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IF FOREIGN INVESTMENT IS NOT FOREIGN: ROUND-TRIP VERSUS GENUINE FOREIGN INVESTMENT IN RUSSIA

Svetlana Ledyaeva, Päivi Karhunen & John Whalley

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Svetlana Ledyaeva, Päivi Karhunen, John Whalley[1]

NON-TECHNICAL SUMMARY

A distinctive feature of foreign investment patterns for Russia is the correlation of inward and outward investment flows between Russia and key offshore financial centers (OFCs) such as Cyprus and British Virgin Islands (BVI). According to Russian statistics, the key offshore destinations of Russian registered capital outflows, Cyprus and BVI, are persistently among the major source countries of inward foreign investment into Russia. This is the evidence for the "round-tripping" phenomenon, i.e. the transfer of funds abroad in order to bring some or all of the investment back as foreign investment.

Though the round-trip investment between Russia and OFCs is widely discussed among politicians and analysts, this study is the first attempt to formally analyze this phenomenon based on the existing data. In empirical test we utilize a sample of firms with foreign ownership that have been registered in Russia during the period 1997-2011. The data comes from Rosstat – the Russian State Statistical Agency – the most reliable data source of economic statistics on Russia.

First, using knowledge-capital model of the multinational enterprise, we provide a formal empirical proof of the phenomenon of round-trip investment in the Russian economy. Second, we study the differences in location strategies between round-trip and genuine foreign investors across Russian regions and the factors which determine the fraction of round-trip investment in total foreign investment into Russian regions. We also distinguish between different firm size and industries. In particular, we separately study micro firms (with annual gross revenues less than 1.5 million Euros which comprise around 60% in our data) and

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compare the findings with the corresponding results for larger firms. We further do separate empirical analyses for three sectors of the economy: (1) manufacturing, (2) trade and repair and (3) financial and real estate sectors.

We show that round-trip investors tend to invest more in corrupt and resource abundant Russian regions compared to genuine foreign investors. It also appears that the share of round-trip investment in total foreign investment is significantly higher in corrupt Russian regions. In general, these results point to the corruption component of round-trip investment.

We further find that genuine foreign investors tend to invest more in regions with higher level of skilled labour and use sea ports more compared to round-trip investors. The former result indicates that genuine foreign investment is more technologically advanced than round-trip. The latter result indicates that round-trip investment is more oriented towards local market while for genuine foreign investors it is more towards international markets.

Our findings also enable us to suggest that round-trip investors favor the development of the Dutch disease in Russia. In particular they are very highly concentrated in the service sector, seem to aim at exploiting natural resources in Russia, tend to establish manufacturing firms in resource-based industries and support the development of corruption in Russia by investing into corrupt Russian regions. On the contrary, genuine foreign investments seem to work against the Dutch disease as they are more concentrated in manufacturing industries and regions with higher educational potential of population but are not tied to resource abundant and corrupt Russian regions.

ABSTRACT

In this paper we study the phenomenon of round-trip investment between Russia and key offshore financial centers (OFCs), namely, Cyprus and British Virgin Islands, which is now a significant part of foreign investment into Russia. Using firm-level data we study differences in location strategies between round-trip and genuine foreign investors into Russia and the factors which determine the fraction of round-trip investment in total foreign investment into Russian regions. In empirical analysis we also distinguish between different firm size and industries. We conclude that round-trip investors tend to invest more in corrupt and resource abundant Russian regions compared to genuine foreign investors. Furthermore, the share of round-trip investment in total foreign investment is significantly higher in corrupt Russian regions. In general, these results point to the corruption component of round-trip investment. Second, we find that genuine foreign investors tend to invest more in regions with higher level of skilled labour and use sea ports more compared to round-trip investors, indicating that genuine foreign investment is more technologically advanced and more oriented towards international markets than round trip.

JEL Classification: F21, F23
Key Words: Russia, round-trip investment, capital flight, foreign investment

QUAND L'INVESTISSEMENT ETRANGER NE L'EST PAS : L'INVESTISSEMENT ALLER-RETOUR EN RUSSIE

Svetlana Ledyaeva, Päivi Karhunen, John Whalley

RÉSUMÉ NON TECHNIQUE

En Russie, une caractéristique remarquable des flux d'investissement direct est la forte corrélation qui existe entre flux entrants et sortants entre la Russie et les principaux centres financiers offshore (CFO). Selon les statistiques russes, Chypre et les îles Vierges sont à la fois les principales destinations des capitaux sortant de Russie et les principaux pays d'origine des investissements entrant en Russie. Ceci fait suspecter un phénomène d' «aller-retour», à savoir un transfert de fonds à l'étranger dans le but de les rapatrier, en totalité ou en partie, sous forme d'investissement étranger.

Cette pratique d'aller-retour entre la Russie et les centres offshore est l'objet de nombreuses discussions dans le monde politique ou académique, cependant notre étude est la première à tenter une analyse formelle de ce phénomène sur la base des données disponibles. Nous utilisons un échantillon d'entreprises avec participation étrangère enregistrées en Russie au cours de la période 1997-2011. Les données proviennent de l'Agence nationale de statistiques russe, Rosstat, qui constitue la source la plus fiable sur l'économie russe. Tout d'abord, sur la base du model de l'entreprise multinationale (knowledge-capital capital), nous apportons une évidence empirique du phénomène d'aller-retour. Ensuite, nous étudions les stratégies de localisation de ce type d'investissement, comparées à celles caractéristiques des investissements véritablement étrangers entrant en Russie. Nous étudions également les facteurs qui expliquent la part de l'investissement aller-retour dans le total des investissements entrant dans les différentes régions de Russie, en distinguant selon la taille des firmes et les industries. Nous étudions séparément les micro-entreprises (celles dont le chiffre d'affaires annuel est inférieur à 1,5 millions d'euros et qui représentent environ 60% du nombre de firmes de notre échantillon) et les comparons aux autres firmes. Sur le plan sectoriel nous distinguons trois secteurs : industrie manufacturière, commerce et réparation, finance et immobilier.

Nos résultats indiquent que les investissements aller-retour se dirigent davantage que les autres vers les régions où la corruption est élevée et les ressources naturelles abondantes. De même, la part des investissements aller-retour dans le total des investissements entrants est significativement plus élevée dans les régions où la corruption est forte. Pour leur part, les investissements véritablement étrangers se dirigent davantage vers les régions disposant d'une main-d'œuvre qualifiée et de ports maritimes, signe qu'ils font appel à des technologies plus avancées et qu'ils sont plus orientés vers le marché international que les investissements aller-retour.

Nos résultats suggèrent aussi que les investissements aller-retour favorisent le développement du syndrome hollandais. Ils sont en effet très fortement concentrés dans le secteur des services et dans l'exploitation des ressources naturelles (y compris par des firmes appartenant au secteur manufacturier). En privilégiant les régions russes où la corruption est la plus forte, ils sont un facteur du développement de la corruption en Russie. Au contraire, les investissements véritablement étrangers semblent aller à l'encontre du syndrome hollandais : ils se dirigent davantage vers les activités manufacturières et les régions où le niveau de formation de la population est élevé.

RÉSUMÉ COURT

Nous étudions le phénomène de l'investissement aller-retour entre la Russie et les centres financiers off shore de Chypre et des Iles Vierges britanniques d'où provient une part significative de l'investissement étranger en Russie. A partir de données de firmes, nous étudions les stratégies de localisation de ce type d'investissement, comparées à celles caractéristiques des investissements véritablement étrangers entrant en Russie. Nous étudions également les facteurs qui expliquent la part de l'investissement aller-retour dans le total des investissements entrant dans les différentes régions de Russie, en distinguant selon la taille des firmes et les industries. Nos résultats indiquent que les investissements aller-retour se dirigent davantage que les autres vers les régions où la corruption est élevée et les ressources naturelles abondantes. De même, la part des investissements aller-retour dans le total des investissements entrants est significativement plus élevée dans les régions où la corruption est plus forte. Pour leur part, les investissements véritablement étrangers se dirigent davantage vers les régions disposant d'une main-d'œuvre qualifiée et de ports maritimes, signe qu'ils font appel à des technologies plus avancées et qu'ils sont plus orientés vers le marché international que les investissements aller-retour.

Classification JEL : F21, F23
Mots-clefs : Russie, investissement aller-retour, fuite de capitaux, investissement étranger

IF FOREIGN INVESTMENT IS NOT FOREIGN: ROUND-TRIP VERSUS GENUINE FOREIGN INVESTMENT IN RUSSIA

Svetlana Ledyaeva [a)] *, Päivi Karhunen [a)] , John Whalley [b) c)]

INTRODUCTION

A distinctive feature of foreign investment patterns for Russia is the correlation of inward and outward investment flows between Russia and key offshore financial centers (OFCs) such as Cyprus and British Virgin Islands (BVI)[2]. According to Russian statistics, the key offshore destinations of Russian registered capital outflows, Cyprus and BVI, are persistently among the major source countries of inward foreign investment into Russia. This is the evidence for the "round-tripping" phenomenon, i.e. the transfer of funds abroad in order to bring some or all of the investment back as foreign investment (Kalotay, 2005).[3] Hence, a large share of investment flows into Russia cannot be classified as real foreign investment but rather as asset round-tripping by Russian investors for different reasons.[4] The drivers for such behavior include purely financial ones, such as tax avoidance/evasion and the possibility to get access to financial incentives allotted to foreign investors when re-investing the capital back home (Boisot & Meyer, 2008). The other well acknowledged reason for round-tripping investment is laundering the proceeds of corruption via OFCs.

The big amount of round-trip investment in Russia suggests that empirical results of previous studies on determinants of foreign investment distribution/location across Russia (see, e.g., Iwasaki and Suganuma (2005) and Ledyaeva (2009)) could be biased as they do not

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[2] According to the most popular and recognized definition, OFC is a centre which provides some or all of the following services: low or zero taxation; moderate or light financial regulation; banking secrecy and anonymity. Though in general both Cyprus and BVI satisfy this definition, we should mention that Cyprus's future as an offshore financial centre has been in serious jeopardy when the island adopted full EU membership in 2004. However, due to cleverly adjusted taxation policies in the interests of corporations and foreign retirees, Cyprus remained an offshore tax haven of some note. Source: http://www.shelteroffshore.com/index.php/offshore/more/positive-developments-cyprus-offshore-financial-centre-10519

[3] Also comparison with foreign trade can be used to prove the round-trip nature of foreign investment from such countries as Cyprus and BVI. E.g. according to Rosstat statistics in 2007 the fraction of foreign trade between Russia and Cyprus (export plus import) in total foreign trade was only 1% vs. 17% of Cyprus investment into Russia in total foreign investment. The corresponding numbers for Germany, e.g., are 11 and 4%.

[4] Round-trip investment can be also compared to pure domestic investment. Their ratio to domestic investment is quite high: e.g. in 2007 the ratio of foreign investment from Cyprus and BVI to domestic investment into physical capital (according to Rosstat) was approximately 9%.

distinguish between round-trip and genuine foreign investors, whose investment strategies might be very different.[5] In particular, under assumption that the key reasons for round-trip investment to Russia via OFCs is tax avoidance/evasion and corruption money laundering, traditional determinants of foreign direct investment (FDI) might be less important for such investors than for genuine foreign investors. Moreover, round-trip investors do not face the liability of being foreign which also can cause considerable differences in investment behavior and strategies compared to genuine foreign investors.

The role of tax havens and offshore financial centers (OFCs) in the foreign investment behavior of firms from emerging economies has started to receive academic attention only recently. Theoretically-driven existing research has, however, empirically drawn almost exclusively from the Chinese context (see e.g. Sutherland et al., 2010; Morck et al., 2008; Boisot & Meyer, 2008).[6] Contributions focusing on Russia are mainly limited to the assessment of the magnitude and determinants of capital flight from Russia (Abalkin & Whalley, 1999; Loungani & Mauro, 2001; Mulion, 2002; Buiter & Szegvari, 2002). Hence, the other side of the round-tripping phenomenon, reinvestment of such capital back to Russia, remains practically unexplored. In this paper we intend to fill this gap and focus on the reinvestment of Russian capital into Russia from OFCs. Though the round-trip investment between Russia and OFCs is widely discussed among politicians and analysts, this study is the first attempt to formally analyze this phenomenon based on the existing data. In empirical test we utilize a sample of firms with foreign ownership that have been registered in Russia during the period 1997-2011. The data comes from Rosstat – the Russian State Statistical Agency – the most reliable data source of economic statistics on Russia.

First, using knowledge-capital model of the multinational enterprise of Carr et al. (2001), we provide a formal empirical proof of the phenomenon of round-trip investment in the Russian economy. Second, we study the differences in location strategies between round-trip and genuine foreign investors across Russian regions and the factors which determine the fraction of round-trip investment in total foreign investment into Russian regions. We also distinguish between different firm size and industries. In particular, we separately study micro firms (with annual gross revenues less than 1.5 million Euros which comprise around 60% in our data) and compare the findings with the corresponding results for larger firms. We further do separate empirical analyses for three sectors of economy: (1) manufacturing, (2) trade and repair and (3) financial and real estate sectors.

Our results shed light on the nature of round-trip investment into Russia and reveals differences in investment strategies between genuine foreign and round-trip investors. Our main findings can be summarized as follows. First, we find that round-trip investors tend to

[5] Though in our earlier study (Ledyaeva et al., mimeo), using the same data we study location decisions of genuine foreign investors in Russia (i.e. excluding round-trip investors from the analysis), we do not study the differences in location strategies between the two types of investors in that paper.

[6] The World Bank and other agencies and experts have estimated that the scale of the round tripping could be as high as 25-50% of the total FDI inflows into people`s Republic of China (Xiao, 2004).

invest more in corrupt and resource abundant Russian regions compared to genuine foreign investors. Furthermore, the share of round-trip investment in total foreign investment is significantly higher in corrupt Russian regions. In general, these results point to the corruption component of round-trip investment.

Second, we find that genuine foreign investors tend to invest more in regions with higher level of skilled labour and use sea ports more compared to round-trip investors. The former result indicates that genuine foreign investment is more technologically advanced than round-trip. The latter result indicates that round-trip investment is more oriented towards local market while for genuine foreign investors it is more towards international markets. In particular, assuming that sea ports are important means for international cargo transportation, this result points to the conclusion that genuine foreign investors tend to import intermediate goods and export produced goods from/to other countries (including the home country of an investor) more than round-trip investors.

The paper is structured as follows. Section 2 outlines main features of round-trip investment in Russia. Section 3 and 4 describe the data and empirical methodology, respectively. Section 5 presents the empirical results. Finally, section 6 discusses the results and concludes.

1. CAPITAL MOVEMENTS BETWEEN RUSSIA AND OFFSHORE FINANCIAL CENTRES

Round-trip investment consists of two stages: the outward investment from the home country to the foreign country, and the re-investment back to the home country. In this section we examine both directions.

1.1. Capital flight and outward investment from Russia

The emerging literature addressing the role of tax havens and offshore financial centers in foreign investment patterns of emerging economies has mainly focused on the first question, i.e. searching for explanations for the popularity of such locations as OFDI targets for firms from emerging economies (see e.g. Sutherland et al., 2010). The drivers for such behavior identified include purely financial ones, such as tax avoidance/evasion and the possibility to get access to financial incentives allotted to foreign investors when re-investing the capital back home (Boisot & Meyer, 2008). It is widely acknowledged that Russian businessmen utilize different schemes of hiding profits from taxes via establishing companies in offshore jurisdictions. Financial incentives for foreign investors as a driver for round-tripping is relatively evident in the case of China, where the government policy towards inward FDI entailed privileged treatment to foreign-owned firms over domestic ones (Sutherland et al., 2010). However, in the case of Russia, in contrast, the state policy towards inward FDI has

been less supportive and even restrictive. Moreover, in many Russian regions[7] the regional authorities have rather erected barriers to foreign investors to protect incumbent firms from outside competition than provided incentives for foreign investors (Yakovlev, 2006). Hence, the financial incentives granted to foreign investors are hardly a key explanatory factor for round-tripping behavior.

In this paper we propose that round-trip investment between Russia and OFCs is largely motivated by institutional factors. First, OFCs help to launder the proceeds of corruption. Second, OFCs hide investors` identity from corrupt local authorities in Russia via "offshore schemes".

1.1.1. Institutional motives

The question of home country institutions' influence to OFDI is not new (Buckley et al., 2007), and it has started to receive research attention in the context of emerging economies as well. In the literature there are two views of how the institutional environment in emerging economies influences OFDI. The first one stresses institutional support, such as favorable evolving government policies, as encouraging local firms to expand (Luo et al, 2010). Buckley et al. (2007) proposed that in the case of China, government support in the form of privileged access to raw materials and financing, would be a driver for outward investment. Moreover, Luo et al. (2010) suggest that OFDI promotion policies set by emerging market governments would be institutionally complementary to offsetting competitive disadvantages of emerging market enterprises in global competition. Such disadvantages include, for example less advanced technologies and less sophisticated managerial capabilities due to the short history in operating in market economy conditions. In contrast to China, where the government launched its "go global" policy already in 1999 (Buckley et al., 2007), the Russian government has been less active in this front. The endorsement for Russian companies to go abroad was made only during the 2006 presidential election by the president-elect Dmitry Medvedev, who encouraged Russian firms to acquire the needed technology and resources in the global market (Settles, 2008).

However, a number of other researchers suggest that rather than supportive home country institutions, it would be institutional imperfections that prompt firms to escape home country institutional constraints through OFDI (Witt & Lewin, 2007). It has been shown that firms may relocate their business activities to avoid high home country taxes (Gordon & Hines, 2002; Vernon, 1998) or other burdensome regulation (Schoppa, 2006). Moreover, capital flight from developing countries has been identified as driven by political instability, economic risk and policy uncertainty (Le & Zak, 2006). The construct of institutional misalignment was proposed by Witt & Lewin (2007: 581) to conceptualize the gap between the firm's needs and the institutional environment, which leads to higher costs of doing

7 The Russian Federation is administratively divided into Federal Subjects, which are commonly referred to as regions. The number of regions was 89 until 2005, after which some of them were merged. The current number of regions is 83.

business. OFDI would represent an escape response to such misalignment (Witt & Lewin, 2007). In the case of emerging economies, such components of poor institutional environment as corruption, regulatory uncertainty, underdeveloped intellectual property rights protection, and governmental interference (Witt & Lewin, 2007; Yamakawa et al., 2008; Luo et al., 2010), are commonplace. OFDI to a location with more supportive institutions would provide means to escape these institutional constraints. Hence, some emerging economy companies would intent to develop an international presence immediately to safe guard against risks incurring from the domestic business environment (Settles, 2008). According to Loungani and Mauro (2001) the root causes of capital flight from Russia in the 1990s consist of an unsettled political environment, macroeconomic instability, a confiscatory tax system, an insolvent banking system, and weak protection of property rights. In this context academician Leonid Abalkin has emphasized that the main factor of the capital flight from Russia is "chronic multidimensional crisis of society, economy and state" (Glinkina, 2002). Interviews with many Russian entrepreneurs confirm that at least partly capital outflow in 90s` was a trial to escape country`s risks, the indicator of rational behaviour of new owners (ibid).

1.1.2. Laundering the proceeds of corruption via offshore financial centres

Corruption has obvious connection with money laundering. As it is argued in Financial Action Task Force (FATF) report 2011, "the stolen assets of a corrupt public official are useless unless they are placed, layered, and integrated into the global financial network in a manner that does not raise suspicion". It is further argued in the report that corrupt public officials would seek to move financial proceeds of corruption outside of their home jurisdiction. An examination of the corruption case studies revealed that in nearly every case foreign bank accounts were being used in part of the scheme. Taking into account persistently high corruption level in Russia, it is reasonable to suggest that Russian corrupt public officials utilize round-trip schemes via OFCs for laundering the proceeds of corruption.

According to Simpson (2005) and Perez et al. (2012) between 7 and 16 billion US dollars of Russian capital flight was allegedly laundered through the Bank of New York between 1996 and 1999. Much of this money was allegedly the proceeds of criminal activity in Russia, and some of it was said to be looted IMF loans to that country. In this context Shelley (2003) also argues that Russia's billions earned through corruption have been laundered in many countries including offshore locations. She further argues that the true extent of Russian organized crime's capital resources will never be known "because much of it is parked in anonymous bank accounts and carefully masked trusts in offshore locations." As common locales of Russian money laundering Shelley (2003) names the Caribbean, Cyprus, Switzerland, Liechtenstein, Austria, Marshall Islands and Nauru Island in the South Pacific.

1.2. Reinvestment to Russia: institutional arbitrage

The discussion above sheds light on the question why Russian firms invest in offshore financial centers. However, there is another question: Why do these firms re-invest capital back to Russia with its unsupportive institutional environment instead of using the financial

offshore center as a springboard to other foreign markets? We argue that reinvestment into Russia put them into superior competitive position both vis-à-vis firms established in Russia by genuine foreign investors and incumbent Russian firms which operate on a domestic basis. We maintain that our argument finds theoretical support from both mainstream perspectives of international business strategies, the transaction cost (TC) perspective and the resource-based view, when combined with institutional considerations. Such integrative approach has proved as particularly promising in the context of emerging economies (see, e.g. Meyer et al., 2009; Karhunen & Ledyaeva, 2012). Instead of searching for explanations for firm behavior from the institutional theory only, institutions are increasingly viewed as moderators for transaction costs or resource-based explanations (Karhunen & Ledyaeva, 2012).

It has been shown that weak institutions and the associated heightened uncertainty increase transaction costs for firms operating in an emerging economy context (Meyer, 2001). Such costs incur from problems of bounded rationality and the opportunistic behavior that companies face, which are likely to increase when crossing national borders (Boisot & Meyer, 2008). Hence, foreign companies are subject to higher transaction costs compared to domestic firms (Boisot & Meyer, 2008). In this paper we argue that due to their initial knowledge and experience on the Russian institutional context for business, round-trip investors face lower transaction costs compared to genuine foreign investors when investing to Russia, and, hence, have a superior competitive position. This would be a strong motivation to re-invest back to Russia instead of expanding to other foreign markets.

Furthermore, the role of local experience and knowledge is again central when addressing the same question from the resource-based perspective. It has been shown that in emerging economies, intangible assets such as relationship-based networks and knowledge of local business practices are a key resource. Genuine foreign businessmen investing to emerging economies are facing a liability of being foreign (Zaheer, 1995) due to the lack of such resources, and often need to acquire them by entering a partnership with a local company. On the other hand, they are in a superior competitive position compared to incumbent firms due to their superior organizational capabilities, and the favorable institutions in the home country. Again, we propose that round-trip investors would be in a superior position against both other foreign investors and incumbent firms in this context. They do not face the liability of being foreign due to their local networks and knowledge. At the same time their access to resources such as foreign banking and financial expertise (Sutherland et al., 2010) and managerial know-how through the offshore investment puts them in a superior position towards purely domestic firms.

A recent theoretical concept, capturing the situation described above, is that of *institutional arbitrage* (Gaur & Lu, 2007; Boisot & Meyer, 2008), which refers to the situation where a firm is provided opportunities to exploit differences between two institutional environments. Round-tripping provides one example of an institutional arbitrage operation (Huang, 2003). Moving abroad may increase the firm's bargaining power when returning home, as the firm is able to capture advantages of the same legal and economic protections outside of the home country enjoyed by foreign firms operating there (Boisot & Meyer, 2008). At the same time,

the round-trip investor possesses the ability to 'manage institutional idiosyncracies' (Henisz, 2003: 174), including the ability to protect against the 'grabbing hand' of government (ibid) and opportunistic behavior of local business partners. It can further actively take advantage of domestic business opportunities (Sutherland et al., 2010). Hence, round-tripping should be viewed not only as means of avoiding taxes but it can represent a deliberate international business strategy (Sutherland et al., 2010).

1.3. Round-trip investment as a mean to secure the secrecy of an investor`s identity

There is another motive of round-trip investment between OFCs and Russia – securing the secrecy of an investor`s identity. Alexei Moiseev, the director of the department of macroeconomic analysis of "VTB Capital"[8] suggests that "Russian businessmen first take out money from Russia, and then return them back in the form of foreign investment, as they find Russian business projects attractive but are afraid for security of investment".[9] Reinvesting into Russia via OFCs gives Russian businessmen the possibility to hide their identity as investors: e.g. though in Cyprus anonymity is not to be allowed, the use of nominees can be appointed on behalf of the registered shareholders if the true owner wishes to hide its identity. Nominee shareholders may be a foreigner or a Cypriot depending on the choice of the beneficial shareholder.

Similarly Pavel Gennel, the general director of the "Capital Financial Corporation", in his interview to radio "Finam FM" (16 February, 2009) argues that "many Russian businessmen establish offshore companies to hide their identity as owners. Then this offshore company establishes a company in Russia and becomes its full or partial stock-holder. Hence, dividends are distributed into this offshore low-tax jurisdiction. Furthermore, a stock-holder can spend money as he/she likes and Russian authorities do not know his/her exact identity. In fact this is a sort of "secret ownership". An identity of a real owner can be hidden under the legal body (a company in OFC). For a Russian owner this means that his/her income cannot be easily expropriated by Russian authorities."[10]

2. DATA DESCRIPTION

The analysis makes use of the Rosstat (Russian State Statistical Agency) dataset, which provides information on the location choice of 20,165 firms with foreign capital registered in Russia in the period between 1997 and 2011 and provided financial reports to Rosstat in 2011. This dataset includes information on firms of two ownership types: full ownership of foreign entities and joint ventures of foreign owners (foreign entities and foreign citizens) with Russian private owners (Russian entities and citizens). For each firm, we use data that Rosstat records on:

[8] http://vtbcapital.com/index.php

[9] http://www.banki.ru/news/bankpress/?id=3115440

[10] http://finam.fm/archive-view/741/

- Industry information, including the six-digit OKVED code (Russian equivalent to SIC six-digit codes) of the primary industry in which a firm operates;
- Ownership structure, including information about firms` owners (country of origin, company`s name, share in capital) and ownership status;
- Location information, including a region;
- Year of registration;
- Charter capital size at the moment of registration;
- Annual gross revenues in the period of 1998-2011 (when available).

From this dataset we extract two types of firms. First group consists of firms which foreign ownership is represented by offshore owners (i.e. OFCs). In this study the offshore owners are represented by investors from Cyprus and British Virgin Islands. We assume that this group represents round-trip investors. Second group consists of firms which foreign ownership is represented by genuine foreign owners. The genuine foreign (non-offshore) owners are more diversified: main investors are Germany, USA, Finland, China, Turkey, France and Sweden. We should note here that we do not include firms established by investors from Netherlands, Luxemburg, Liechtenstein, Switzerland, Austria and Great Britain in either of these two groups. On the one hand, these countries can be considered as offshore countries popular with Russian flight capital. On the other hand, a large portion of foreign investment from these countries might have "real foreign" origin. Hence, it is difficult to decide to which group, genuine foreign or round-trip investors of Russian origin, they belong.

In table 1 we present data structure by ownership type of the firm (as defined by Rosstat). Firms, which foreign owners consist of investors from different groups or for which ownership data is not available/clear in full, are excluded.

Table 1 - Firms` distribution by ownership type (as cumulative in the period of 1997-2011)

Type code	Ownership type	Firms established by investors from Cyprus		Firms established by investors from BVI		Firms established by genuine foreign investors	
		Number	% of total	Number	% of total	Number	% of total
23	Full ownership of foreign entities	3549	62	937	55,5	2511	32
34	Joint Russian private and foreign ownership*	2163	38	751	44,5	5263	68
	Total number/%	5712	*100*	*1688*	*100*	*7774*	*100*

Source: Rosstat and authors` calculations

**Foreign ownership is represented by foreign entities and citizens.*

As can be seen from Table 1 round-trip investors establish relatively more wholly owned enterprises than joint ventures. This evidence is especially strong for Cyprus. On the contrary, genuine foreign investors tend to establish less wholly owned enterprises than joint ventures (32% vs. 68%). This indicates higher importance of local partners for genuine foreign investors compared to their round-trip counterparts which is expected since round-trip investors can be considered as locals themselves.

As for industrial structure of our sample, more than 70% of firms are concentrated in three sectors: trade and repair (28,5%), real estate (29%) and manufacturing industries (12, 7%). In table 2 we present more detailed industrial structure of the sample.

Table 2 - Industrial distribution of firms (% of total number of firms (separately for Cyprus, BVI and genuine foreigners) as cumulative in the period of 1997-2011)

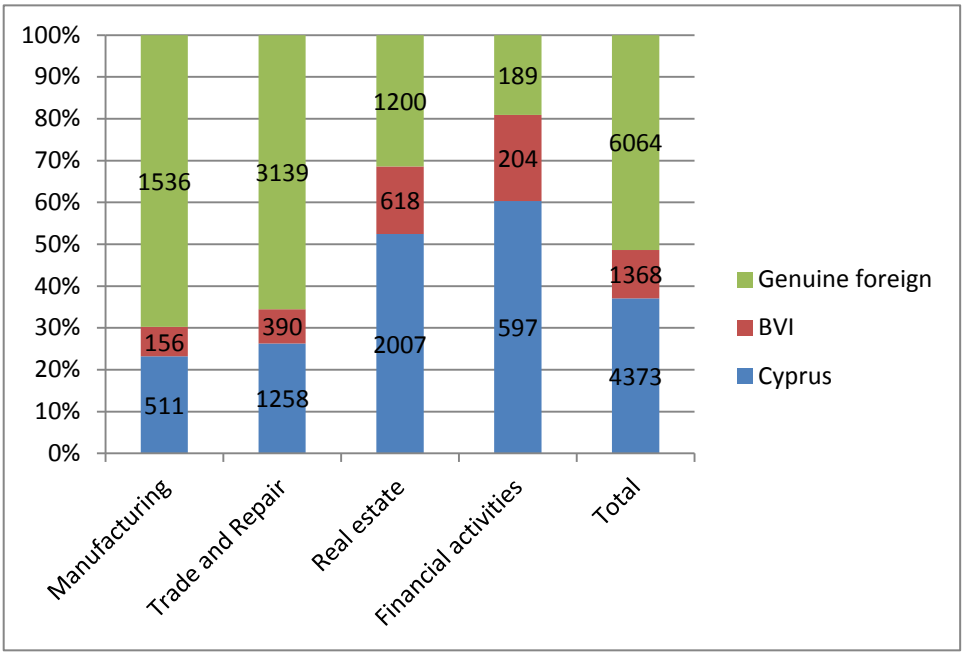
Sector	Cyprus	BVI	Genuine foreign
Agriculture, hunting, forestry, fishing (01 to 05)	1,9	1,9	3,7
Resource extraction (10 to 14)	3,6	1,6	1,3
Manufacturing industries (15 to 37)	9	9,2	19,8
Production and distribution of electricity, gas and water (40-41)	0,7	0,7	0,4
Construction (45)	7,6	5,7	7,0
Trade and repair (50 to 52)	22	23,1	40,4
Hotels and restaurants (55)	1,7	1,5	1,4
Transport and communications (60 to 64)	5,64	5,5	6,4
Financial activities (65 to 67)	10,5	12,1	2,4
Real estate (70 to 74)	35,1	36,6	15,4
Others	2,3	2	1,8
Total	100	100	100

Note: *OKVED (Russian classification of economic activities) two-digit codes in parentheses*

Source: Rosstat and authors' calculations.

As we can see from table 2 the shares of manufacturing industries and trade and repair sector are both around twice higher for genuine foreign investors than for round-trip investors. On the other hand, the shares of financial activities and real estate sector for round-trip investors are five and two times higher than for genuine foreign investors, respectively. In general this tells us that genuine foreign investment is more oriented towards real economy than round-trip investment. This is also confirmed by the structure by type of investor within four main sectors presented on figure 1.

Figure 1 - The structure (%) of firms (by number) by type of investor within sectors of economy (as cumulative in the period of 1997-2011)



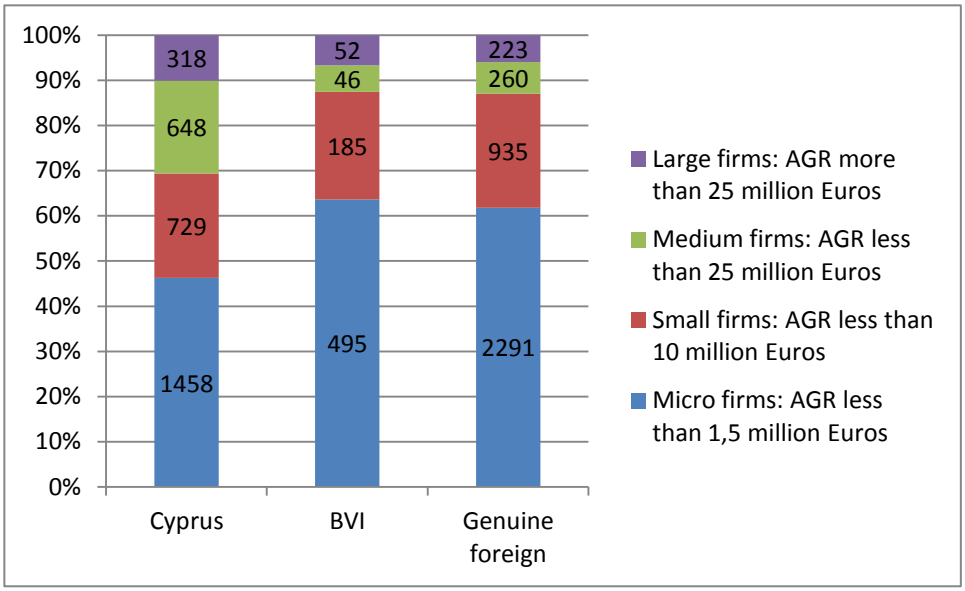
Note: The numbers on the chart denote the number of established firms by a certain type of investor in a certain industry

Source: Rosstat and authors' calculations.

From figure 1 we can see that around 70% firms in manufacturing industries and around 67% - in trade and repair sector are established by genuine foreign investors. On the other hand around 70% firms in real estate sector and around 80% firms in financial sector are established by round-trip investors.

On figure 2 we present the structure of established firms by average annual gross revenues according to the Russian classification of the companies' size by annual gross revenues (Dolmatova, 2010). In the original data annual gross revenues are in roubles. However, in the paper, for readers' convenience, we present the revenues in Euros assuming that 1 Euro equals to 40 roubles.

Figure 2 - Distribution of firms (established in the period of 1997-2011) by size of average annual gross revenues in the period of 1998-2011



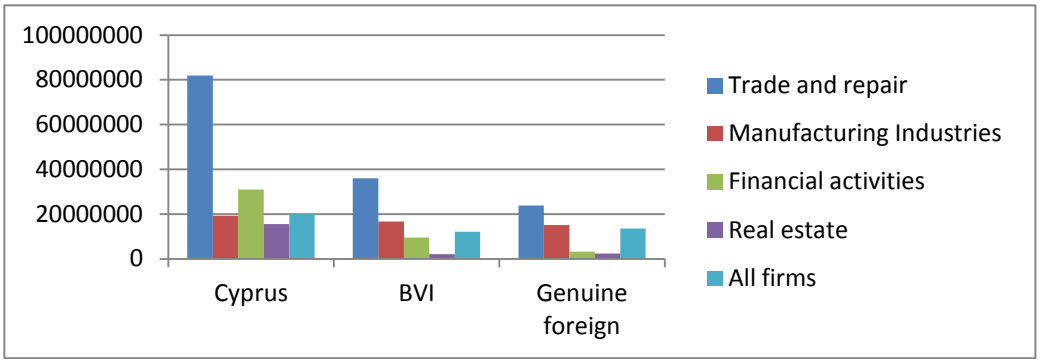
Note: AGR – annual gross revenues as average over the period of 1998-2011; the numbers on the chart denote the number of established firms by a certain type of investor of a certain size

Source: Rosstat and authors calculations

As we can see from the figure 2, micro and small firms strongly dominate in the data. This pattern is slightly stronger for firms established by genuine foreign investors. There can be several explanations for such a strong dominance of small firms with foreign capital in Russia. First, small firms are more flexible than larger ones to changing environment in unstable transition economy. Second, establishing small firms requires fewer permissions, bureaucracy work, etc. than for larger firms which might be also important for investors in such a corrupt and bureaucratic country like Russia.

On figure 3 we present average annual gross revenues across sectors and types of investors.

Figure 3 - Average annual gross revenues (in Euros)(of the firms established in the period of 1997-2011) in the period of 1998-2011 by industry and type of investor

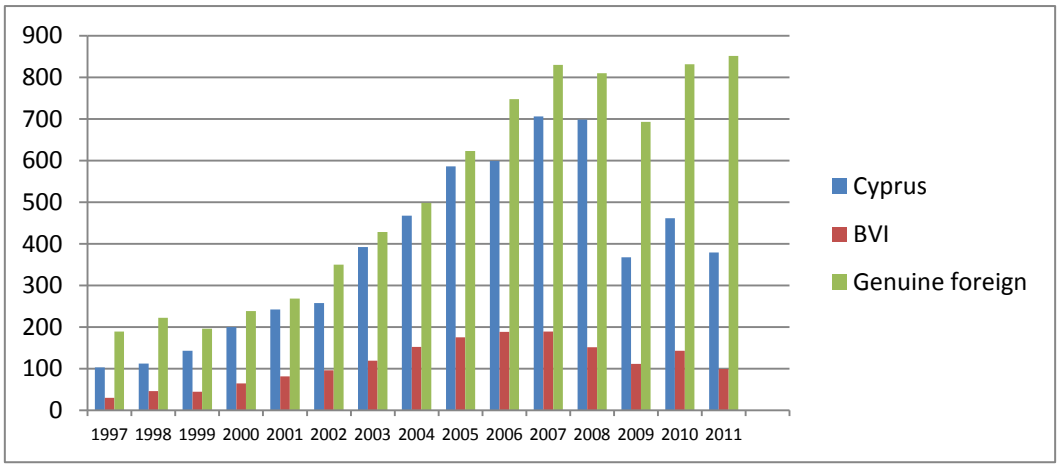


Source: Rosstat and authors` calculations

From the figure 3 we can conclude that the largest firms are established in trade sector followed by manufacturing and financial sectors. The relative patterns do not differ much between the groups of investors, though we can see that round-trip investors establish significantly larger firms in financial sector compared to genuine foreign investors.

The time dynamics of firms` entry (the number of established firms by year of registration) is represented on figure 4.

Figure 4 - Number of established firms by year of registration: 1997-2011



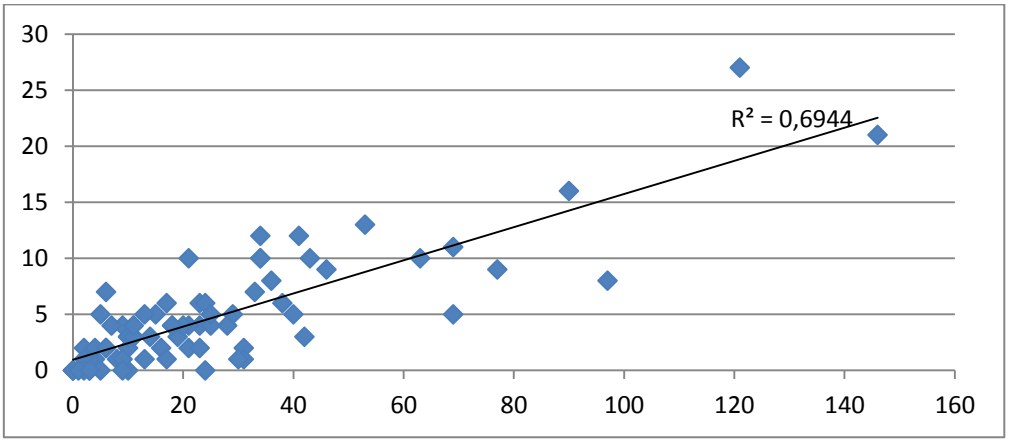
Source: Rosstat, authors` calculations

In general, the time dynamics of established firms is almost identical for round-trip and genuine foreign investors. There is a decrease in the number of established firms in the years of 2008 and 2009 which reflect the negative impact of the global financial crisis on foreign investment in those years.

In Appendix 1 we also present the dynamics of established firms by round-trip and genuine foreign investors in the period of 1997-2011 for selected industries (manufacturing, trade and repair, financial and real estate). From the graphs in Appendix 1 it can be concluded that in recent years (from 2000 onwards) genuine foreign investment experienced notably faster growth in manufacturing industries and trade and repair sectors than round-trip investment. On the contrary, in recent decade round-trip investment grew faster than genuine foreign in the financial and real estate sectors. We can also conclude that global financial crisis in the years of 2008 and 2009 negatively affected both round-trip and genuine foreign investment in all these four sectors.

On figure 5 we plot the number of firms established by Cyprus investors against BVI investors across Russian regions. On Figure 6 we plot the number of firms established by round-trip investors (Cyprus and BVI) against the number of firms established by genuine foreign investors across Russian regions. We exclude Moscow, Moscow region and St. Petersburg because of scale problem.

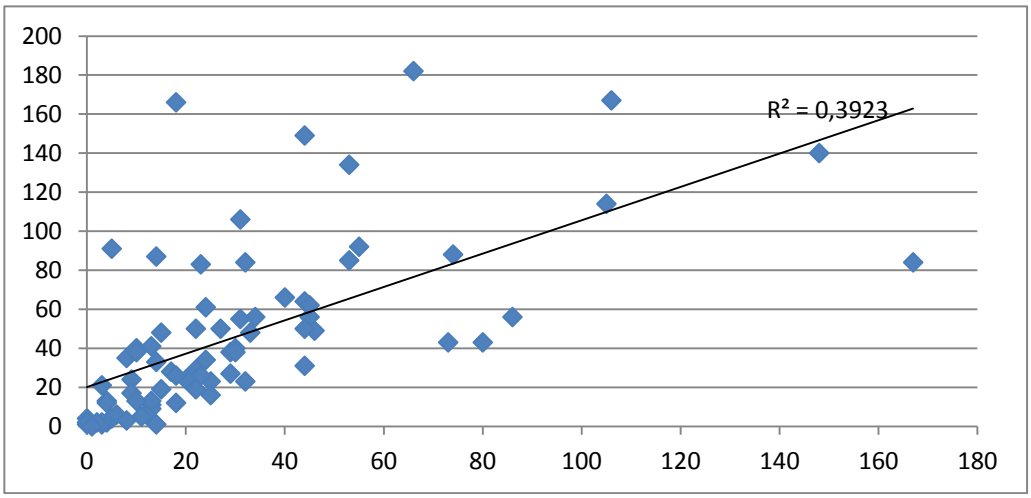
Figure 5 - Cyprus vs. BVI investors across Russian regions (by number of established firms as cumulative in the period of 1997-2011)



Source: Rosstat; authors` calculations

Note: X – Cyprus; Y – BVI.

Figure 6 - Round-trip (Cyprus and BVI) vs. genuine foreign investors across Russian regions (by number of established firms as cumulative in the period of 1997-2011)



Source: Rosstat; authors` calculations

Note: X – Round-trip investors; Y – Genuine foreign investors.

From the figures we can conclude that though there is positive relationship in distribution of the three types of firms across Russian regions, it is far from being perfectly identical (i.e. 45 degree line). Furthermore, it is significantly weaker for round-trip versus genuine foreign investors' case than for Cyprus versus BVI investors' case. This evidence indicates that there are substantial differences in location strategies between round-trip and genuine foreign investors and it is worth to study them.

Both round-trip and genuine foreign investments are highly concentrated in three Russian regions, namely, Moscow city, Saint-Petersburg city and Moscow region. 65% of firms established by investors from Cyprus are registered in Moscow city, 13% - in Moscow region and 7% - in Saint-Petersburg. The corresponding shares for BVI are 76, 10 and 7% and for genuine foreign investors – 56, 12 and 12%. The dominance of established firms in Moscow city is partly explained by the fact that companies have their head offices in Moscow but real production activities are located in regions. Unfortunately, from our data we cannot separate those firms that conduct real business in other regions but locate in Moscow. We also cannot separate MNCs` head offices in Russia from plants.

3. EMPIRICAL STRATEGIES

3.1. Knowledge-capital model of the multinational enterprise frameworks

First, we estimate the baseline equation of knowledge-capital model of the multinational enterprise suggested by Carr et al. (2001) with offshore dummies (adapted to our case of one host country (Russia) and multiple home countries). If offshore dummies are statistically significant and positive, then foreign investments from OFCs exceeds the amounts predicted by traditional economic reasons which gives support for round-trip investment hypothesis. The updated model looks as follows:

$$RSALES_{j,t} = \beta_0 + \beta_1 SUMGDP_{jRUS,t} + \beta_2 GDPDIFFSQ_{jRUS,t} + \beta_3 SKDIFF_{jRUS,t} + \beta_4 GDPDIFF_{jRUS,t} * SKDIFF_{jRUS,t} + \beta_5 INVCRUS_t + \beta_6 TCRUS_t + \beta_7 TCRUS_t * SKDIFFSQ_{jRUS,t} + \beta_8 TCJ_{j,t} + \beta_9 DISTANCE_{jRUS} + \beta_{10} OFFD + \beta_{11} OFF2 + u_j + e_{jt} \quad (1)$$

where RSALES is the sum of real annual gross revenues in a year t (2002,…,2011) of firms with foreign ownership of investors from the parent country j. SUMGDP is the sum of GDP of country j and Russia in a year t. GDPDIFF is the difference between GDP of country j and GDP of Russia in a year t. GDPDIFFSQ is the squared GDPDIFF. Annual gross revenues values which are originally in Russian roubles and GDP values of all countries have been converted into 2005 US dollars using an exchange rate adjusted with local wholesale price index with exchange rates and price indices taken from the *International Financial Statistics* (IFS) of the International Monetary Fund.

The variable SKDIFF is a measure of skilled labour abundance in a country j relative to Russia in a year t. SKDIFFSQ is the squared SKDIFF. Skilled labour abundance is measured by Gross Enrolment Ratio (tertiary (ISCED 5 and 6)) of the World Bank database.

INVCRUS and TCRUS respectively measure costs of investing in, and exporting to, Russia in a year t. TCJ measures trade costs in exporting to the parent country j in a year t. Investment costs in Russia are measured by Investment dimension of the Index of Economic Freedom of the Heritage Foundation. Trade costs in Russia and parent countries are measured by taxes on international trade (% of revenues) of the World Bank database. Taxes on international trade include import duties, export duties, profits of export or import monopolies, exchange profits, and exchange taxes.

Finally, to the baseline equation of knowledge-capital model of Carr et al. (2001) we add two dummy variables. The first one, OFFD, equals to one for Cyprus and BVI and zero otherwise.

The second one, OFF2, equals to one for Austria, Great Britain, Liehtenstein, Luxemburg, Netherlands and Switzerland and zero otherwise. This variable counts for the countries which can be partly considered as countries popular with round-tripping activities of Russian investors.

We estimate the equation (1) using panel data model with random effects. We do not use fixed effects because our main variables of interest – two offshore dummies – are time-invariant and thus subsumed by regional fixed effects.

3.2. Location model framework: three dimensional panel data framework

The aim of our empirical analysis within location model framework is to determine if and to what extent the role of regional factors in the location decisions of foreign investors across Russian regions differs between round-trip and genuine foreign investors. More precisely, we estimate the following equation:

$$
\begin{aligned}
y_{itj} &= \beta_0 + \beta_1 RES_{i,t-1} + \beta_2 Corr_i + \beta_3 Port_i + \beta_4 MSize_{i,t-1} + \beta_5 Mpot_{i,t-1} + \beta_6 RIR_{i,t-1} \\
&+ \beta_7 EDU_i + \beta_8 RIP_{i,t-1} + \beta_9 Roads_{i,t-1} + \beta_{10} OFFd_j + \beta_{11} RES_{i,t-1} * OFFd_j + \\
&\beta_{12} Corr_i * OFFd_j + \beta_{13} Port_i * OFFd_j + \beta_{14} Msize_{i,t-1} * OFFd_j + \beta_{15} Mpot_{i,t-1} * OFFd_j \\
&+ \beta_{16} RIR_{i,t-1} * OFFd_j + \beta_{17} EDU_i * OFFd_j + \beta_{18} RIP_{i,t-1} * OFFd_j + \\
&\beta_{19} Roads_{i,t-1} * OFFd_j + \sum_t \delta_t Year\_Dummies + u_i + e_{it}
\end{aligned}
\tag{2}
$$

where y_{itj} is the number of established firms in a particular Russian region, i (i=1,…,76), in a given year, t (t=1997,…,2010) by a j (1,2) type of investor (round-trip and genuine foreign). Hence, we deal with three-dimensional panel data. The explanatory variables are described below in subsection 4.2.1; the time-varying control variables are lagged by one year. The use of lagged explanatory variables helps to solve possible endogeneity problems. The lagged explanatory variables further relate to a simple hypothesis for the foreign investor`s decision-making process: foreign investors are assumed to make an investment decision for a given year by referring to the observable variables of the previous year (see, e.g., Iwasaki and Suganuma, 2005; Ledyaeva, 2009).

We also include an offshore dummy *OFFd* which equals to one for round-trip investors (Cyprus and BVI in this study) and zero for their genuine foreign counterparts. We further include the interaction terms between *OFFd* and all the explanatory variables in order to estimate the differences in the role of regional factors in location decisions between round-trip and genuine foreign investors.

Finally, we include time (year) dummies. u_i is unobserved regional heterogeneity and e_{it} is idiosyncratic error.

3.2.1. Explanatory variables

RES, the natural resources` potential variable, is measured using an online *Expert RA* journal[11] ranking[12] for a particular region, i, in a given year, t-1 (from 1 to 89: 1 corresponds to the highest potential and 89 corresponds to the lowest potential).

Regional corruption *CORR* in Russia is measured using the corruption dimension provided by the MCC`s Index of Democracy for the period 2000-2004[13]. As mentioned previously, it is measured on a 5-point scale, where 1 indicates the highest level of corruption and 5 indicates the lowest. This indicator refers mainly to state corruption in a broader sense, that is, the interconnections between political and business elites and their interventions in the political decision-making process. To our knowledge, this is the only indicator of corruption that is available for all of the Russian regions.[14] We are aware that this indicator cannot capture all the conceptual richness found in corruption models (see, e.g., Shleifer and Vishny, 1993), which imposes certain limitations on our study. In particular, we cannot count for industrial organization of corruption in Russia.

The variable *Port* reflects the presence of a seaport in a particular Russian region (a dummy variable that is equal to 1 if there is at least one sea port in a region and to 0 otherwise).

MSize, the market size variable, is the first principal component of three variables (gross regional product, total population, and population density) for a particular region, i (i=1,…,76), in a given year, t-1 (t=1996-2007). This indicator for the market size in Russian regions was introduced previously in a study by Iwasaki and Suganuma (2005). The proportion of variance of the first component can reach 80%, and furthermore, its eigenvector and component loading show that this variable is suitable as a general index of market size.

We also include a surrounding-market potential variable, *MPot* (see Blonigen et al., 2007). For a region, i, it is defined as the sum of the market sizes (measured using the *MSize* variable) of the surrounding regions within a distance of 500 km (between the capital of a

[11] http://www.raexpert.ru/ - official webpage of *Expert Rating Agency (RA)*, the most respected rating agency in the CIS and Eastern Europe.

[12] This indicator reflects the average weighted availability of balanced stocks of principal natural resources in the Russian regions.

[13] The Index of Democracy (ID), developed by the Moscow Carnegie Center (MCC), is functionally the closest set of indicators to the Freedom House and Polity IV ratings of political freedom and rights for regional Russian politics (Petrov, 2004). It ranks the Russian regions on the basis of expert evaluations of the periods 1991-2001, 1999-2003 and 2000-2004 (as an average), which are compiled by the Moscow Carnegie Centre's specialists Nikolai Petrov and Alexey Titkov. The experts evaluated each region using a 5-point scale (with 1 being the least democratic and 5 being the most democratic) for the following ten dimensions: regional political organization, openness of regional political life, freedom of elections at all levels, political pluralism, independence of the media, corruption, economic liberalization, civil society, elites, freedom of local municipalities vis-à-vis their independence of the regional government.

[14] The only alternative is the index of corruption of Transparency International and Fund INDEM (2002). However, the index was only computed for 40 Russian regions, which would pose serious limitation on our study.

particular Russian region and the capital of a neighbouring (but not necessarily bordering) region). This distance threshold between neighbouring regions has been chosen based on the "trial-and-error" method. This variable is also lagged by one year.

Regional investment risk, *RIR,* is an online *Expert RA* journal ranking[15] ranging from 1 to 89 for a particular Russian region, i, in a given year, t-1 (1 is assigned to a region with the smallest risk in Russia, and 89 is assigned to a region with the largest risk).

The next variable is the educational background of the regional population. The educational background of the population variable, *EDU,* is measured using a natural logarithm of the share of the population with at least a medium level of professional education compared to the share of the population with no professional education in a particular Russian region in the year 2002 (the data comes from the Rosstat Population Census for 2002). This data is available only in the results of Rosstat Population Census which has been held in 2002 and 2010 in modern Russia. Since in some cases in our empirical study the estimation period ends in 2008, we use only the data of the Population Census of 2002.

Regional institutional potential, *RIP,* is an online *Expert RA* journal ranking[16] ranging from 1 to 89 for a particular Russian region, i, in a given year, t-1 (1 is assigned to a region with the highest potential in Russia, and 89 is assigned to a region with the lowest potential).

Finally, the variable *Roads* reflects the regional development of railways and highways and is measured by the average density of railways and highways in a particular region, i, in a given year, t-1 (where data is not available – for the nearest year).

3.2.2. Econometric methodology

The dependent variable in the location model is a count variable, and it takes on only non-negative integer values. While Poisson regression is appropriate for modeling the count data, our data is significantly overdispersed, and hence, it violates a basic assumption of the Poisson model (Hausman, Hall, and Griliches, 1984). Consequently, as recommended in the literature, we use negative binomial (NB) regression to model the count data (Hausman et al., 1984). Since our data has a panel structure, we estimate equation (1) using a negative binomial panel model. The negative binomial panel estimator accommodates the explicit control of persistent, individual, unobserved effects through either fixed or random effects. We employ regional random effects to control for unobserved regional differences. We do not use fixed effects for two reasons. First, many of our explanatory variables of interest are time-invariant and thus subsumed by regional fixed effects. Second, the maximum likelihood estimation – implemented using STATA – failed to converge with the inclusion of region-specific dummies. The reason for this is that the Newton-Raphson method used to estimate the likelihood functions in STATA is sensitive to the number of variables (see also Hedge and

[15] This is a qualitative indicator that simultaneously reflects political, economic, social, criminal, financial, ecological, and legislative risks for investment activities in the Russian regions.

[16] This indicator reflects the level of development of principal market institutions in the Russian regions.

Hicks, 2008). We also include year dummies to control for unobserved systematic period effects.

The distribution of our dependent variable also contains a large number of zeros – nearly 31% for the whole sample and up to 60% for subsamples. This suggests that our data may contain excessive zeros relative to the data generated using a standard negative binomial process. Failure to account for these extra zeros may result in biased parameter estimates (Lambert, 1992). Accordingly, we also estimated equation (1) using a zero-inflated negative binomial (ZINB) model. Because we could not find a panel data version of the ZINB model in the existing econometrics literature (see also Basu et al., 2011, p. 167), we employed a standard ZINB estimator and computed standard errors that are robust for both clustering within regions and heteroscedasticity. We should also mention that the ZINB model maximum likelihood estimation, implemented in STATA, similar to the ordinary negative binomial model mentioned in the previous paragraph, failed to converge when region-specific dummies (fixed effects) were included due to a collinearity problem and an excessive number of explanatory variables. Hence, when using the ZINB model, we estimated the reduced form of equation (1) by excluding u_i, unobserved regional heterogeneity.

The ZINB model assumes that the population is characterized by two regimes: One where members are "not at risk," and thus always have zero counts, and another where members are "at risk," and thus have either zero or positive counts (Greene, 2000). The likelihood of being in either regime is estimated using logit specification, while the counts in the second regime are estimated using a negative binomial specification. Potentially, the same set of explanatory variables can be used in each stage of the process (Basile, 2004). After different attempts, however, a subset of variables was selected to specify the splitting function: *Corr*, *Msize, RIP* and *Roads*. In some cases we exclude some of these variables because of convergence problem.

3.3. Fractional dependent variable model framework

In this stage of our empirical analysis we analyse the regional factors of the fraction of round-trip investment in total investment across Russian regions. In particular we estimate the following equation:

$$FRT_{it} = \beta_0 + \beta_1 RES_{it} + \beta_2 Corr_i + \beta_3 Port_i + \beta_4 Msize_{it} + \beta_5 Mpot_{it} + \beta_6 RIR_{it} + \beta_7 EDU_i + \beta_8 RIP_{it} + \beta_9 Roads_{it} + e_{it} \quad (3)$$

where FRT_{it} is a fraction of the sum of gross annual revenues earned by firms with foreign ownership of investors from Cyprus and BVI in the total sum of gross annual revenues earned by all firms with foreign ownership (i.e. the sum of two considered groups) in a Russian region i (1,…,76) in a year t (2002,…,2011). At this stage we consider only firms established

in the period of 1997-2001; i.e. the number of firms is fixed for the analysed period (2002-2011). The explanatory variables are the same as in location model and have been described in section 4.2.1.

We utilize fractional logit pooled data model to estimate the equation (3) as recommended in the relevant literature (for details see Papke and Wooldridge (1996; 2008).

4. EMPIRICAL RESULTS

4.1. Knowledge-capital model of the multinational enterprise: estimation results

In table 3 we present the estimation results of knowledge-capital model of the multinational enterprise for our data (the whole sample and the subsamples of main industrial sectors) using panel data model with random effects. Prior to estimation all the variables except dummies have been standardized.

Table 3 - Knowledge-capital model of the multinational enterprise: panel data model with random effects

Dependent variable is the sum of annual gross revenues in a year t (2002,…,2011) of firms with foreign ownership of investors from the parent country j.

Variable	All firms		Manufacturing		Trade and repair		Financial and real estate sectors	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Intercept	.08 (0.2)	-.17 (0.1)*	.2 (0.33)	-.04 (0.26)	.04 (0.2)	-.26 (0.08)***	.53 (0.26)**	.34 (0.2)**
SUMGDP	.03 (0.05)	.08 (0.01)***	.01 (0.12)	.1 (0.03)***	.01 (0.04)	.12 (0.01)***	-.01 (0.1)	.004 (0.02)
GDPDIFFSQ	-.12 (0.03)***	-.07 (0.02)***	-.1 (0.1)	-.1 (0.05)**	-.14 (0.03)***	-.12 (0.02)***	-.01 (0.08)	.002 (0.03)
SKDIFF	.002 (0.02)	.003 (0.01)	-.06 (0.06)	.02 (0.02)	-.01 (0.02)	.001 (0.01)	-.02 (0.04)	-.0002 (0.01)
GDPDIFF*SKDIFF	.02 (0.02)	.02 (0.01)	.02 (0.05)	.05 (0.04)	.03 (0.01)**	.03 (0.01)***	-.01 (0.03)	.001 (0.02)
INVCRUS	-.01 (0.15)	.04 (0.13)	-.32 (0.43)	-.26 (0.38)	.06 (0.12)	.2 (0.11)*	-.688 (0.32)**	-.7 (0.3)***
TCRUS	.02 (0.27)	.1 (0.24)	-.5 (0.79)	-.43 (0.71)	.14 (0.22)	.38 (0.21)*	-1.24 (0.58)**	-1.2 (0.5)**
TCRUS*SKDIFFSQ	-.018 (0.01)	-.02 (0.01)**	-.03 (0.03)	-.01 (0.02)	-.01 (0.01)	-.02 (0.01)**	-.004 (0.024)	-.002 (0.01)
TCI	.02 (0.01)**	.02 (0.004)***	.04 (0.03)	.02 (0.01)*	.02 (0.01)***	.02 (0.01)***	.002 (0.02)	.001 (0.01)
Distance	-.06 (0.17)	-.01 (0.003)***	-.05 (0.14)	-.02 (0.01)**	-.04 (0.17)	-.01 (0.004)*	-.06 (0.15)	-.001 (0.01)
Offshore dummy for Cyprus and BVI		10.1 (0.03)***		8.5 (0.09)***		10.1 (0.04)***		8.8 (0.06)***
Offshore dummy for Austria, Liechtenstein Luxemburg, Netherlands and Great Britain		.13 (0.01)***		.57 (0.04)***		.06 (0.02)***		.07 (0.03)***
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N. obs.	308	308	308	308	308	308	308	308

*Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses.*

As we can see, both offshore dummies are highly statistically significant and have positive signs in the whole sample and all the industrial subsamples which give strong support that these countries invest significantly more into Russia than can be explained within the knowledge-capital model. Furthermore, offshore dummy for Cyprus and BVI is significantly larger by magnitude than the offshore dummy for Austria, Great Britain, Liechtenstein, Luxemburg, Netherlands and Switzerland which indicates the higher importance of the former countries as the centres for round-tripping activities of Russian investors. It can be also noted that knowledge-capital model performs much better when the offshore dummies are included which further points to the importance of analysing the phenomenon of round-trip investment in the context of Russian economy.

4.2. Location choice of round-trip and genuine foreign investors across Russian regions

4.2.1. Baseline specification

In tables 4a and 4b we present the estimation results of random effects negative binomial (RENB) panel data model and zero-inflated negative binomial (ZINB) model for the whole sample. We also present the estimation results of equation (2) separately for the subsamples of round-trip and genuine foreign investors (then offshore dummy and its interactions vanish) and for pooled data when the offshore dummy and its interaction terms with explanatory variables are not included. Basic descriptive statistics and correlation matrix are presented in Appendix 2.

Table 4a - Location model: RENB model baseline results

Dependent variable is the number of firms established in a Russian region n (1,…,76) in a year t (1997,…,2010) by an investor j (1,2: round-trip and genuine foreign)

Variable	*Round-trip*	*Genuine foreign*	*Pooled*	*With interactions*
Intercept	*1.96(0.46)****	*1.7(0.5)****	*1.25(0.34)****	*.81(0.4)***
Resource potential	*.004(0.003)*	*.01(0.0039)*	*-.001(0.002)*	*.01(0.003)**
Corruption	*-.04(0.12)*	*.06(0.13)*	*.15(0.1)**	*.14(0.11)*
Port	*-.14(0.2)*	*.02(0.22)*	*-.13(0.16)*	*.29(0.2)*
Market size	*.02(0.02)*	*.03(0.01)***	*.03(0.02)**	*-.01(0.02)*
Market potential	*-.01(0.01)*	*.002(0.01)*	*.002(0.01)*	*.01(0.01)*
Investment risk	*-.002(0.002)*	*-.002(0.001)*	*-.002(0.01)*	*-.001(0.001)*
Educational level	*1.9(0.39)****	*2.24(0.42)****	*1.3(0.3)****	*1.8(0.34)****
Institutional potential	*-.03(0.004)****	*-02(0.003)****	*-.02(0.003)****	*-.01(0.003)****
Roads	*.001(0.001)*	*.002(0.001)****	*.0004(0.001)*	*.0004(0.001)*
Offshore dummy				*.48(0.2)***
Time dummies	*Yes*	*Yes*	*Yes*	*Yes*
Interactions with offshore dummy				
*Resource potential*D*				*-.005(0.002)****
*Corruption*D*				*.001(0.05)*
*Port*D*				*-.41(0.1)****
*Market size*D*				*.05(0.02)****
*Market potential*D*				*-.02(0.01)***
*Investment risk*D*				*-.0005608*
*Educational level*D*				*-.23(0.2)*
*Institutional potential*D*				*-.01(0.002)****
*Roads*D*				*-.0003(0.0003)*
Log Likelihood	*-1788.7*	*-2000.9*	*-3967.4*	*-3874.8*
Likelihood-ratio test vs. pooled	*455****	*383****	*693****	*731****
N.obs.	*1064*	*1064*	*2128*	*2128*

*Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses.*

Table 4b - Location model: ZINB model baseline results

Dependent variable is the number of firms established in a Russian region n (1,…,76) in a year t (1997,…,2010) by an investor j (1,2: round-trip and genuine foreign)

Variable	*Round-trip*	*Genuine foreign*	*Pooled*	*With inter-actions*
Intercept	*-.41(0.24)**	-.51(0.21)**	-.5(0.2)***	-.62(0.2)***
Resource potential	*-.01(0.002)****	.004(0.002)**	.0002(0.001)	.003(0.002)**
Corruption	*.08(0.05)*	-.02(0.04)	.01(0.03)	-.01(0.04)
Port	*.07(0.08)*	.32(0.07)***	.24(0.06)***	.34(0.08)***
Market size	*.26(0.03)****	.09(0.02)***	.16(0.02)***	.1(0.02)***
Market potential	*-.003(0.01)*	-.01(0.01)	-.001(0.005)	.001(0.01)
Investment risk	*-.001(0.002)*	.001(0.001)	.0004(0.001)	.001(0.002)
Educational level	*.81(0.17)****	1.3(0.17)***	1.1(0.14)***	1.3(0.2)***
Institutional potential	*-.03(0.002)****	-.02(0.002)***	-.02(0.001)***	-.02(0.002)***
Roads	*.003(0.0003)****	.004(0.0003)***	.004(0.0003)***	.004(0.0003)***
Offshore dummy				.5(0.25)**
Time dummies	*Yes*	Yes	Yes	Yes
Interactions with offshore dummy				
*Resource potential*D*				-.01(0.002)***
*Corruption*D*				.05(0.06)
*Port*D*				-.24(0.11)**
*Market size*D*				.17(0.03)***
*Market potential*D*				-.01(0.01)
*Investment risk*D*				-.001(0.002)
*Educational level*D*				-.6(0.24)**
*Institutional potential*D*				-.01(0.003)**
*Roads*D*				-.001(0.001)
Inflated model [ξ]				
Intercept	*-46.2(22.8)***	-2.8(2.5)	-2.1(2.8)	-1.9(2.8)
Corruption	*-.9(0.8)*	-2.4(0.7)***	-2.9(0.74)***	-2.9(0.75)***
Market size	*1.7(0.18)*	.22(0.31)	.2(0.2)	.2(0.02)
Institutional potential	*.6(0.3)**	.11(0.03)***	.1(0.03)***	.1(0.03)***
Roads	*.03(0.01)****	-.001(0.003)	.003(0.003)	.002(0.003)
Lnalpha	*-1.2****	-1.3***	-1***	-1.2***
Vuong test	*3.2****	3.6***	4.2***	4.3***
N.obs.	*1064*	1064	2128	2128

*Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses; 3) Lnalpha - the natural log of alpha (the dispersion parameter). If the dispersion parameter is zero, log(dispersion parameter) = -infinity. If this is true, then a Poisson model would be appropriate; 4) Vuong test compares ZINB model with an ordinary negative binomial regression model. A significant z-test indicates that ZINB is preferred.*

[ξ] Coefficients of inflated stage predict excessive zeros.

First, from the results we can see that both round-trip and genuine foreign investors establish more firms in Russian regions with bigger market size, higher institutional potential, higher educational background of population and better transport infrastructure (represented by automobile and railway roads).

For the resource potential and port variables we find opposite results for the two groups of investors. In particular, according to our findings, round-trip investors tend to establish more firms in Russian regions with higher resource potential, while their genuine foreign counterparts – with lower resource potential. This result might reflect restrictions for foreign investment in the Russian resource sector which are not applied to (or can be easily overcome by) round-trip investors who are Russians by origin.

We also find that while presence of a sea port in a region stimulates genuine foreign investment into it, it is not an important factor of location decision of round-trip investors. We suggest that this indicates higher orientation of round-trip investors towards local market (both in inward and backward linkages) compared to their genuine foreign counterparts.

From the results for interaction terms with offshore dummy we further conclude that there are significant differences between location strategies of round-trip and genuine foreign investors. In particular we find that round-trip investors establish more firms than their genuine foreign counterparts in resource abundant Russian regions, regions with bigger market size, regions with higher institutional potential, regions without sea ports and regions with lower educational background of population.

The result for regional resource potential variable indicates that round-trip investors win genuine foreign investors in competition for natural resources. This result could be expected. Round-trip investors being Russians by origin have better knowledge and connections with local business networks and regional authorities. These business networks and regional authorities play a crucial role in gaining access to natural resources. Moreover round-trip investors might be themselves full or partial owners of Russian companies in resource-based industries (e.g. they utilize offshore schemes to hide export revenues from local taxes) and hence, round-trip investment is simply the reinvestment of their incomes into the same company and region (e.g. in case of using offshore tax evasion schemes in export operations).

The finding that round-trip investors establish more firms than their genuine foreign counterparts in Russian regions with bigger market size might indicate that they have certain competitive advantages (e.g. the connections with local governments) over genuine foreign investors which help them to win in competition for richer regions. The same explanation is relevant for the finding that round-trip investors establish more firms than genuine foreigners in Russian regions with higher institutional potential.

The finding that round-trip investors establish fewer firms than genuine foreigners in regions with sea ports also has a plausible explanation. As sea ports are very convenient for international transportation, this result enables us to suggest that genuine foreign investors more often than round-trip investors rely on imported intermediate goods and export the produced goods to the home or third countries.

The result that round-trip investors establish more firms than genuine foreigners in Russian regions with lower educational potential indicates that genuine foreign investment is more technologically advanced than round-trip investment.

4.2.2. Micro versus small, medium and large firms

As has been shown in Section 3 (data description) around 50% of firms in our dataset are micro firms according to the Russian classification of company`s size (with annual gross revenues less than 1.5 million Euros (60 million Rubles)). In order to determine if foreign investors pursue different location strategies in Russia by establishing micro firms than bigger firms we estimate the location model for subsamples of micro firms and bigger firms (small, medium and large altogether according to the Classification). The estimation results are presented in tables 5a, 5b, 6a and 6b. The estimation period ends in 2008 as there are only few firms established in the years 2009, 2010 and 2011 which reported annual gross revenues.

Table 5a - Location model: RENB model results. MICRO FIRMS

Dependent variable is the number of firms established in a Russian region n (1,…,76) in a year t (1997,…,2008) by an investor j (1,2: round-trip and genuine foreign)

Variable	*Round-trip*	*Genuine foreign*	*Pooled*	*With interactions*
Intercept	*.13(0.8)*	*-.5(0.5)*	*-.7(0.42)*	*.13(0.45)*
Resource potential	*.001(0.01)*	*.004(0.004)*	*-.004(0.003)*	*-.001(0.004)*
Corruption	*.1(0.14)*	*.09(0.11)*	*.23(0.1)***	*.09(0.11)*
Port	*-.26(0.25)*	*-.16(0.2)*	*-.42(0.2)***	*-.2(0.19)*
Market size	*-.01(0.03)*	*.028(0.04)*	*.048(0.03)*	*-.04(0.04)*
Market potential	*-.04(0.02)**	*.04(0.02)***	*.02(0.02)*	*.03(0.02)**
Investment Risk	*.000(0.003)*	*-.003(0.003)*	*-.003(0.002)*	*-.004(0.003)*
Educational level	*1.6(0.5)****	*.828(0.4)***	*.44(0.33)*	*.9(0.36)***
Institutional potential	*-.03(0.01)****	*-.02(0.004)****	*.02(0.003)****	*-.02(0.004)****
Roads	*.004(0.001)****	*.004(0.001)****	*.002(0.001)****	*.002(0.001)****
Offshore Dummy				*-.31(0.38)*
Time dummies	*Yes*	*Yes*	*Yes*	*Yes*
Interactions with offshore dummy				
*Resource potential*D*				*-.002(0.003)*
*Corruption*D*				*.2(0.1)***
*Port*D*				*-.4(0.17)***
*Market size*D*				*.1(0.04)***
*Market potential*D*				*-.02(0.02)*
*Investment risk*D*				*.002(0.003)*
*Educational level*D*				*-.61(0.35)**
*Institutional potential*D*				*-.01(0.004)****
*Roads*D*				*.0003(0.001)*
Log likelihood	*-957.3*	*-1413.6*	*-2485*	*-2415.9*
Likelihood-ratio test vs. pooled	*156.5****	*133.7****	*278.5****	*280****
N.obs.	*912*	*912*	*1824*	*1824*

Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses.

Table 5b - Location model: ZINB model results. MICRO FIRMS

Dependent variable is the number of firms established in a Russian region n (1,…,76) in a year t (1997,…,2008) by an investor j (1,2: round-trip and genuine foreign)

Variable	*Round-trip*	*Genuine foreign*	*Pooled*	*With interactions*
Intercept	*-1.4 (0.38)****	*-.92(0.36)***	*-1.2(0.3)****	*-.66(0.34)**
Resource potential	*-.003(0.003)*	*.001(0.003)*	*-.001(0.002)*	*-.0003(0.003)*
Corruption	*.06(0.08)*	*-.17(0.07)***	*-.12(0.06)**	*-.15(0.08)***
Port	*.14(0.13)*	*.53(0.12)****	*.42(0.1)****	*.56(0.13)****
Market size	*.26(0.05)****	*.14(0.04)****	*.12(0.03)****	*.16(0.05)****
Market potential	*-.02(0.01)**	*.001(0.01)*	*-.01(0.01)*	*-.01(0.02)*
Investment Risk	*.0001(0.003)*	*-.001(0.002)*	*-.0001(0.002)*	*.001(0.003)*
Educational level	*.3(0.3)*	*1.2(0.3)****	*.95(0.22)****	*.98(0.3)****
Institutional potential	*-.02(0.003)****	*-.01(0.003)***	*-.01(0.003)****	*-.004(0.003)*
Roads	*.01(0.001)****	*.003(0.001)****	*.004(0.0004)****	*.004(0.001)****
Offshore Dummy				*-.62(0.44)*
Time dummies	*Yes*	*Yes*	*Yes*	*Yes*
Interactions with offshore dummy				
*Resource potential*D*				*-.002(0.004)*
*Corruption*D*				*.21(0.11)**
*Port*D*				*-.31(0.18)**
*Market size*D*				*.08(0.07)*
*Market potential*D*				*-.004(0.02)*
*Investment risk*D*				*.001(0.0004)*
*Educational level*D*				*-.42(0.42)*
*Institutional potential*D*				*-.02(0.004)****
*Roads*D*				*.0001(0.001)*
Inflated model [ξ]				
Intercept	*1.2(3.8)*	*.62(2.1)*	*.48(1.6)*	*.87(1.82)*
Corruption	*-6.7(2.7)***	*-2.3(0.73)****	*-2.44(0.7)****	*-2.9(0.76)****
Market size	*-.52(0.41)*	*.32(0.21)*	*-.02(0.2)*	*.21(0.21)*
Institutional potential	*.12(0.06)**	*.07(0.02)****	*.06(0.02)****	*.08(0.02)****
Roads	*.03(0.01)***	*-.01(0.004)*	*.001(0.003)*	*-.003(0.004)*
Log likelihood	*-985.7*	*-1433.6*	*-2515.6*	*-2435.4*
Lnalpha	*-0.99****	*-0.35****	*-0.24****	*-0.39****
Vuong test	*2.95****	*2.3***	*3.2****	*3.1****
N.obs.	*912*	*912*	*1824*	*1824*

Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses; 3) Lnalpha - the natural log of alpha (the dispersion parameter). If the dispersion parameter is zero, log(dispersion parameter) = -infinity. If this is true, then a Poisson model would be appropriate; 4) Vuong test compares ZINB model with an ordinary negative binomial regression model. A significant z-test indicates that ZINB is preferred.

[ξ] Coefficients of inflated stage predict excessive zeros.

Table 6a - Location model: RENB model results. SMALL, MEDIUM AND LARGE FIRMS

Dependent variable is the number of firms established in a Russian region n (1,…,76) in a year t (1997,…,2008) by an investor j (1,2: round-trip and genuine foreign)

Variable	*Round-trip*	*Genuine foreign*	*Pooled*	*With interactions*
Intercept	*1.8(0.94)**	*.62(0.9)*	*.27(0.5)*	*.17(0.6)*
Resource potential	*.002(0.004)*	*-.001(0.004)*	*-.00003(0.003)*	*.002(0.004)*
Corruption	*-.03(0.11)*	*.22(0.12)**	*.1(0.1)*	*.23(0.11)***
Port	*-.06(0.2)*	*.28(0.22)*	*.15(0.2)*	*.35(0.19)**
Market size	*.08(0.03)****	*.09(0.03)****	*.08(0.02)****	*.05(0.02)***
Market potential	*.02(0.02)*	*.03(0.02)*	*.03(0.02)***	*.03(0.02)***
Investment risk	*-.01(0.003)***	*.001(0.003)*	*-.003(0.002)*	*.0003(0.003)*
Educational level	*1.7(0.4)****	*1.7 (0.44)****	*1.6(0.25)****	*1.9(0.4)****
Institutional potential	*-.03(0.004)****	*-.03(0.01)****	*-.03(0.003)****	*-.03(0.004)****
Roads	*.002(0.001)****	*.01(0.001)****	*.003(0.001)****	*.004(0.001)****
Offshore dummy				*1.6(0.34)****
Time dummies	*Yes*	*Yes*	*Yes*	*Yes*
Interactions with offshore dummy				
*Resource potential*D*				*-.003(0.003)*
*Corruption*D*				*-.27(0.09)****
*Port*D*				*-.46(0.13)****
*Market size*D*				*.05(0.02)***
*Market potential*D*				*-.01(0.01)*
*Investment risk*D*				*-.01(0.003)**
*Educational level*D*				*-.1(0.3)*
*Institutional potential*D*				*.001(0.004)*
*Roads*D*				*-.002(0.001)****
Log likelihood	*-972.6*	*-933.3*	*-1932.9*	*-1904.4*
Likelihood-ratio test vs. pooled	*64.7****	*69.4****	*144.1****	*151****
N.obs.	*912*	*912*	*1824*	*1824*

*Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses.*

Table 6b - Location model: ZINB model results. SMALL, MEDIUM AND LARGE FIRMS

Dependent variable is the number of firms established in a Russian region n (1,…,76) in a year t (1997,…,2008) by an investor j (1,2: round-trip and genuine foreign)

Variable	*Round-trip*	*Genuine foreign*	*Pooled*	*With interactions*
Intercept	*-.7(0.32)***	*-1.7(0.3)****	*-1.2(0.23)****	*-1.9(0.3)****
Resource potential	*-.003(0.002)*	*-.0001(0.002)*	*-.002(0.002)*	*.001(0.002)*
Corruption	*-.02(0.07)*	*.17(0.07)***	*.078(0.05)*	*.16(0.07)***
Port	*-.03(0.11)*	*.36(0.11)****	*.17(0.08)***	*.35(0.11)****
Market size	*.23(0.03)****	*.16(0.03)****	*.19(0.02)****	*.15(0.03)****
Market potential	*.01(0.01)*	*.02(0.01)**	*.02(0.01)***	*.02(0.01)*
Investment risk	*-.01(0.002)**	*.001(0.002)*	*-.002(0.002)*	*.002(0.002)*
Educational level	*.93(0.23)****	*1.04(0.23)****	*1.02(0.17)****	*1.12(0.24)****
Institutional potential	*-.02(0.003)****	*-.028(0.004)****	*-.03(0.002)****	*-.03(0.003)****
Roads	*.003(0.001)****	*.01(0.0004)****	*.004(0.0003)****	*.005(0.0004)****
Offshore dummy				*1.4(0.4)****
Time dummies	*Yes*	*Yes*	*Yes*	*Yes*
Interactions with offshore dummy				
*Resource potential*D*				*-.004(0.003)*
*Corruption*D*				*-.18(0.1)**
*Port*D*				*-.36(0.15)***
*Market size*D*				*.09(0.04)***
*Market potential*D*				*-.002(0.02)*
*Investment risk*D*				*-.01(0.003)***
*Educational level*D*				*-.23(0.33)*
*Institutional potential*D*				*.002(0.004)*
*Roads*D*				*-.002(0.001)****
Inflated model [ξ]				
Intercept	*-54.4(36.3)*	*-10.4 (3.5)****	*-167.5(176)*	*-166.1(174.8)*
Corruption	*-.9(1.7)*		*-3.7(3.8)*	*-3.7(3.8)*
Market size	*2.34(2.1)*	*.2(0.3)*	*8.5(8.8)*	*8.4(8.8)*
Institutional potential	*.7(0.5)*	*.14(0.05)****	*2.3(2.4)*	*2.3(2.4)*
Roads	*.03(0.02)**	*.01(0.01)*	*.08(0.1)*	*.08(0.1)*
Log likelihood	*-993.2*	*-968.2*	*-1983.6*	*-1970*
Lnalpha	*-1.6****	*-1.9****	*-1.5****	*-1.6****
Vuong test	*2.7****	*1.9***	*4.5****	*4.5****
N.obs.	*912*	*912*	*1824*	*1824*

*Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses; 3) Lnalpha - the natural log of alpha (the dispersion parameter). If the dispersion parameter is zero, log(dispersion parameter) = -infinity. If this is true, then a Poisson model would be appropriate; 4) Vuong test compares ZINB model with an ordinary negative binomial regression model. A significant z-test indicates that ZINB is preferred.* [ξ] *Coefficients of inflated stage predict excessive zeros.*

In general the results do not differ much from the baseline and between the subsamples. However, we have mixed results for corruption variable. In particular for bigger firms (i.e. when micro firms are excluded) we find that genuine foreign investors establish more firms in less corrupt Russian regions, and also compared to their round-trip counterparts. These results have been expected. But for micro firms we found an opposite and unexpected result that genuine foreign investors establish more firms in more corrupt Russian regions (?!) and furthermore they invest more into more corrupt Russian regions compared to round-trip investors. After checking the structure of firms in our data by country we found that many firms established by investors from developing and transition economies are micro firms. As a rule these countries are much more corrupt than developed ones. Investors from corrupt countries may be more equipped to cope with corruption (Cuervo-Cazurra, 2006), and, hence, they may have a competitive advantage over investors from non-corrupt countries when entering corrupt economies. In our earlier study using the same database as in this paper we also found that foreign investors from more corrupt countries tend to establish firms in more corrupt Russian regions (Ledyaeva et al. mimeo). To count for this issue we estimate our model excluding from the genuine investors` group firms established by investors from developing and transition countries. The results are presented in tables 7a and 7b.

Table 7a - Location model. RENB and ZINB models` results (only with interaction terms). Round-trip investors vs. genuine foreign investors from developed countries. Whole sample

Dependent variable is the number of firms established in a Russian region n (1,…,76) in a year t (1997,…,2008) by an investor j (1,2: round-trip investors and investors from developed countries)

Variable	*RENB*	*ZINB*
Intercept	*-.3(0.5)*	*-1.8(0.3)****
Resource potential	*.01(0.004)**	*.01(0.002)***
Corruption	*.23(0.11)***	*.23(0.1)****
Port	*.32(0.2)*	*.53(0.11)****
Market size	*.01(0.02)*	*.14(0.03)****
Market potential	*.03(0.02)***	*.02(0.01)**
Investment risk	*-.003(0.003)*	*-.002(0.002)*
Educational level	*2(0.4)****	*.94(0.24)****
Institutional potential	*-.03(0.004)****	*-.03(0.003)****
Roads	*.003(0.001)****	*.004(0.001)****
Offshore dummy	*1.7(0.3)****	*1.63(0.34)****
Time dummies	*Yes*	*Yes*
Interactions with offshore dummy		
*Resource potential*D*	*-.01(0.003)****	*-.01(0.003)****
*Corruption*D*	*-.2(0.08)****	*-.14(0.1)*
*Port*D*	*-.57(0.11)****	*-.46(0.14)****
*Market size*D*	*.05(0.02)***	*.14(0.04)****
*Market potential*D*	*-.03(0.01)***	*-.02(0.02)*
*Investment risk*D*	*-.001(0.003)*	*-.001(0.003)*
*Educational level*D*	*-.08(0.26)*	*-.34(0.31)*
*Institutional potential*D*	*.01(0.003)*	*.01(0.004)***
*Roads*D*	*-.0002(0.0004)*	*-.001(0.001)*
Inflated model [ξ]		
Intercept		*-19.5 (7.9)***
Corruption		
Market size		
Institutional potential		*.2(0.07)****
Roads		*.03(0.02)**
Log likelihood (for RENB)	*-2314.8*	
Likelihood-ratio test vs. pooled (for RENB)	*325.4****	
Lnalpha (for ZINB)		*-1.3****
Vuong test (for ZINB)		*1.99***
N.obs.	*1824*	*1824*

*Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses; 3) Lnalpha - the natural log of alpha (the dispersion parameter). If the dispersion parameter is zero, log(dispersion parameter) = -infinity. If this is true, then a Poisson model would be appropriate; 4) Vuong test compares ZINB model with an ordinary negative binomial regression model. A significant z-test indicates that ZINB is preferred.*

[ξ] *Coefficients of inflated stage predict excessive zeros.*

Table 7b - Location model. RENB and ZINB models` results (only with interaction terms). Round-trip investors vs. genuine foreign investors from developed countries. Subsamples by size of firms

Dependent variable is the number of firms established in a Russian region n (1,…,76) in a year t (1997,…,2008) by an investor j (1,2: round-trip investors and investors from developed countries)

Variable	*Micro firms*		*Small, medium and large firms altogether*	
	RENB	*ZINB*	*RENB*	*ZINB*
Intercept	*-.02(0.6)*	*-1.88(0.37)****	*-.93(0.62)*	*-3.1(0.4)****
Resource potential	*.01(0.01)*	*.01(0.003)****	*.01(0.004)*	*.002(0.003)*
Corruption	*.07(0.13)*	*.02(0.09)*	*.42(0.12)****	*.32(0.1)****
Port	*.37(0.23)*	*.58(0.14)****	*.3(0.21)*	*.47(0.15)****
Market size	*-.004(0.03)*	*.11(0.04)****	*.05(0.03)*	*.12(0.04)****
Market potential	*.03(0.02)**	*.02(0.02)*	*.03(0.02)*	*.01(0.02)*
Investment risk	*-.01(0.003)**	-.01(0.003)*	*-.0001(0.004)*	*.002(0.003)*
Educational level	*1.86(0.45)****	*.83(0.32)****	*1.9(0.44)****	*1.2(0.32)****
Institutional potential	*-.03(0.01)****	*-.03(0.004)****	*-.04(0.01)****	*-.03(0.004)****
Roads	*.002(0.001)***	*.004(0.001)****	*.004(0.001)****	*.006(0.001)****
Offshore dummy	*.64(0.4)*	*.73(0.43)**	*2.8(0.43)****	*2.8(0.44)****
Time dummies	*Yes*	*Yes*	*Yes*	*Yes*
Interactions with offshore dummy				
*Resource potential*D*	*-.01(0.003)***	*-.01(0.004)****	*-.01(0.004)***	*-.006(0.004)**
*Corruption*D*	*.05(0.1)*	*.07(0.12)*	*-.48(0.1)****	*-.34(0.12)****
*Port*D*	*-.72(0.15)****	*-.48(0.19)***	*-.37(0.16)***	*-.46(0.18)***
*Market size*D*	*.03(0.03)*	*.18(0.06)****	*.07(0.03)***	*.12(0.05)****
*Market potential*D*	*-.06(0.02)****	*-.04(0.02)**	*-.001(0.02)*	*.01(0.02)*
*Investment risk*D*	*.01(0.004)*	*.01(0.003)*	*-.01(0.004)**	*-.01(0.004)**
*Educational level*D*	*-.27(0.35)*	*-.66(0.41)*	*-.08(0.36)*	*-.31(0.4)*
*Institutional potential*D*	*.0003(0.01)*	*.01(0.01)**	*.01(0.01)**	*.01(0.01)*
*Roads*D*	*.001(0.001)***	*.001(0.001)*	*-.002(0.001)****	*-.003(0.001)****
Inflated model [ξ]				
Intercept		*-9.05(6.9)*		*-18.7 (9.9)**
Corruption		*-18.9(8.6)***		*-1.4(0.78)**
Market size		*-.24(0.48)*		*-1.2(0.8)*
Institutional potential		*.5(0.22)***		*.2(0.08)***
Roads		*.08(0.04)**		*.04(0.02)***
Log likelihood (for RENB)	*-1728.1*		*-1632.7*	
Likelihood-ratio test vs. pooled (for RENB)	*205****		*124****	
Lnalpha (for ZINB)		*-1.04****		
Vuong test (for ZINB)		*3.67****		*2.61****
N.obs.	*1824*	*1824*	*1824*	*1824*

*Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses; 3) Lnalpha - the natural log of alpha (the dispersion parameter). If the dispersion parameter is zero, log(dispersion parameter) = -infinity. If this is true, then a Poisson model would be appropriate; 4) Vuong test compares ZINB model with an ordinary negative binomial regression model. A significant z-test indicates that ZINB is preferred.*

[ξ] *Coefficients of inflated stage predict excessive zeros.*

As we can see the unexpected result for corruption variable in the sample of micro firms disappears: the coefficients of the corruption variable and its interaction term with offshore dummy are not statistically significant. Moreover, in the subsample of bigger firms the result that genuine foreign investors establish more firms in less corrupt Russian regions becomes stronger.

4.2.3. Industrial patterns

Next we estimate our location model for main sectors of the Russian economy where firms with foreign ownership are concentrated, namely, manufacturing, trade and repair, and combined financial and real estate sectors.

4.2.3.1 Manufacturing sector

In tables 8a and 8b we present estimation results for manufacturing firms. Here we use cross-sectional data as in panel data the number of zeros is extremely high and it is impossible to get reliable estimates even with zero-inflated models. For estimation purposes we utilize Poisson or negative binomial (NB) models which are commonly used for count data.

Table 8a - Location model: Manufacturing sector. Estimation results for cross-section data. MICRO FIRMS

Dependent variable is the number of firms established in a Russian region n (1,…,76) in the period of 1997-2011 (as cumulative) by an investor j (1,2: round-trip and genuine foreign)

Variable	*Round-trip*	*Genuine foreign*	*Pooled*	*With interactions*
	Poisson	*NB*	*NB*	*NB*
Intercept	*-.62(0.7)*	*.7 (0.5)*	*.32(0.6)*	*.7(0.53)*
Resource potential	*-.01(0.01)**	*.01(0.01)*	*.004(0.01)*	*.01(0.01)*
Corruption	*.36(0.15)***	*.01(0.12)*	*.09(0.14)*	*.01(0.12)*
Port	*.09(0.3)*	*.16(0.24)*	*.1(0.26)*	*.16(0.24)*
Market size	*.24(0.07)****	*-.03(0.07)*	*.02(0.08)*	*-.03(0.07)*
Market potential	*.02(0.03)*	*.04(0.03)**	*.04(0.03)*	*.04(0.03)**
Investment risk	*-.004(0.01)*	*-.004(0.01)*	*-.01(0.01)*	*-.004(0.01)*
Educational level	*.11(0.6)*	*1.14(0.5)***	*1.05(0.6)**	*1.14(0.5)***
Institutional potential	*-.01(0.01)**	*-.03(0.01)****	*-.03(0.01)****	*-.03(0.01)****
Roads	*.01(0.001)****	*.004(0.001)****	*.004(0.001)****	*.004(0.001)****
Offshore dummy				*-1.2(0.95)*
Interactions with offshore dummy				
*Resource potential*D*				*-.02(0.01)***
*Corruption*D*				*.32(0.22)*
*Port*D*				*-.07(0.41)*
*Market size*D*				*.28(0.12)***
*Market potential*D*				*-.03(0.04)*
*Investment risk*D*				*-.003(0.01)*
*Educational level*D*				*-.99(0.87)*
*Institutional potential*D*				*.02(0.01)**
*Roads*D*				*-.0003(0.002)*
Likelihood-ratio test of alpha=0	*1.01*	*9.2****	*136.2****	*10.2****
Pseudo R2	*0.58*	*0.22*	*0.16*	*0.24*
N. obs.	*76*	*76*	*152*	*152*

*Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses; 3) Likelihood ratio test of alpha=zero - the likelihood ratio test comparing this model to a Poisson model. If the test is statistically significant, negative binomial model is preferred.*

Table 8b - Location model: Manufacturing sector. Estimation results for cross-section data. SMALL; MEDIUM AND LARGE FIRMS

Dependent variable is the number of firms established in a Russian region n (1,…,76) in the period of 1997-2011 (as cumulative) by an investor j (1,2: round-trip and genuine foreign)

Variable	*Round-trip*	*Genuine foreign*	*Pooled*	*With interactions*
	NB	*NB*	*NB*	*NB*
Intercept	*.82(0.72)*	*.02(0.6)*	*.25(0.5)*	*.01(0.6)*
Resource potential	*-.001(0.01)*	*.01(0.01)*	*.01(0.01)*	*.01(0.01)*
Corruption	*.001(0.16)*	*.38(0.13)****	*.2(0.11)**	*.4(0.14)****
Port	*-.36(0.3)*	*.38(0.25)*	*.03(0.2)*	*.4(0.26)*
Market size	*.12(0.1)*	*.0038(0.08)*	*.04(0.07)*	*-.001(0.09)*
Market potential	*.02(0.03)*	*.04(0.03)**	*.03(0.02)*	*.04(0.03)*
Investment risk	*.01(0.01)*	*.003(0.01)*	*.01(0.01)*	*.003(0.01)*
Educational level	*.35(0.61)*	*.34(0.53)*	*.5(0.44)*	*.37(0.57)*
Institutional potential	*-.03(0.01)****	*-.04(0.01)****	*-.04(0.01)****	*-.05(0.01)****
Roads	*.004(0.001)****	*.01(0.001)****	*.01(0.001)****	*.01(0.001)****
Offshore dummy				*.8(0.9)*
Interactions with offshore dummy				
*Resource potential*D*				*-.01(0.01)*
*Corruption*D*				*-.37(0.21)**
*Port*D*				*-.7(0.4)**
*Market size*D*				*.12(0.13)*
*Market potential*D*				*-.02(0.04)*
*Investment risk*D*				*.004(0.01)*
*Educational level*D*				*-.06(0.8)*
*Institutional potential*D*				*.02(0.01)**
*Roads*D*				*-.001(0.002)*
Likelihood-ratio test of alpha=0	*16****	*11.6****	*73.5****	*26.9****
Pseudo R2	*0.19*	*0.26*	*0.2*	*0.23*
N. obs.	*76*	*76*	*152*	*152*

*Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses; 3) Likelihood ratio test of alpha=zero - the likelihood ratio test comparing this model to a Poisson model. If the test is statistically significant, negative binomial model is preferred.*

First, for the subsample of micro firms we find that round-trip investors establish more firms in less corrupt Russian regions. For the subsample of larger firms this result does not hold – the coefficient of corruption variable is not statistically significant.

On the contrary, for genuine investors in the subsample of larger firms we find that they establish more firms in less corrupt regions. We further find that in the subsample of larger firms genuine foreign investors invest more into less corrupt regions also compared to round-trip investors. This result is expected as round-trip investors have better knowledge about corruption in Russia and how to cope with it and, hence, high corruption in a particular Russian region, most likely, will not deter them from investing into it.

Second, for the subsample of micro firms we find that round-trip investors tend to establish more firms in regions with higher resource potential. Furthermore, they invest into more resource abundant regions also compared to their genuine foreign counterparts. This indicates that round-trip investors invest more than genuine foreigners into resource-based manufacturing industries which further confirm that they have better access to Russian natural resources than genuine foreign investors.

Market size variable is statistically significant and positive only for micro firms established by round-trip investors. The interaction term of market size and offshore dummy is also positive and statistically significant indicating that round-trip investors invest more into regions with bigger market size also compared to genuine foreign investors. These results might be largely attributed to the dominance of firms in food industry in the subsample of micro firms established by round-trip investors. Firms in food industry are usually rather small and their activities are very oriented towards local market.

An interesting result is that educational background of population is statistically significant (and positive) only for micro firms established by genuine foreign investors. This might reflect the dominance of more innovated and technologically advanced micro firms in the group of genuine foreign investors.

A surprising result is that a direct effect of port variable is never statistically significant. But we find evidence (albeit marginally statistically significant) that in the subsample of larger firms round-trip investors establish fewer firms in the regions with sea port compared to genuine foreign investors. This result indicates that in manufacturing sector firms established by genuine foreign investors are more oriented towards import of intermediate goods and export of produced products.

Finally, we find that both round-trip and genuine foreign investors tend to invest into regions with higher institutional potential and higher density of automobile and railway roads.

4.2.3.2 Trade and repair sector

In tables 9a and 9b we present results for the firms in trade and repair sector. Here we also use cross-sectional data because of extremely large number of zeros in panel data. For estimation we choose between Poisson, negative binomial (NB), ZINB and ZIP (zero-inflated poisson) models based on the relevant test statistics.

Table 9a - Location model: Trade and repair sector. Estimation results for cross-section data. MICRO FIRMS

Dependent variable is the number of firms established in a Russian region n (1,…,76) in the period of 1997-2011 (as cumulative) by an investor j (1, 2: round-trip and genuine foreign)

Variable	*Round-trip*	*Genuine foreign*	*Pooled*	*With interactions*
	Poisson	*NB*	*ZINB*	*ZINB*
Intercept	*1.7(0.6)****	*1.8 (0.8)***	*1.9(0.7)***	*2.2(0.7)****
Resource potential	*-.01(0.01)***	*.002(0.01)*	*.003(0.01)*	*.003(0.01)*
Corruption	*.35(0.15)***	*-.13(0.2)*	*-.23(0.15)*	*-32(0.15)***
Port	*-.15(0.26)*	*-.11(0.31)*	*-.001(0.3)*	*.03(0.3)*
Market size	*.53(0.07)****	*.01(0.1)*	*.09(0.1)*	*.06(0.09)*
Market potential	*.02(0.03)*	.03(0.03)	*.01(0.03)*	*-.01(0.03)*
Investment risk	*-.01(0.01)**	*-.01(0.01)*	*-.003(0.01)*	*-.002(0.01)*
Educational level	*-1.5(0.54)****	*1.3(0.71)**	*.48(0.7)*	*.65(0.67)*
Institutional potential	*-.02(0.01)****	*-.03(0.01)****	*-.02(0.01)****	*-.02(0.01)***
Roads	*.001(0.001)*	*.004(0.002)****	*.004(0.001)****	*.01(0.001)****
Offshore dummy				*-.2(1.1)*
Interactions with offshore dummy				
*Resource potential*D*				*-.01(0.01)*
Corruption D*				*.57(0.25)***
*Port*D*				*.04(0.46)*
*Market size*D*				*.46(0.15)****
*Market potential*D*				*.03(0.05)*
*Investment risk*D*				*-.01(0.01)*
*Educational level*D*				*-2.4(1.13)***
*Institutional potential*D*				*-.004(0.01)*
*Roads*D*				*.01(0.002)***
Inflated model [ξ]				
Intercept			*-15.2(13.5)*	*-8.4(5.6)*
Corruption			*-11.1(7.5)*	*-4.5(2.8)*
Market size			*-.15(0.4)*	*.54(0.58)*
Institutional potential			*.46(0.34)*	*.26(0.14)**
Roads			*.07(0.6)*	*.02(0.02)*
Likelihood-ratio test of alpha=0	*NB and ZINB do not converge*	*117.8****		
Pseudo R2	*0.85*	*0.19*		
Lnalpha (for ZINB/ZIP)	*NB and ZINB do not converge*		*-0.3**	*2.3***
Vuong test (for ZINB/ZIP)			*2.7****	*-1.2****
N.obs.	*76*	*76*	*152*	*152*

*Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses; 3) Lnalpha - the natural log of alpha (the dispersion parameter). If the dispersion parameter is zero, log(dispersion parameter) = -infinity. If this is true, then a Poisson model would be appropriate; 4) Vuong test compares ZINB model with an ordinary negative binomial regression model. A significant z-test indicates that ZINB is preferred.*

[ξ] *Coefficients of inflated stage predict excessive zeros.*

Table 9b - Location model: Trade and repair sector. Estimation results for cross-section data. SMALL, MEDIUM AND LARGE FIRMS

Dependent variable is the number of firms established in a Russian region n (1,…,76) in the period of 1997-2011 (as cumulative) by an investor j (1, 2: round-trip and genuine foreign)

Variable	*Round-trip*	*Genuine foreign*	*Pooled*	*With interactions*
	Poisson	*ZINB*	*ZINB*	*NB*
Intercept	*1.6(0.45)****	*.47(0.66)*	*.99(0.5)***	*.85(0.6)*
Resource potential	*-.01(0.01)*	*-.002(0.01)*	*-.003(0.004)*	*-.01(0.01)*
Corruption	*.06(0.13)*	*.02(0.2)*	*.05(0.2)*	*-.01(0.15)*
Port	*.3(0.2)*	*-.22(0.3)*	*.07(0.2)*	*-.2(0.27)*
Market size	*.31(0.05)****	*.15(0.1)**	*.2(0.07)****	*.13(0.09)*
Market potential	*.06(0.03)***	*.01(0.04)*	*.04(0.03)*	*.03(0.03)*
Investment risk	*-.01(0.01)*	*-.01(0.01)*	*-.01(0.01)***	*-.01(0.01)**
Educational level	*-.13(0.42)*	*1.3(0.6)***	*86(0.5)**	*1.5(0.6)****
Institutional potential	*-.04(0.01)****	*.02(0.01)***	*-.03(0.01)****	*-.03(0.01)****
Roads	*.003(0.001)****	*.01(0.001)****	*.004(0.001)****	*.01(0.001)****
Offshore dummy				*.52(0.87)*
Interactions with offshore dummy				
*Resource potential*D*				*.01(0.01)*
Corruption D*				*.08(0.22)*
*Port*D*				*.57(0.4)*
*Market size*D*				*.15(0.12)*
*Market potential*D*				*.02(0.04)*
*Investment risk*D*				*.001(0.01)*
*Educational level*D*				*-1.3(0.8)*
*Institutional potential*D*				*-.01(0.01)*
*Roads*D*				*-.003(0.002)**
Inflated model [ξ]				
Intercept		*-22.2(19.8)*	*-31 (52)*	
Corruption		*1.75(1.7)*	*2.3(3.1)*	
Market size		*1.5(1.4)*	*1.2(1.8)*	
Institutional potential		*.3(0.24)*	*.33(0.53)*	
Roads		*.001(0.01)*	*.02(0.06)*	
Likelihood-ratio test of alpha=0	*0.00*			*4.4***
Pseudo R2	*0.88*			*0.31*
Lnalpha (for ZINB/ZIP)		*-1.6***	*-1.7***	
Vuong test (for ZINB/ZIP)		*2***	*1.5**	
N.obs.	*76*	*76*	*152*	*152*

*Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses; 3) Lnalpha - the natural log of alpha (the dispersion parameter). If the dispersion parameter is zero, log(dispersion parameter) = -infinity. If this is true, then a Poisson model would be appropriate; 4) Vuong test compares ZINB model with an ordinary negative binomial regression model. A significant z-test indicates that ZINB is preferred.*

[ξ] *Coefficients of inflated stage predict excessive zeros.*

First, we again unexpectedly find that in the subsample of micro firms, genuine foreign investors tend to establish more firms in more corrupt Russian regions. However, as in previous section, when we exclude the firms established by investors from developing and transition countries from the genuine foreign investors` group, this result disappears (the relevant coefficients become statistically insignificant).

Second, we find that market size variable is positively related to the number of established firms in all cases except for micro firms established by genuine foreign investors. This result is expected and indicates that foreign investments in trade and repair sector are oriented towards local market. We further find that round-trip investors establish more micro firms in regions with bigger market size also compared to genuine foreign investors. Hence, as in manufacturing industries, micro firms established by round-trip investors are more oriented towards local market which again might reflect the dominance of trade firms related to food industry.

For micro firms we also find that genuine foreign investors tend to establish firms in regions with higher educational background of population than their round-trip counterparts. This again indicates, as in manufacturing sector, that micro firms established by genuine foreigners are more innovated. This result holds for larger firms as well, but with less statistical significance.

We also find that for the subsample of micro firms round-trip investors tend to establish more firms in resource abundant regions. However, the interaction term with offshore dummy is not statistically significant.

Finally, as for manufacturing sector, we find that both round-trip and genuine foreign investors tend to invest into regions with higher institutional potential and higher density of automobile and railway roads.

4.2.3.3 Financial and real estate sectors

In tables 10a and 10b we present the results for combined financial and real estate sector. We again use cross-sectional data because of extremely large number of zeros in panel data. For estimation we choose between Poisson, negative binomial, ZINB and ZIP models based on the relevant test statistics.

Table 10a - Location model: Combined financial and real estate sector. Estimation results for cross-section data. MICRO FIRMS

Dependent variable is the number of firms established in a Russian region n (1,…,76) in the period of 1997-2011 (as cumulative) by an investor j (1, 2: round-trip and genuine foreign)

Variable	*Round-trip*	*Genuine foreign*	*Pooled*	*With interactions*
	NB	*ZIP*	*NB*	*NB*
Intercept	*1.2 (0.7)**	*-.54(0.5)*	*.52(0.55)*	*-.37(0.75)*
Resource Potential	*-.0001(0.01)*	*-.004(0.004)*	*-.001(0.01)*	*-.001(0.01)*
Corruption	*.25(0.2)*	*.3 (0.13)***	*.22(0.13)**	*.18(0.17)*
Port	*.35(0.27)*	*.5(0.05)***	*.35(0.21)*	*.28(0.3)*
Market size	*.35(0.1)****	*.28(0.05)****	*.28(0.07)****	*.2(0.09)***
Market potential	*.003(0.03)*	*.01(0.03)*	*.01(0.03)*	*.01(0.03)*
Investment risk	*.0003(0.01)*	*.003(0.01)*	*.001(0.01)*	*.002(0.01)*
Educational level	*-.31(0.57)*	*.49(0.49)*	*.52(0.46)*	*1.5(0.65)***
Institutional potential	*-.04(0.01)****	*-.01(0.01)*	*-.03(0.01)****	*-.02(0.01)****
Roads	*.003(0.001)****	*.01(0.001)****	*.003(0.001)****	*.004(0.001)****
Offshore dummy				*1.6(1.03)*
Interactions with offshore dummy				
*Resource potential*D*				*.001(0.01)*
Corruption D*				*.07(0.24)*
*Port*D*				*.08(0.4)*
*Market size*D*				*.16(0.14)*
*Market potential*D*				*-.01(0.05)*
*Investment risk*D*				*-.002(0.01)*
*Educational level*D*				*-1.8(0.87)***
*Institutional potential*D*				*-.013(0.01)*
*Roads*D*				*-.0003(0.002)*
Inflated model [ξ]				
Intercept		*-5.2(2.4)***		
Corruption		*.14(0.5)*		
Market size		*.15(0.35)*		
Institutional potential		*.08(0.03)****		
Roads		*.003(0.004)*		
Likelihood -ratio test of alpha=0	*32.7****		*299.9****	*43.3****
Pseudo R2	*0.3*		*0.26*	*0.27*
Lnalpha (for ZINB/ZIP)		*-17.5*		
Vuong test (for ZINB/ZIP)		*2.2***		
N.obs.	*76*	*76*	*152*	*152*

*Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses; 3) Lnalpha - the natural log of alpha (the dispersion parameter). If the dispersion parameter is zero, log (dispersion parameter) = -infinity. If this is true, then a Poisson model would be appropriate; 4) Vuong test compares ZIP model with an ordinary Poisson regression model. A significant z-test indicates that ZIP is preferred.*

[ξ] *Coefficients of inflated stage predict excessive zeros.*

Table 10b - Location model: Combined financial and real estate sector. Estimation results for cross-section data. SMALL, MEDIUM AND LARGE FIRMS

Dependent variable is the number of firms established in a Russian region n (1,…,76) in the period of 1997-2011 (as cumulative) by an investor j (1, 2: round-trip and genuine foreign)

Variable	*Round-trip*	*Genuine foreign*	*Pooled*	*With interactins*
	Poisson	*Poisson*	*NB*	*Poisson*
Intercept	*.95(0.55)**	*-3.2(1)****	*-.5(0.64)*	*-3.2(1.03)****
Resource Potential	*-.01(0.01)**	*.001(0.01)*	*-.002(0.01)*	*.001(0.01)*
Corruption	*.12(0.15)*	*.63(0.23)****	*.26(0.2)*	*.6(0.23)****
Port	*.27(0.22)*	*.98(0.35)****	*.54(0.25)***	*.9(0.4)****
Market size	*.41(0.06)****	*.35(0.09)****	*.36(0.08)****	*.35(0.09)****
Market potential	*.05(0.03)*	*.02(0.06)*	*.03(0.03)*	*.02(0.06)*
Investment risk	*.01(0.01)*	*.02(0.01)*	*.01(0.01)*	*.02(0.01)*
Educational level	*-.09(0.45)*	*.68(0.71)*	*.51(0.55)*	*.68(0.71)*
Institutional potential	*-.04(0.01)****	*-.03(0.01)****	*-.04(0.01)****	*-.03(0.01)****
Roads	*.003(0.001)****	*.004(0.001)****	*.003(0.001)***	*.004(0.001)****
Offshore dummy				*4.13(1.2)****
Interactions with offshore dummy				
*Resource potential*D*				*-.01(0.01)*
Corruption D*				*-.5(0.27)**
*Port*D*				*-.7(0.4)**
*Market size*D*				*.06(0.11)*
*Market potential*D*				*.03(0.06)*
*Investment risk*D*				*-.01(0.01)*
*Educational level*D*				*-.76(0.84)*
*Institutional potential*D*				*-.01(0.01)*
*Roads*D*				*-.001(0.002)*
Likelihood -ratio test of alpha=0	*0.00*	*0.00*	*139.2****	*0.00*
Pseudo R2	*0.93*	*0.84*	*0.32*	*0.4*
N.obs.	*76*	*76*	*152*	*152*

*Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses; 3) Likelihood ratio test of alpha=zero - the likelihood ratio test comparing this model to a Poisson model. If the test is statistically significant, negative binomial model is preferred.*

We find that genuine foreign investors tend to establish more firms in less corrupt Russian regions (both micro and larger firms) while for round-trip investors the coefficients of the corruption variable are not statistically significant in both subsamples. The result for genuine foreign investor is especially strong in the subsample of larger firms. Furthermore, for larger firms, the coefficient of the interaction term between offshore dummy and corruption variable is statistically significant and its sign indicates that round-trip investors establish more firms in more corrupt regions compared to genuine foreigners. And since this is widely accepted that financial and real estate activities are largely associated with corruption money

laundering, this result might reflect the corruption money laundering hypothesis of round-trip investment in Russia.

We further find that while for genuine foreign investors the availability of sea port is an important stimulating factor to invest, for round-trip investors the corresponding relationship is not statistically significant. This result is especially strong for bigger firms. Furthermore, for the subsample of bigger firms the interaction term between offshore dummy and port variable is statistically significant and its sign indicates that genuine foreign investors establish more firms in regions with sea port compared to round-trip investors.

There is also evidence that in the subsample of micro firms genuine foreign investors establish more firms in regions with higher educational potential of population, also compared to round-trip investors. Preliminary we suggest that this result indicates that genuine foreigners tend to establish financial and real estate firms in regions with more developed service sector (which might be partly reflected by higher educational potential of population).

Finally we find that market size, institutional potential and transport infrastructure are equally important for genuine foreign and round-trip investment. Most of the coefficients of these variables are highly statistically significant and point to the positive relationship with the dependent variable.

4.3. Fractional dependent variable model: determinants of the fraction of round-trip investment in total investment across Russian regions

The estimation results of equation (3) are presented in table 11.

Table 11 - Fractional logit model results: pooled unbalanced panel data over the period of 2002-2011 for firms established in the period of 1997-2001 [δ]

Dependent variable is the fraction of annual gross revenues earned by firms established by round-trip investors in total annual gross revenues of all established firms (i.e. round-trip and genuine foreign groups altogether) in a Russian region n (1,…,76) in a year t (2002,…,2011)

Variable	Whole sample	Manufacturing	Trade and repair	Financial and real estate sectors
Intercept	2.4(0.41)***	1.2(0.5)**	2.5(0.55)***	3.02(0.74)***
Resource potential	.001(0.003)	.01(0.004)	.01(0.01)**	-.01(0.01)
Corruption	-.5(0.08)***	-.75(0.13)***	-.35(0.12)***	-.84(0.21)***
Port	-.74(0.15)***	-.57(0.2)***	.63(0.26)**	-1.4(0.3)***
Market size	.05(0.04)	-.06(0.04)	.07(0.06)	.01(0.08)
Market potential	-.02(0.01)*	.001(0.02)	-.07(0.02)***	-.06(0.03)*
Investment risk	.01(0.003)*	.002(0.004)	-.01(0.01)**	-.01(0.01)**
Educational level	-.56(0.32)*	.84(0.44)*	-3.2(0.57)***	1.9(0.63)***
Institutional potential	-.004(0.004)	.003(0.01)	-.01(0.01)	-.01(0.01)
Roads	-.002(0.001)	-.001	.0001(0.001)	.001(0.001)
Time dummies	Yes	Yes	Yes	Yes
Log pseudolikelihood	-345.1	-313	-250.5	-220.6
Pearson	328.6	366	346	315.7
N. obs	628	535	484	397

*Note: 1) * if p < 0.10, ** if p < 0.05; *** if p < 0.01; 2) standard errors in parentheses.*

[δ] *Observations with zero total annual gross revenues have been excluded.*

First, we find that the share of round-trip activities is higher in corrupt Russian regions. This result is highly statistically significant in the whole sample and in the industrial subsamples. The result has been expected and in general confirms that 1) round-trip investors are better equipped to cope with corruption than their genuine foreign counterparts and 2) round-trip investment might be an important channel for corruption money laundering in Russia.

Second, we find that the share of round-trip investment is lower in regions with ports except in trade and repair sector. A similar result has been found in location model. Hence, our conclusion that round-trip investors are more oriented towards local (Russian) market than genuine foreign investors is reinforced. However, the opposite and statistically significant result for trade and repair sector indicates that round-trip investment in this sector is largely associated with export-import activities. We can also preliminary conclude that this result might reflect (at least partly) the hiding of export profits from taxes in offshore jurisdictions which is widely used by businessmen.

Third, we find that the share of round-trip investment is lower in regions with higher market potential in the neighbouring regions. This result might indicate that genuine foreign investors tend to sell their products in neighbouring regions more than their round-trip counterparts.

Fourth, the results for educational background of population are mixed. First, in manufacturing and combined financial and real estate sector the fraction of round-trip investment is higher in regions with higher educational background of population. We argue that though the result is the same for these two sectors, the explanations might be different. In particular, while in manufacturing industry it can be largely explained by the need of local qualified personnel, in combined financial and real estate sector, educational background of population might reflect a better development of the service sector in general.

In trade and repair sector we find that the share of round-trip activities is higher in regions with lower educational background of population. This result is similar to that in location model for micro firms in trade and repair sector and in general reflects more technological nature of genuine foreign investment compared to round-trip investment.

5. RESULTS` DISCUSSION AND CONCLUSIONS

This paper sheds light on a virtually unexplored phenomenon: round-trip investment from Russia to offshore financial centers and back to Russia. Our overview of statistics on Russia's outward and inward foreign investment shows that offshore financial centers, such as Cyprus and British Virgin Islands, are both key destinations of Russian outward FDI, and main sources of inward FDI to Russia. This provides support to the existence of round-tripping phenomenon of Russian capital via offshore financial centers back to Russia in the form of foreign investment. Our search for explanation for such behavior in the literature indicates that in the case of Russia, transfer of funds abroad was particularly in the 1990s rather capital flight than genuine OFDI. In contrast to some other emerging economies (such as China), the Russian government has not actively encouraged the Russian companies to go global until recently. Hence, many of the outward investment and capital flight from Russia can be better described as tax avoidance/evasion, institutional escape or corruption money laundering rather than a result of active internationalization strategy of Russian companies.

A more interesting question, however, is why the funds transferred abroad are re-invested back to Russia. Here again, the most evident explanation identified in the case of other

emerging economies, access to benefits granted to foreign investors, does not seem to be particularly valid in the case of Russia. In contrast to the Chinese government, the Russian government has not actively attracted foreign investors to the country but rather followed a restrictive policy. Here, we propose that the round-tripping of funds via offshore centers back to the Russian economy would represent the situation of institutional arbitrage (Gaur & Lu, 2007; Boisot & Meyer, 2008). The use of offshore financial centers as "home base" would provide Russian companies access to more developed infrastructure for financial operations vis-à-vis purely domestic firms. In addition, the knowledge of the Russian institutional context would put the round-trip investors to a superior position when compared to genuinely foreign investors.

In our empirical analysis we study potential differences between the investment strategies of round-trip and genuine foreign investors across Russia. Our empirical test is based on the firm-level data on foreign-owned firms in Russia obtained from Rosstat. Our main results can be summarized as follows.

First, we find quite robust evidence that round-trip investors tend to invest into more corrupt Russian regions than genuine foreign investors. This result gives support for the proposition of laundering the proceeds of corruption via round-trip investment (in particular it's high significance for the combined financial and real estate sector). It further indicates that round-trip investors may indeed be better equipped to cope with institutional deficiencies, e.g., corruption (in particular, the result`s significance in manufacturing sector).

Second, we find evidence that round-trip investors invest more into regions with higher resource potential compared to their genuine foreign counterparts. This finding indicates that round-trip investors are better able to exploit the business opportunities provided by the Russian natural resources than genuine foreign investors. This often requires allying with authorities, which is obviously easier for round-trip investors than for genuinely foreign investors. Furthermore, round-trip investors might be themselves the representatives of the authorities who already have access to resources.

Third, we find that genuine foreign investors tend to invest more into Russian regions with higher educational potential of population and with sea ports compared to round-trip investors. The former finding enables us to conclude that genuine foreign investment is more technologically advanced than round-trip investment. The latter result indicates that genuine foreign investors are more likely to use imported intermediate goods and to export final goods to the home or third countries (as sea ports can be considered as main channels for international cargo transportation) than round-trip investors. According to our study, the proposition that round-trip investors might be more oriented towards local suppliers of intermediate goods than genuine foreign investors can be considered as the main advantage of round-trip investment over genuine foreign investment for Russia`s economic development. This conclusion is especially relevant for the results for the subsample of firms established in manufacturing sector.

However, for trade and repair sector we find the opposite result for a port variable. In particular round-trip investors establish more firms in trade and repair sectorin regions with sea ports compared to genuine foreigners. We suggest that this result at least partly confirms the tax avoidance/evasion explanation of round-trip investment in Russia: the hiding of export profits from taxes in offshore jurisdictions.

Our results also enable us to suggest that round-trip investors favor the development of the Dutch disease in Russia. In particular they are very highly concentrated in the service sector, seem to aim at exploiting natural resources in Russia, tend to establish manufacturing firms in resource-based industries and support the development of corruption in Russia by investing into corrupt Russian regions. On the contrary, genuine foreign investments seem to work against the Dutch disease as they are more concentrated in manufacturing industries and regions with higher educational potential of population but are not tied to resource abundant and corrupt Russian regions.

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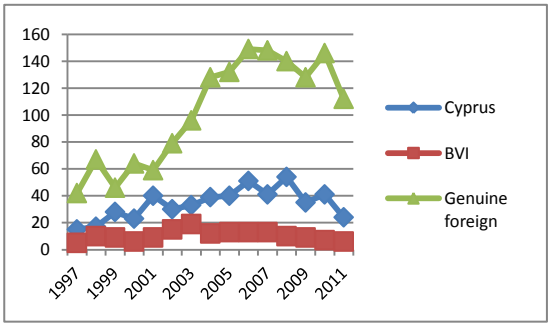
APPENDIX

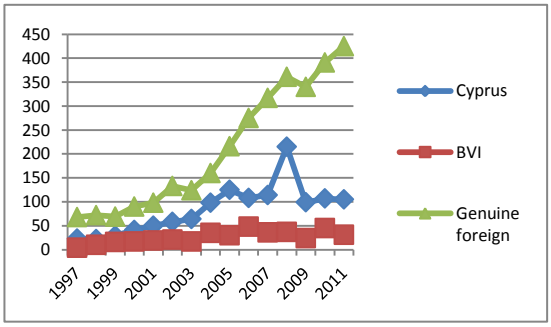
Appendix 1

Number of established firms by year of registration by sector of economy: 1997-2011

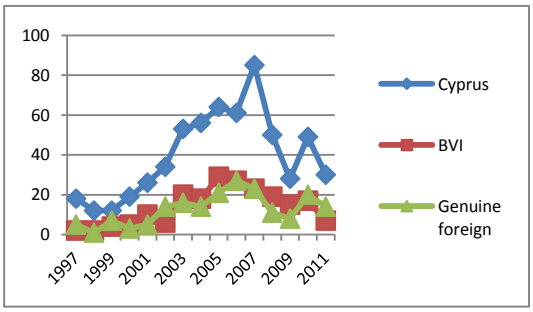
Manufacturing industries



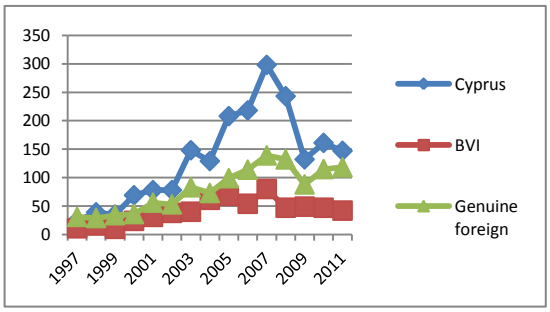
Trade and repair



Financial activities



Real estate sector



Appendix 2

Descriptive statistics and correlation matrix of the variables in the baseline location model

	Mean	Std. Dev.	Min	Max	DV	ResPot	Corr	Port	Msize	Mpot	InvRisk	EDU	InstPot	Roads
Dependent variable	6,50	29,64	0,00	484,00	1,00									
Resource potential	43,10	23,89	1,00	89,00	0,19	1,00								
Corruption	2,76	0,70	1,00	5,00	-0,10	0,09	1,00							
Port	0,21	0,41	0,00	1,00	-0,01	-0,31	-0,19	1,00						
Market size	0,01	1,49	-0,94	16,34	0,84	0,17	-0,18	0,00	1,00					
Market potential	1,66	4,59	-6,96	23,15	-0,13	0,33	0,17	-0,21	-0,20	1,00				
Investment risk	40,37	23,74	1,00	88,00	-0,19	-0,29	-0,15	0,12	-0,25	-0,10	1,00			
Educational level	0,57	0,22	-0,21	1,31	0,33	-0,12	0,08	0,33	0,40	-0,14	-0,17	1,00		
Institutional potential	39,57	22,70	1,00	82,00	-0,27	0,17	0,05	-0,13	-0,48	0,14	0,40	-0,33	1,00	
Roads	142,60	103,19	1,41	606,50	0,44	0,54	-0,05	-0,20	0,44	0,20	-0,47	0,05	-0,26	1,00

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