillovers to domestic firms
c) By higher wages and wage-spillover effects on domestic firms

Barrel & Pain (1997) investigate effects of technology transfer originating from FDI in some OECD countries. Researchers estimate the impact of FDI and find that raising the stock of inward investment by 1% increases technological progress by 0.27% (for Germany) and 0.26% (for the UK). Another conclusion is that outward FDI is negatively associated with exporting activity in a given country. Similar conclusions are drawn by Haskel, Pereira, & Slaughter (2007), who studied technological spillovers from FDI in

UK. The author finds that a 10% increase in foreign ownership presence in a certain industry would on average increase total factor productivity of domestic firms by about 0.5%. Similar results are reached in a study of Chinese manufacturing firms (Buckley, Clegg, & Wang, 2002), where authors argue that presence of non-Chinese MNEs boosts the productivity of Chinese firms.

The effect of FDI on wages is well studied and most researchers agree that firms with foreign ownership do on average pay higher wages.[12] However, there is also a substantial evidence that wage spillovers from foreign-owned to domestic firms exist.[13] The empirical evidence for such statement can be found in a study conducted by Lipsey and Sjoholm (2003) or Faglio and Blonigen (2000).

The impact of corruption on economy as a whole is difficult to pinpoint. Economists see in various cases both positive and negative effects. The two most discussed theories provide a good insight into the impact corruption has on various processes that go on in an economy. [14] The first theory claims that an inefficient judicial system and corrupt government institutions may lower growth through contract breach, suppressing investment and innovation and slowing down adoption of foreign technology. On the other hand, in certain cases corruption may foster economic growth through the following two mechanisms:

a) Using “speed money” to overcome bureaucratic delays
b) Incentivizing governmental employees to work faster and harder by offering “additional pay”

[12] (Lim, 1977), (Aitkena, Harrison, & Lipsey, 1996)
[13] (Fosfuri, Motta, & Ronde, 2001), (Driffield & Girma, 2003)
[14] (Shleifer & Vishny, 1993), (Mauro, 1995)

Using such mechanisms active firms can speed up their growth, contributing as such to economic growth.

It is widely accepted and estimated that corruption decreases investment in general and FDI in particular. It serves as an additional cost to firms. Costs here may be referred to as direct and indirect. Direct costs would typically be monetary payments to low-level government officials, while indirect cost would originate from relationships of foreign investors with high-level officials.[15] In both cases higher level of corruption is likely to deter FDI.

Mauro (1995) in his work "Corruption and Growth" finds that corruption decreases private investment, which in turn translates into lower economic growth. The author analyses data on 68 countries in the time period from 1980 to 1983. He uses a composite index of country risk factors to create a corruption variable, which should accurately represent investors` perception of corruption in a given country. As a result of his estimation he finds that a one standard deviation increase in the corruption index is associated with an increase of investment by 2.9% of GDP. As for the growth, a one standard deviation increase in the corruption index yields 1.3 percentage point higher economic growth rate. Another study showing negative impact of corruption is done by Leite & Weidmann (1999). The researchers investigate the relationship between corruption, natural resources and growth. The results show that natural resource abundance increases rent-seeking activity in a country, which translates into lower growth level. Authors argue that the transmission mechanism of resource abundance into slower growth is exactly through corruption, especially in less developed countries, where the institutions are generally weaker.

[15] (Driffield, Mickiewicz, Pal, & Temouri, 2010)

Further evidence of negative effects of corruption is presented by Fisman & Svensson (2000). The authors use firm-level data on Ugandan enterprises to find links between firms` corrupt practices and their growth rates. The data set covers 243 firms in time period between 1995 and 1997. The authors address the issue of endogeneity of corruption by using instrumental variables. The regression results prove that corruption is indeed retarding growth rate, where 1 percentage point increase in the required level of bribes paid decreases growth by 3.5 percentage points. Another interesting finding of the authors is that this effect is almost 3 times higher for corruption when compared to taxation.

Effects of corruption on foreign direct investments are studied by Javorcik & Wei (2009). The authors analyze 22 transition economies and present interesting findings. They argue that corruption acts as an additional tax on foreign investors, therefore it lowers investment through higher cost of it. Corruption also affects, whether an investor decides to engage in a joint venture with a local partner or to buy a full share in a domestic firm. The researchers empirically prove that a lower corruption level does increase probability of foreign investment. Another study on this topic is done by Egger & Winner (2003). Researchers provide empirical evidence that higher viability of contracts is positively associated with inward FDI. The estimation not only shows the relationship between corruption and FDI, but also explores the reason that distribution of FDI changed in recent years. A study done by Hines (1995) investigates another aspect of corruption. The researcher explores the effects of the U.S. anti-bribe legislation (Foreign Corrupt Practices Act of 1977). The author comes to the conclusion that the Act of 1977 affected US firms abroad, contrary to previous evidence. The researcher finds that after adoption of the above mentioned legislation US firms chose less corrupt countries to invest in.

A more recent study by Driffield, Mickiewicz, Pal, & Temouri (2010) uses a firm-level panel data of CEE transition countries in 1998-2006. The authors examine links between corruption and FDI, taking into account difference between corruption levels in host and home countries. The results support prevailing empirical evidence of corruption negatively affecting FDI.

The impact of corruption on FDI is relatively well studied. However, the reverse can also be true. Foreign ownership or FDI can have an impact on corruption. This effect is usually expected in less developed countries. The hypothesis is that foreign investors (from presumably richer and more developed countries) would invest in a host country and "bring" with them clean business practices. This should over time create spillover effects on domestic firms and decrease corruption in the host country. In this question, however, research is rather scarce. Here are some studies that look into this issue.

One of the first studies about impact of FDI on corruption was done by Hellman, Jones, & Kaufmann (2002).The authors investigate the transition processes in CEEC and introduce a term "capture economy", where firms take advantage of a weak government to extract business benefits. The researchers utilize Business Environment and Enterprise Performance Survey of 1999 to assess the extent of state capture by the type of a firm. The results suggest that foreign firms in transition economies actually are even more likely to corrupt than their domestic competitors, if the country is in a "state capture". However this is not true for those countries with no significant influence of businesses on the government. Authors also argue that foreign-owned firms with local partners rely more on state capture, while firms with headquarters overseas are more likely to use kickbacks. No evidence is found, though, that foreign firms pay, on average, substantially higher bribes. Pinto & Zhu (2013)

suggest that when an economy has a high potential for rent extraction, foreign investment can crowd out domestic one and muffle competition. This can potentially lead to development of corruption. Ades & Tella (1999) show that corruption is positively related with possibilities to receive rents. As a result, under certain circumstances FDI may be attracted by corruption, as argued by Egger & Winner (2005)

Larrain & Tavares (2004) study effect of openness on corruption. Utilizing data on a cross-section of countries in the period 1970 to 1994 authors find that there is a significant negative relationship between inward FDI and corruption. To achieve such results, a model with IV (geographical and cultural distance) was used. A more recent research is conducted by Pinto and Zhu (2013). In this paper authors study the effects FDI has on prevalence of corruption. After examining a cross section of countries and empirically finding association between FDI and transparency (corruption) authors conclude that higher levels of FDI tend to be associated with less transparent countries, contrary to the previous research. This is true though only for less developed countries, while more developed countries do not exhibit such a relationship. This means that the effects of FDI on corruption are not linear and differ from case to case.

2.2 Theoretical Background

Both FDI and corruption play very important roles in any economy. Since the breakdown of USSR, transition countries of Central and Eastern Europe received large amount of FDI and this was one of the factors contributing to their fast economic development. However, after over two decades of transition many countries in the region still suffer from apparent signs of corruption. What exactly is the link between the two and what are the mechanisms of their influence?

Hellman, Jones, & Kaufmann (2000b) distinguishes between 3 main types of corrupt relationship between state and business. These are state capture, influence and administrative corruption. State capture is, basically, the intentional change of laws or regulations for personal benefits in exchange for illicit payments. Influence is the ability of firms to change the rules and regulations in their favor without any explicit payments. Administrative corruption is private payments to government officials with the aim to change the implementation of certain rules or procedures.[16] In the frame of this thesis, I will use only the third type – administrative corruption. It will be generally referred to as "corruption".

It is logical to assume that foreign-owned companies are less likely to engage in corruption. These firms usually care about their reputation and are subject to pressure from various foreign stakeholders. Moreover, many firms follow internal social responsibility codes, which discourage corruption.[17] Some countries, where FDI originates from, also implement special laws that can punish firms engaged in corrupt behavior abroad. All of this should theoretically serve as a discouragement of bribery for foreign firms. These are such legislations as OECD Convention on Combating Bribery of Public Officials in International Business Transactions[18] or The Foreign Corrupt Practices Act in the US.[19] When faced with bribe-demands, international investors may also choose not to enter the market, investing instead in another host country. Malesky (2008) suggests that in the environment where governments want to attract foreign investors public officials would be discouraged to engage in corruption. As a result government efficiency and transparency increase. It is also argued that FDI

[16] (Hellman, Jones, & Kaufmann, 2000)
[17] (Hellman, Jones, & Kaufmann, 2000)
[18] (OECD, 2011)
[19] (U.S. Department of Justice, 2014)

may promote competition and create spillover effects on domestic firms to engage in clean business practices.[20] All this said, it is safe to expect to see a negative relationship between foreign ownership and corruption. And generally around the world this is true. However, in certain cases this does not hold.

Hellman, Jones, & Kaufmann (2000) observe that foreign firms pay on average as much in bribes as their domestic competitors. The effect is even greater in CIS region, where foreign-owned firms with headquarters located domestically pay on average more in bribes than domestic firms. The chances that foreign firms will engage in corruption compared to domestic businesses are just as high or higher in CIS region.

There are many reasons for private firms to corrupt. What Hellman, Jones, & Kaufmann (2000) noticed is that firms choose to corrupt in order to compete with already established, large and influential firms. Especially in transition economies of CEEC, after the wave of privatization, individuals gained connections and influence in the government. New entrants, small domestic and foreign firms were choosing corruption in order to gain certain advantage over the big, privatized firms and develop their business. In such cases, the new entrants would buy protection and public goods directly from the government.

The effect of foreign ownership on corruption is studied by Kwok & Tadesse (2006). The authors suggest that foreign capital (MNCs) can have an impact on governance in a host country. This impact is delivered through 3 effects: regulatory pressure, demonstration and professionalization. Through these effects multinational companies can shape governmental institutions to achieve a less corrupt environment.

[20] (UNCTAD, 1999)

The logic is that host countries generally want to grow and achieve legitimacy in the global business environment. They would like to enhance their reputation to attract even more FDI and business in the future. MNCs can therefore use their size and influence to refuse making informal payments to the government and make it an example for government and other firms to follow. According to this hypothesis, foreign ownership should have a negative effect on corruption.

On the other hand, it is possible that reverse is true. Government officials may see foreign investors as a means to enrich themselves. Especially, when the FDI flows rapidly intensify, a large number of new business owners will need to interact with the state and this opens doors for demanding bribes. If public officials succeed in extracting informal payments from foreigners, this behavior may be retained or even reinforced, as more and more public officials try to get a piece of the pie.[21] Moreover, some foreign investors may be willing to invest in a corrupt country intentionally to extract business benefits. In order to achieve it, such investors use bribery as a means to gain an advantage over other firms. Following this logic, FDI or foreign-ownership may have a reinforcing effect on corruption, at least in the short run. Driffield, Mickiewicz, Pal, & Temouri (2010) argue that an inverse relation between corruption and foreign ownership exists. If a host country`s government is perceived to be corrupt, it will attract investment from countries with similar institutional setup.

In the following chapter I present the data used in the model estimation, describe and summarize the variables and give insights into the methodology of estimation.

[21] (Robertson & Watson, 2004)

Chapter 3: Data and Methodology

3.1 Data

The main question of my thesis is whether foreign firms abuse corruption in Ukraine and what effect foreign ownership on corruption has. Additionally to this question, I am also going to highlight the significant determinants of corruption for companies. In order to achieve my goal I will use the firm-level data from the fourth round of the Business Environment and Enterprise Performance Survey (BEEPS).[22] The survey is organized jointly by the European Bank of Reconstruction and Development and the World Bank Group. Surveying is done mostly in transition countries of Central and Eastern Europe and the latest available data for Ukraine is from 2009.

The main advantage of this survey is that it interviews a large number of firms in order to achieve statistical significance of estimations. The sample is representative of an economy`s private sector. The wide range of questions asked covers various topics including perception of corruption, access to finance, competition, crime, performance etc. The goal of this survey is to study business environment, relations with government, innovation and performance of the firms in transition countries of CEEC. Special attention is paid to details, such as getting an objective and accurate answer to questions and decreasing the chances of common sampling and statistical biases.

The methodology of the BEEPS follows Enterprise Survey Global guidelines.[23] In order to create a representative sample, the population is stratified into homogenous

[22] (EBRD, 2014)
[23] (The World Bank, 2014b)

groups by firm size, main sector of operations and region of establishment. To achieve high statistical significance, a certain quota of randomly selected firms is interviewed is each strata. For large countries (including Ukraine) additional strata are selected from the manufacturing sector. Some of the questions in the survey are of quite a sensitive nature (for example those connected to business-government relations), therefore special care is taken to ensure confidentiality, integrity and high quality of answers.

The BEEPS covers almost 12 000 firms in 29 countries. Ukrainian sample consists of 851 enterprises. Yet, only around 450-600 are actually used in estimations, since part of the respondents did not know or chose not to answer certain questions. Accordingly, missing data and answers, such as “Don`t know”, are excluded from the calculations. Firms are selected from various sectors of economy. 72% are manufacturing firms, 18% are wholesale and retail and the rest represent construction, services and other industries. Agricultural, extraction and financial enterprises are excluded from the population. Surveying is done in a form of face-to-face interview between a business owner (or CEO/CFO if owner is inaccessible) and a private contractor, hired by the EBRD and the World Bank Group. This is done in order to ensure that the interviewee feels comfortable and safe when talking about bribery and government-related topics.

3.2 Variables

The focus of my analysis is in the relationship between corruption and foreign ownership. Therefore the model will have a dependent variable “corruption” and independent variable “foreign ownership”.

Corruption *(corr)* is defined as a binary variable, which takes a value of one, if an interviewee thinks that firms, like his, usually make informal payments or gifts to public officials to "get things done", and reports an average sum (either as % of total sales or an absolute number) of such a payment. Otherwise, the variable takes a value of 0. The reason, I do not use "% of annual sales paid as bribes" as corruption variable is, because I am looking for the dry fact of corruption and not the amount spent on it. The question is therefore, whether foreign firms are more likely than domestic firms to engage in corrupt activities. The focus of my thesis is also in administrative corruption due to limitations of the data.

The independent variable is the foreign ownership *(fown)*. First of all, I use not the FDI flows, but rather a stock value of FDI, kept in firms. I believe it is a good proxy for FDI as it directly results from it. The variable is defined as the percent of the firm owned by a foreign individual or organization. It is unusual to assume an FDI investment amounting to less than 10% of ownership. This is why I replace foreign ownership values of 1 to 9 with 0. The rest remains unchanged.

Only a few studies were done to find effects of FDI on corruption. The usual determinants of corruption are GDP per capita, democratic institutions, political instability, colonial heritage etc.[24] Contrary to the previous research, my analysis is firm-based, and therefore I came up with logical controls for my model. To account for unobserved heterogeneity, I construct a set of control variables. These are commonly used when making estimations on firm level to eliminate differences rising from specific characteristics of firms. The following controls were used Hellman, Jones, & Kaufmann (2000), I will apply them in my analysis as well:

[24] (Serra, 2006)

a) **Small firm** *(size):* larger firms are expected to have more financing and lobbying power to influence the officials, which is why we would expect them to engage more in state capture. However, smaller firms (since they are small, less attention of controlling bodies will be attracted to them) may be more likely to pay administrative informal payments to quicker get things done. To account for this, I construct a dummy variable, which takes value of 1, if a firm is classified as small (under 50 employees)

b) **Origins** *(origin)*: origins of firms can have a substantial effect on relations with public officials. Firms that were privatized or emerged as state-owned may retain connections with the government, which increases chances of high-level corruption taking place. This refers to state capture and influence. New firms, on the other hand, are usually new to the business and don`t possess the required connections with the state. In order to grow and develop, they may resort to administrative corruption. To account for it, I use a dummy variable, which equals to 1 if the firm was originally private, and 0 if it was privatized or state-owned from foundation

c) **Insecurity of property and contract rights** *(crime):* Hellman, Jones, & Kaufmann (2000) argue that if firms experience insecurity of their property rights (including from the side of the public officials themselves), they are likely to search for protection using corruption. To proxy for that, I construct a binary variable that takes a value of 1 if a firm perceives crime, theft and disorder a moderate, major or severe obstacle to their operation. I expect this variable to be positively correlated with corruption

d) **Innovation** *(innov)*: another interesting observation of (Ayyagari, Demirguc-Kunt, & Maksimovic (2010) is that innovative firms are more likely to corrupt and

pay a larger share of their revenues in bribes. To capture this effect I use an innovation dummy, which equals to 1 if a firm has introduced a new product of service in the last 3 years, and 0 otherwise. It is therefore expected that positive correlation will appear

e) **Informal competition faced** *(infcomp):* many firms report informal competition as an obstacle to doing business. In an environment, where a firm needs to compete with businesses in "shadow" it may become necessary to use corruption in order to secure protection or other advantages over the informal competitors. For this reason I use a dummy *"infcomp"* to report, whether a firm is facing informal competition or not.

The variables discussed above (a – e) constitute the main set of controls in my analysis. In the model I will refer to this set as [CONTROLS1]. These will be used in the main part of my analysis. Apart from these common controls I will also add additional variables to do a robustness check. The following variables (f – i) are included in a set [CONTROLS2]. These account for firm-specific characteristics that might have effect on decisions to corrupt.

f) **Firm age** *(log_age):* it is likely that firm age can have an impact on chance of corruption. Older firms may have better, established relations with government officials and therefore older firms may be more prone to corruption. I log the age of the firms to estimate the % effect.

g) **Exporting status** *(exp)* may also have an effect on firm`s corrupt practices as exporting firms usually need to go through more bureaucratic routine in order to run exporting activity. From there comes the exposure to corruption and higher risk of engagement in it. To account for this effect I create an export dummy,

which takes a value of 1 if a firm is either a direct or an indirect exporter, and 0 otherwise

h) **Share of educated labor** *(eduemp)*: morale and ethics may also influence the decisions of a company. Svensson (2005) claims that human capital and corruption are negatively correlated on cross-country level. It is likely that same is true on the firm level as well. More educated employees are less likely to engage in corruption, compared to those without higher education. For this reason I include another control variable - "educated workforce" *(eduemp)*. It is defined as the share of the workforce with a university degree

i) The last control in this list is represents **International Quality Certification** *(certif)*. It is likely that a firm with such a certificate will be less likely to engage in corruption fearing to loose reputation or certification altogether. Therefore I create a binary valuable stating, if the firm has an international quality certificate of any type

From the summary of the variables, used in my analysis, I can infer that:

- The average foreign ownership across all firms (including those without any foreign participation) is 4.93%. 23.1% of the respondents are believed to be corrupt.
- 39.13% are small, 35.14% are medium-sized, and 25.73% are large enterprises. 64.62% of the firms are either private since foundation or founded jointly with foreign partner(s).
- 56.8% of firms have introduced new products or services over the last 3 years and therefore can be classified as innovative. 41.5% of firms face competition from the business in "shadow".

- 21.4% of enterprises are working directly or indirectly on export. On average, 32.18% of employees have a university degree, and 13.2% of businesses have an International quality certification, such as ISO.

The detailed summary of variables is presented in Figure 4 below.

Figure 4: Summary of the variables used in the model

VARIABLES	*Description*	*# of obs.*	*Mean*	*S.D.*	*Min*	*Max*
Corruption (dummy)	Firms like this pay *[x]* amount of sales in bribes	571	0.231	0.422	0	1
Foreign Ownership	Firm has at least 10% of foreign ownership	851	4.937	19.55	0	100
Small firm (dummy)	Firm is classified as small	851	0.391	0.488	0	1
Origin (dummy)	Firm was original or founded jointly with foreigners	846	0.702	0.458	0	1
Insecurity of property rights (dummy)	Firm perceives its property rights not protected well enough	834	0.565	0.496	0	1
Informal Competition (dummy)	Firm faces informal competition	762	0.415	0.493	0	1
Innovation (dummy)	Firm introduced a new product/service in the last 3 years	848	0.568	0.496	0	1
Firm age (logged)	Age of the firm	833	2.395	0.875	0	5.2
Share of educated labor	Share of labor with a university degree	793	32.18	26.28	0	100
Exporting status (dummy)	Firm is a direct or indirect exporter	845	0.214	0.411	0	1
International Certification (dummy)	Firm has an international quality certificate	851	0.134	0.341	0	1

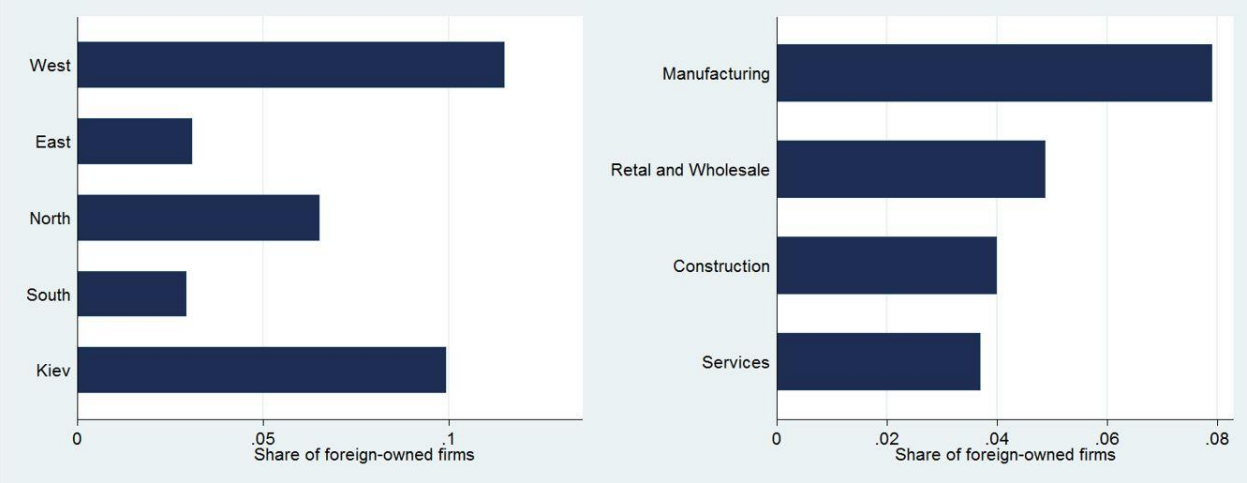
Source: BEEPS, 2009

3.3 Description of the Main Variables

FDI has been an important source of investment and foreign capital in Ukraine since it gained independence in 1991. Even though the relative amount of FDI is rather

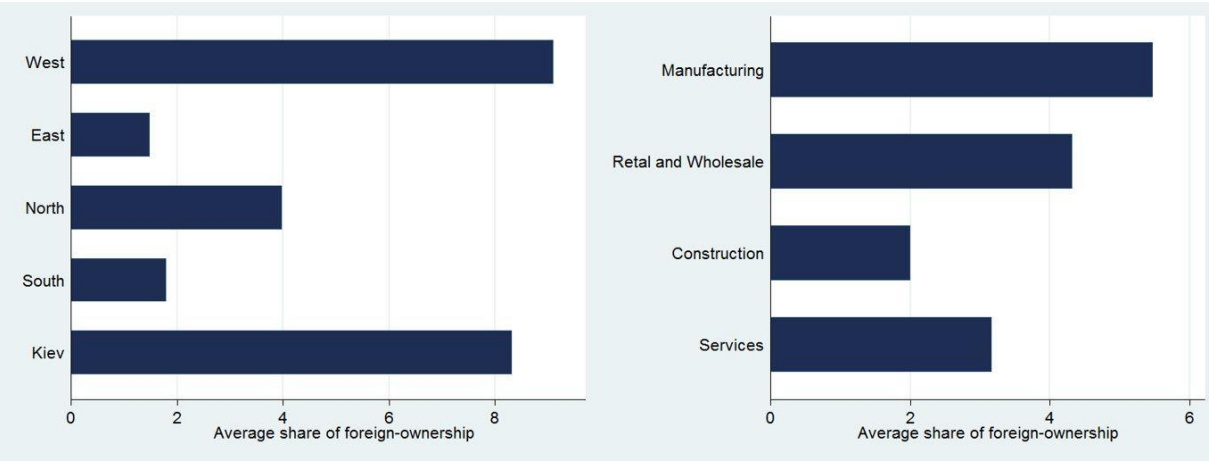
small (compared to foreign investments in resource-rich economies, such as Russia and Kazakhstan), it still played a big role in developing private sector in Ukraine. BEEPS provides us with a great tool to assess the distribution of FDI in Ukraine across industry sectors and across regions. The survey divides all firms among 5 regions: Kiev, East, West, North, and South. All the firms are also assigned to a certain sector of industry, of which there are 4: manufacturing, services, construction and retail and wholesale. Let us see, how FDI is distributed among these groups.

Figure 5: Share of firms with foreign ownership by region (left) and industry (right)



Source: BEEPS, 2009

Figure 6: Average FDI intensity of firms by region (left) and industry (right)

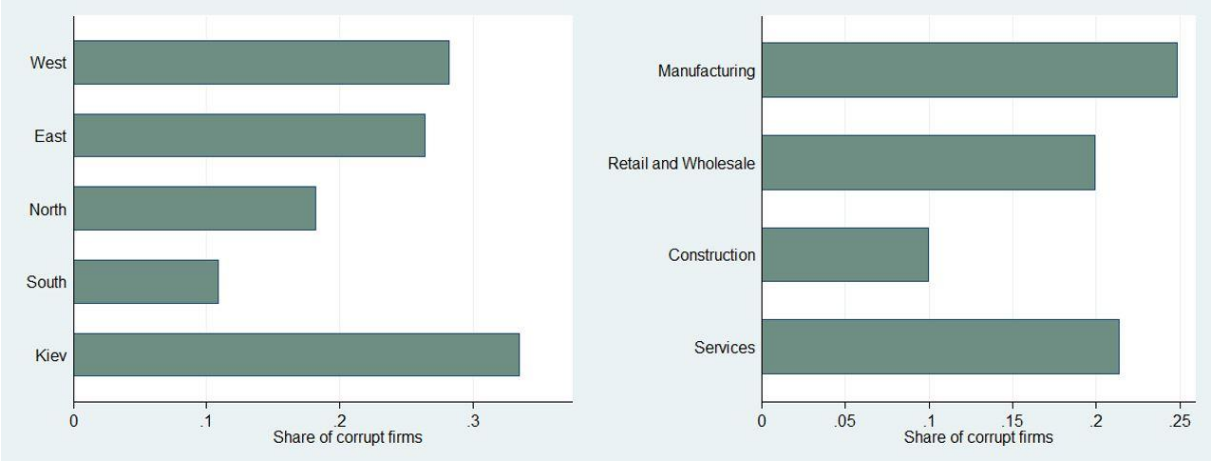


Source: BEEPS, 2009

As we can see from the Figure 5, the highest share of FDI firms is found in Kiev and West regions. Here more than 10% of all firms have foreign ownership. Northern region is lagging behind with around 7% of FDI firms. The least foreign ownership is found in East and South regions. When grouped by industry we see an obvious leader in FDI – manufacturing industry. Here 8% of firms are partly or fully foreign-owned. Rest of the industries have around 4-5% of firms with FDI.

FDI intensity closely resembles FDI distribution. We see that the most FDI-intensive regions are West and Kiev, least FDI-intensive are East and South, and Northern region is somewhere between the two. The average foreign ownership is 8-9% in Kiev and the West, 4% in the North, and around 2% in the East and the South.

Figure 7: Share of corrupt firms by region (left) and industry (right)



Source: BEEPS, 2009

Corruption in Ukraine is one of the main obstacles that are slowing down economic transformation and development. It is apparent on all levels and engages almost everyone – ordinary people, small and large businesses alike. According to the BEEPS survey, firms in Ukraine place corruption as the 5th most serious obstacle to doing business, after political instability, tax rates, access to finance and practices of

informal competitors. Of 833 enterprises surveyed 130 reported their engagement in corruption, 433 said they have not paid bribes and the rest refused to answer or did not know.

This means that more than 15% of all the firms admit their corruption (in the last fiscal year) and 50% do not. A completely different pictures appears, if companies are asked, how often firms like theirs pay bribes. Here a mere 28% of respondents say that they never paid bribes. Another 42% report bribing seldom or sometimes. 22% give informal payments frequently, usually or always. (Refer to Appendix 1)

If we look at the distribution of corrupt firms across industries in the economy (Figure 7), we see a rather flat distribution with the exception of construction sector. The most corrupt industry in Ukraine is manufacturing. Firms in manufacturing have the highest expected probability to engage in corrupt activities of 25%. The next on the list is service sector, where firms resort to bribes in 22% of the cases, then retail and wholesale, where firms give informal payments in 20% of the cases. The least corrupted sector is construction, here, on average, only 10% of firms pay bribes.

The amount of informal payment does not vary as much as chance of it. The highest share of sales paid in bribes is present in retail and wholesale sector of Ukrainian economy. There firms pay on average almost 6.5% of their sales as informal payments. Slightly less, but still considerably a lot, is paid out by manufacturing and service sectors – around 6%. Businesses in construction sector pay the least – only 4%.

Looking at the regional distribution of corruption (Figure 7) a clear leader emerges – Kiev. Here almost 35% of firms bribe officials. West and east regions are

more or less on the same level – around 27%. The smallest share of corrupt firms are located in North (18%) and South (11%).

3.4 Methodology

The question I am trying to answer with my analysis is the following. What is the effect of foreign ownership on corruption in Ukraine? My dependent variable is a dummy, which is why I use a *probit* regression to find the marginal effect of foreign ownership on probability of involvement in corrupting activity. This estimation however cannot be assumed to represent well the reality for 2 reasons. The first reason is measurement error. Due to its sensitive issue, questions concerning illegal activities (in my case informal payments or bribes) may not be answered honestly. This problem is dealt with by the authors of survey. They used a variety of methods to minimize this kind of measurement error. According to the interviewers` perception of truthfulness of responses, 69% are perceived to say truth and only 1.65% are seen to be untruthful. Though not completely, but the problem seems to be dealt with well.

The second problem is the issue of endogeneity. Estimating the true effect of foreign-ownership on chance of corruption becomes difficult due to reverse causality of the two variables. Just like foreign-ownership influences corruption, corruption determines to some extent foreign ownership. According to a vast research done on this topic, corruption has generally negative effect on FDI, which is why we expect a downward bias of the estimation. To bring my estimation closer to the true effect, I introduce an instrumental variable for foreign ownership.

To construct it, I take a sample of countries, namely Russia, Belorussia, Moldova and Ukraine, and calculate the FDI intensity of the industries in it. Then I instrument

the endogenous regressor in the sample with the IV. The instrument variable should be relevant and exogenous to the dependent variable. Since the FDI intensity of the region is not likely to influence corruption in Ukraine directly, we can assume it is exogenous. The relevance comes from the fact that the countries resemble close economic and cultural links, however do not possess the same relation between corruption and foreign ownership. More detailed summary of similarities is presented below:

- Cultural similarity and common history
- Language similarities
- Geographical proximity to each other and to EU, which is a large source of FDI for these countries
- Similar industrial potential.
- Similar characteristics of labor force (education)
- Similar markets (meaning consumers have similar preferences, so business have more or less similar objectives to serve those preferences)

Taking into account the above mentioned, I believe that FDI in this region countries should be distributed more or less in the same way throughout the industries as in Ukraine, but without the influence of corruption on it.

In the next chapter I present the econometric model used and the results of my estimations.

Chapter 4: Model and Estimation

4.1 Model

I will proceed with the estimation in three stages. First of all, I am going to construct a basic *probit* model and estimate the regressions with it. Next, I am going to estimate an *ivprobit* model, using an instrument variable for my regressor. Finally, I will conduct a robustness check of the model by estimating with robust standard errors, an alternative independent variable and equal size samples.

For my base estimation I use the following model:

$$(corr) = \beta_0 + \beta_1(fown) + \beta_2[controls1] + \beta_3[controls1] + \varepsilon \qquad (1)$$

where *(corr)* is the dependent binary variable, which equals to one if a firm thinks that other firms like it engaged in corruption to "get things done". *(fown)* is the independent variable, which denotes the share of foreign capital in ownership structure of the firm. *[controls1]* represents a set of controls, which includes size, origin, crime, informal competition, and innovation dummies. *[controls2]* stands for the additional controls that include age of the firm, share of educated employees, exporting status and international certification. ε represents the standard error of the estimation and includes all the omitted variables and effects. This model is estimated using *probit* command in Stata, therefore I expect it to be endogenous and therefore include a downward bias for the variable *(fown)*. I will add control sets one by one to see how they affect the explanatory variable and other controls.

4.2 Stage 1 – Base Model

The base estimation yielded the following results:

Figure 8: Probit estimation of the base model (reporting marginal effects)

Marginal effect of foreign ownership on **corruption**			
Type of the model	*Probit*	*+[controls1]*	*+[controls2]*
Variables			
Foreign ownership (0-100%)	0.00333***	0.00331***	0.00396***
	(0.000844)	(0.000926)	(0.00105)
Small firm (dummy)		-0.0135	-0.00386
		(0.0403)	(0.0427)
Original at foundation (dummy)		0.111**	0.130**
		(0.0449)	(0.0548)
Insecurity of property rights (dummy)		0.126***	0.113***
		(0.0384)	(0.0406)
Facing informal competition (dummy)		0.0617	0.0718*
		(0.0389)	(0.0418)
Innovative firm (dummy)		0.164***	0.161***
		(0.0397)	(0.0428)
Firm age (logged years)			0.0250
			(0.0272)
Educated employees (0-100%)			0.00149*
			(0.000767)
Exporting status (dummy)			-0.00993
			(0.0535)
International certification (dummy)			-0.0782
			(0.0643)
Observations	571	503	462

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The estimation shows a clear, positive, and significant at 1% level relationship between foreign ownership and corruption. This means that a higher share of foreign ownership in firms is associated with a higher probability of that firm to corrupt public

officials. The estimate of β_1 *(fown)* is at the level of 0.33 – 0.396 percentage point for each percentage point increase in foreign ownership. With addition of controls the effect does not seem to change significantly. So far this is largely in line with my expectations about the positive relationship. In the context, a 10 pp increase in foreign ownership is associated with an increase in the probability of corruption by almost 4 pp.

Small firm dummy, surprisingly enough, turns out to have a negative, yet insignificant effect. Most likely, it is no different from 0. Previously, we expected small firms to be more engaged in corruption, than large firms. However, the estimation disproves it. Original at foundation dummy on the other hand has a very strong positive effect on corruption. The coefficient is highly significant and varies between 11 and 13 percentage points. This means, that if a firm was originally private at foundation or was jointly/solely created with a foreign owner(s), it has a 13 pp higher chance to engage in corruption. This result supports our previous expectations that new firms, which have no established ties with the government, will have more motivation to resort to administrative corruption in order to compete with older rivals. The insecurity of property rights dummy has a very similar in magnitude effect as origins dummy. According to our estimate, firms that perceive crime and disorder an obstacle to their operation, will have an 11-13 pp higher chance to corrupt. This is in line with our expectations and it makes sense, as firms that see their property rights insecure will resort to corruption to "buy" protection. Firm's innovation *(innov)* estimate also shows a positive effect on corruption. As expected, firms that innovate are more active and are more exposed to public officials. From here come higher risk that those firms would be tempted (or forced) to corrupt. The expected increase in the chance of corruption for innovative firms is 16.1 percentage points. Informal competition, as opposed to our

expectations, does not seem to be a significant determinant of corruption, however it does show a 7.2 pp impact at 10% significance level. The significance appears upon addition of control variables. None of the additional controls have explanatory power (except for the share of educated employees, however its magnitude is very little). For robustness check I also calculated the ols regression of the same type. The results are available in the Appendix 2.

4.3 Stage 2 – IV Model

Next, I proceed with stage 2 of the estimation. Instead of simple *probit*, I use an *ivprobit* estimation to mitigate the effects of measurement error and simultaneity. To do it, I instrument my foreign ownership variable *(fown)* with an IV, as discussed in the methodology. Below, I will show the results of the estimations using IV (Regional). Following that I will present results of estimations using an *ivregress* command. The model looks the same as before, with the only difference, that it uses an *ivprobit* and *ivregress* calculations:

$$(corr) = \beta_0 + \beta_1(fown) + \beta_2[controls1] + \beta_3[controls1] + \varepsilon \qquad (2)$$

Figure 9 presents the results from estimating the model using an instrument variable. First of all, we see the change in the estimators of foreign ownership. The coefficient rose from around 4 percentage points in the previous estimation to over 14 percentage points here. More precisely, the coefficient is rather stable, but rises sharply after inclusion of additional controls to 1.65 pp. The effect is significantly different from zero at 1% level, when estimated with controls. The increase, compared to the *probit* estimation, is explained with removing the reverse causality bias. Previously, we expected foreign ownership to be downwardly biased, due to a reverse

effect that corruption has of FDI. Removing the bias resulted in an increase in *(fown)* coefficient.

Figure 9: IVProbit estimation (reporting marginal effects)

Marginal effect of foreign ownership on **corruption**			
Type of the model	*IVprobit*	*+[controls1]*	*+[controls2]*
Variables			
Foreign ownership (0-100%)	0.0143**	0.0142**	0.0165***
	(0.00599)	(0.00567)	(0.00561)
Small firm (dummy)		0.0490	0.0449
		(0.0544)	(0.0495)
Original at foundation (dummy)		0.0890**	0.0952*
		(0.0450)	(0.0565)
Insecurity of property rights (dummy)		0.102**	0.0836*
		(0.0445)	(0.0482)
Facing informal competition (dummy)		0.0256	0.0264
		(0.0475)	(0.0528)
Innovative firm (dummy)		0.115**	0.121**
		(0.0552)	(0.0548)
Firm age (logged years)			0.0300
			(0.0269)
Educated employees (0-100%)			0.00109
			(0.000864)
Exporting status (dummy)			-0.115*
			(0.0680)
International certification (dummy)			-0.187***
			(0.0682)
Observations	571	503	462

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The behavior of controls largely follows that of *probit* model. Small firm dummy is still insignificant. Origin and insecurity of property rights dummies mostly keep their significance, but lose slightly in magnitude. The coefficient of the origin lost 3.5 pp and now equals to 9.52. The coefficient of insecurity of property rights also drops and now

stands at 8.36 pp. Coefficients of the informal competition dummy are again insignificant, but positive and smaller than in *probit* model. Coefficient of the innovation dummy drops in magnitude to 12.1 pp, but keeps its high explanatory power. From the set of additional controls we notice that international certification has a high and significant impact on corruption. Firms with some sort of international quality certification on average have 18.7 pp lower chance to engage in corrupt activities. Exporting firms also seem to be less corrupt, contrary to our expectations. The exporter dummy stands at -11.5 pp and is significant at 10% level.

Figure 10 lists the results of the next estimation. Here I use *ivregress* command to check for consistency of my *ivprobit* model. The results are almost identical to those of *ivprobit*, with the only difference in the slight increase in magnitude. The regression yields 1-2 pp higher estimates for almost all of the variables. The significance, nevertheless, is kept within acceptable levels.

After using *ivregress* on the model I did additional post estimations to test for endogeneity of the regressor and relevance of the IV. For this I ran Durbin and Wu-Hausman tests for endogeneity and extracted the first stage F statistics. The endogeneity tests reject the hypothesis of the regressor being exogenous at 10% significance level. This means that it is worth using an IV regression, instead of a simple OLS. The first stage statistics report, though, suggest that the instrument is rather weak and this can lead to a considerable bias in the estimation. For this reason interpretation of the estimation should be done carefully. The results of the tests are available in the Figure in the appendix.

Figure 10: IVregress model

Dependent variable: corruption			
Type of the model	*IVregress*	*+[controls1]*	*+[controls2]*
Variables			
Foreign ownership (0-100%)	0.0165	0.0158*	0.0202*
	(0.0103)	(0.00879)	(0.0111)
Small firm (dummy)		0.0478	0.0455
		(0.0638)	(0.0633)
Original at foundation (dummy)		0.0931**	0.0977*
		(0.0466)	(0.0586)
Insecurity of property rights (dummy)		0.111***	0.0918**
		(0.0416)	(0.0468)
Facing informal competition (dummy)		0.0352	0.0357
		(0.0481)	(0.0562)
Innovative firm (dummy)		0.127***	0.140***
		(0.0469)	(0.0488)
Firm age (logged years)			0.0361
			(0.0308)
Educated employees (0-100%)			0.00145
			(0.000921)
Exporting status (dummy)			-0.154
			(0.115)
International certification (dummy)			-0.260*
			(0.150)
Observations	571	503	462

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.4 Stage 3 – Robustness Check

In the third stage of the estimation I test the models for robustness in the following ways. First of all, I estimate *ivprobit* models with robust standard errors. Then, I will check for consistency with equal size samples.

The use of robust standard errors does not seem to alter any results of the estimation. None of the estimators loses its significance, none gains it either. The detailed estimation is available in the Appendix 4.

To conduct the second robustness check I introduce an equal size sample. It will precisely resemble the previously used estimation, but instead of varying the number of observations depending on the availability of data, it will use a consistent set of observations. As a result the model uses only 462 firms.

The results of the equal size sample IV estimation are consistent with the original *ivprobit* estimation. There is no significant change in the coefficients resulting from use of a restricted number of observations. This is a good sign, as it proves the model to be robust to changes in the sample size.

To sum up, I establish that there is a positive relationship between foreign ownership and corruption, meaning that higher shares of foreign ownership are associated with higher perception of corruption. The estimations also find a significant positive effect of firms` origin and their insecurity of property rights on chances of corruption. Additionally, innovative firms are more likely to engage in bribery. Finally, there is good evidence to suggest that firms with some sort of international quality certification less often resort to administrative corruption. The results are consistent throughout the estimations and are robust to changes in the sample size. Yet, the magnitude of the effects should be interpreted with caution, as the problem of weak instrument may result in a bias.

Figure 11: IVprobit model with equal size samples (reporting marginal effects)

Marginal effect of foreign ownership on **corruption**			
Type of the model	*IVprobit*	*+[controls1]*	*+[controls2]*
Variables			
Foreign ownership (0-100%)	0.0150***	0.0146***	0.0165***
	(0.00495)	(0.00523)	(0.00561)
Small firm (dummy)		0.0621	0.0449
		(0.0538)	(0.0495)
Original at foundation (dummy)		0.106**	0.0952*
		(0.0456)	(0.0565)
Insecurity of property rights (dummy)		0.0857*	0.0836*
		(0.0467)	(0.0482)
Facing informal competition (dummy)		0.0346	0.0264
		(0.0489)	(0.0528)
Innovative firm (dummy)		0.117**	0.121**
		(0.0568)	(0.0548)
Firm age (logged years)			0.0300
			(0.0269)
Educated employees (0-100%)			0.00109
			(0.000864)
Exporting status (dummy)			-0.115*
			(0.0680)
International certification (dummy)			-0.187***
			(0.0682)
Observations	462	462	462

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Chapter 5: Conclusions and Policy Recommendations

5.1 Summary of the results

The purpose of my thesis was to investigate the relationship between foreign ownership and administrative corruption in Ukraine. Faced with a policy problem of high corruption and low FDI levels, I attempted to find a way to address the problem. Using a firm-level survey data of the World Bank and European Bank of Reconstruction and Development to analyze firms` perception of corruption in 2008 I find the determinants of petty corruption and evaluate the impact of foreign ownership on it, I ran a series of regressions, utilizing data on over 400 enterprises. The issue of endogeneity was also addressed. I constructed an array of instrumental variables to break the reverse causality link. Additionally, I ran several robustness checks to make sure the results don`t vary.

My analysis concludes that the link between foreign ownership and corruption does exist in Ukraine. Even though it is true that on macro level corruption discourages foreign direct investment, looking at the micro level opens a different perspective on the matter. On the firm-level the relationship is most likely twofold. Just as corruption has the ability to determine the inflow of foreign funds, foreign ownership has also a positive effect on corruption perception in Ukraine. I find that higher levels of foreign ownership are positively and significantly associated with higher perception of corruption, which suggests that foreign owned firms are more likely to corrupt than their domestic competitors and such behavior spurs further corruption. The effect is even stronger, when an instrumental variable is used, which suggests that the endogeneity bias is alleviated.

Moreover, I find support for the suggestion of Hellman, Jones, & Kaufmann (2000b) that new firms (contrary to privatized) are more likely to engage in administrative corruption. Also, the authors` proposition that insecurity of property rights forces firms to pay informal payments is also found to be determining to corruption in my analysis. These two results hint at existence of barriers to entry for new firms. I suggest that the barriers are of illegal nature and this forces new entrants to break law in order to stay in business. Yet, I do not find evidence that small firms are more likely than large ones to pay bribes. Neither, does the informal competition faced by the firms seem to have any significant effect. Another interesting conclusion is the effects of innovation and international certification. Innovation is found to be positively related with corruption and this supports the argument that innovative firms may be willing to pay bribes in order to accelerate the implementation of their innovation. International certification, on the other hand, showed a negative effect on corruption. This suggests that firms, which care about their image and are willing to invest in a proof of their quality, are less likely to pay bribes.

5.2 Limitations of the thesis

My analysis, however, is bound by a number of limitations. First of all, it is the question of data reliability. Questions about the informal practices may be of a sensitive nature to firms and therefore the answers may not be entirely truthful. The second serious limitation has to do with the number of observations. The survey includes over 800 firms, of which only half are used in the analysis due to the “missing value” issue. Furthermore, only a small share of firms reported foreign ownership or bribing, which is why the sample may not be fully representative and create bias or difficulties in estimations. A larger sample of firms is likely going to solve this problem and increase the reliability of the results. The upcoming rounds of the BEEP survey are expected to

improve on the reliability and may be used to check and validate the findings of this thesis. Finally, the reverse causality, though addressed with an instrumental variable, is not likely to have been completely removed. The IVs used in the analysis can to some extent be used to deal with the problem, however need further methodological improvement. The results therefore should not be taken as exact estimates, but rather approximate and indicative. The thesis, nevertheless, is a contribution to the current research on corruption and the corresponding problems it creates. Further research is needed to study the area more thoroughly.

5.3 Policy Recommendations

Taking into account the above discussed findings I can suggest a number of policy tools to deal with the issue. I believe it is essential to break the existing link between foreign ownership and corruption. For this to come true, three sets of policies should be adopted.

1. Small and medium size enterprises should be supported and granted better conditions of operation. It should become easier to start a business and it should become easier for innovative firms to enter the market. I suggest that this is a crucial condition to discourage SMEs to bribe, as well as to encourage businesses to leave the shadow economy. The measures should include the following:
    i. A cut in the number of required licenses and permits to start companies or improve a product or a process can incentivize small businesses and reduce opportunities of authorities to extract bribes.
    ii. A more straightforward taxing system (there are currently 5 taxes payable, which take on average 350 working hours to comply) must be introduced.

Ukraine ranks 108th on the "Ease of Paying Taxes" list and is placed between Fiji and Lesotho. [25]

iii. Finally, a simplification of starting a business by introducing "one-stop shops" (Institutions, which can perform multiple integrated functions, such as opening a business, post-registration administrative work, contacts with tax authorities, provision of insurances, permits etc.) is recommended to reducing time needed to register a firm and get all the permits ready. (U.S. Department of Justice, 2014)

2. The red tape must be elevated. It is essential to limit the exposure of private sector to the public officials and thus decrease the opportunities of corrupt activities taking place. As suggested in a report by USAID (2005), the effective ways to counter administrative corruption are

   i. Minimizing government interference into business activities
   ii. Streamlining administrative procedures
   iii. Eliminating ambiguity in the regulations.

   The effectiveness of these methods was tested in a few cities in Ukraine and proved to be effective in reducing bribing and increasing efficiency. The methods from the previous policy set can be effective in this part as well. Moreover, I suggest designing an E-Government by introducing information and communication technologies. This will increasing transparency and reduce corruption.

3. Market regulation should be reintroduced. Firms must have the right to compete on equal rights. The regulators should limit the power of large and established firms for creating barriers for smaller, innovative firms to enter the market. This can be

[25] (PWC, 2014)

also achieved through reducing grand corruption, as opposed to administrative corruption.

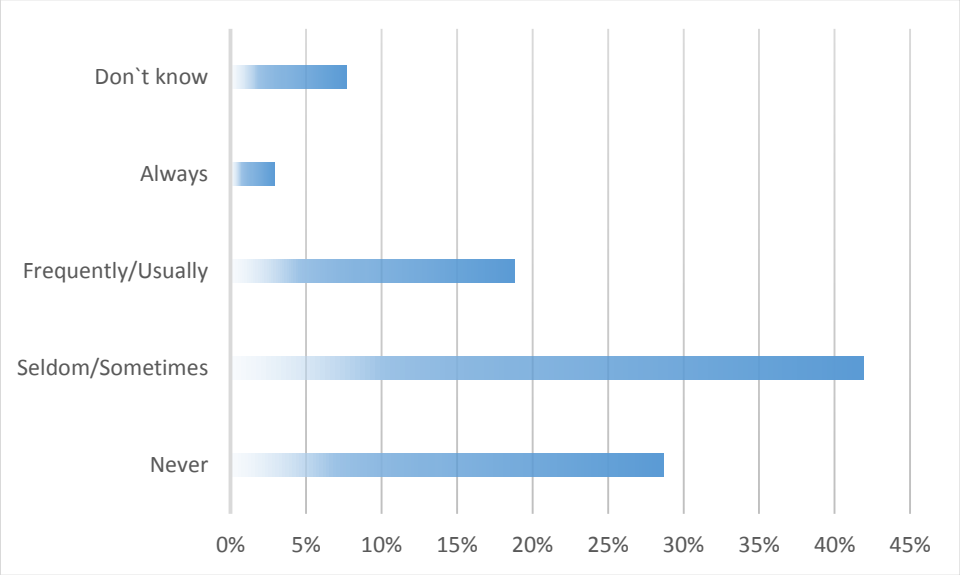
4. After the measures above are implemented, it is vital to make sure that investment is made in Ukraine, also by foreigners. The FDI should be encouraged by both marketing and by creating economic incentives to invest (favorable taxation or subsidization). The reputation must be reinforced by climbing up the ladder of ratings, such as Doing Business, Transparency International, and Ease of Doing Business. These must inform the community of cross-border investors that it is worth investing in Ukraine.

I believe, it is possible to achieve the recommended policies. There are numerous examples of success stories of corruption reforms. To name a few: Georgia, Portugal, Baltic States, Singapore, and Hong Kong.[26] [27] I am certain Ukraine has the capacity to follow their example.

[26] (Foreign Policy Association, 2010)
[27] (The World Bank, 2014c)

Appendices

Appendix 1: Frequency of paying bribes among Ukrainian firms



Source: BEEPS, 2009

Appendix 2: OLS estimation of the base model

Regression of foreign ownership on corruption				
Type of the model	*OLS*	*+[controls 1]*	*+[controls 2]*	*+Robust SE*
Variables				
Foreign ownership (0-100%)	0.00401***	0.00392***	0.00454***	0.00454***
	(0.000898)	(0.000949)	(0.00102)	(0.00107)
Small firm (dummy)		-0.0150	-0.00958	-0.00958
		(0.0388)	(0.0410)	(0.0426)
Original at foundation (dummy)		0.0963**	0.107**	0.107***
		(0.0408)	(0.0479)	(0.0406)
Insecurity of property rights (dummy)		0.118***	0.102***	0.102***
		(0.0362)	(0.0380)	(0.0375)
Facing informal competition (dummy)		0.0645*	0.0741*	0.0741*
		(0.0378)	(0.0405)	(0.0414)
Innovative firm (dummy)		0.154***	0.151***	0.151***
		(0.0371)	(0.0396)	(0.0377)
Firm age (logged years)			0.0250	0.0250
			(0.0245)	(0.0229)
Educated employees (0-100%)			0.00156**	0.00156*
			(0.000754)	(0.000810)
Exporting status (dummy)			-0.0168	-0.0168
			(0.0513)	(0.0540)
International certification (dummy)			-0.0738	-0.0738
			(0.0602)	(0.0591)
R-squared	0.034	0.115	0.133	0.133
Observations	571	503	462	462

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix 3: Test for endogeneity of the regressor and relevance of the IV variable

```
Tests of endogeneity
Ho: variables are exogenous

Durbin (score) chi2(1)          =    3.0523   (p = 0.0806)
Wu-Hausman F(1,450)             =    2.9928   (p = 0.0843)

estat firststage

First-stage regression summary statistics
```

Variable	R-sq.	Adjusted R-sq.	Partial R-sq.	F(1,451)	Prob > F
fown	0.1230	0.1036	0.0126	5.74592	0.0169

```
Minimum eigenvalue statistic = 5.74592

Critical Values                       # of endogenous regressors:    1
Ho: Instruments are weak              # of excluded instruments:     1
```

	5%	10%	20%	30%
2SLS relative bias	(not available)			

	10%	15%	20%	25%
2SLS Size of nominal 5% Wald test	16.38	8.96	6.66	5.53
LIML Size of nominal 5% Wald test	16.38	8.96	6.66	5.53

Appendix 4: IVprobit estimation using robust SE (reporting marginal effects)

Marginal effect of foreign ownership on **corruption**			
Type of the model	*IVprobit*	*+[controls1]*	*+[controls2]*
Variables			
Foreign ownership (0-100%)	0.0143***	0.0142***	0.0165***
	(0.00541)	(0.00494)	(0.00497)
Small firm (dummy)		0.0490	0.0449
		(0.0473)	(0.0445)
Original at foundation (dummy)		0.0890**	0.0952**
		(0.0423)	(0.0480)
Insecurity of property rights (dummy)		0.102**	0.0836*
		(0.0425)	(0.0458)
Facing informal competition (dummy)		0.0256	0.0264
		(0.0449)	(0.0484)
Innovative firm (dummy)		0.115**	0.121**
		(0.0496)	(0.0487)
Firm age (logged years)			0.0300
			(0.0259)
Educated employees (0-100%)			0.00109
			(0.000839)
Exporting status (dummy)			-0.115*
			(0.0674)
International certification (dummy)			-0.187***
			(0.0696)
Observations	571	503	462

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

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