DETERMINANTS AND EFFECTS OF INFORMAL INSTITUTIONS IN THE CONTEXT OF TRANSITION

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DECLARATION

I, Paulina Stepien, confirm that the work presented in this thesis was my own. Where information has been derived from other sources, I confirm that this is indicated in the thesis.

The data and some ideas from Chapter 4 are being used in a co-authored paper with Dr Julia Korosteleva and Prof Tomasz Mickiewicz.

ABSTRACT

In this thesis, I present three quantitative empirical studies of informal institutions. The focus of particular chapters varies from determinants of informal institutions to their effects on economic behaviour. The emphasis here (with exception of chapter 2) is mainly on transition economies as defined by European Bank of Reconstruction and Development.

Chapter 2 presents a multilevel study of determinants of generalised trust. Despite a wide spread acceptance that trust positively impacts various economic outcomes, only few studies attempted to understand the determinants of trust. They have also largely ignored the role of social context. The chapter proposes that trusting behaviour is embedded in the social context. More specifically I argue that the social context is reflected by religious affiliation and habitat size. The results provide support for my arguments.

Chapter 3 investigates how weak and strong tie social capital affect occupational choice, defined as selection into wage employment, self-employment and ownership of a business employing others. This study is novel in showing that transition countries have moved on from the 'transition inflicted' model of interactions in the labour markets where personal connections were necessary to succeed. It suggests that social capital is in a process of transition itself as the transition countries move towards modern complex societies where social capital is supported by the economic system, not vice versa.

Finally, chapter 4 seeks to understand the determinants of the incidence of corruption at individual level. This paper takes a new approach and considers the effects of the local environment on individual propensity to engage in corruption of officials and courts. The local level formal and informal determinants are reflected by the city size and access to technology. The results suggest that access to technology has powerful corruption reducing effect. Further, corruption appears to be particularly concentrated in large cities although capital cities show the opposite effect.

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To my family

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CHAPTER 1. INFORMAL INSTITUTIONS AND TRANSITION ECONOMIES

This is an interdisciplinary thesis that draws on institutional economics, sociology and area studies. Determinants and effects of informal institutions, understood as informal norms and rules that guide human behaviour, in the context of transition are the main focus of this work. The motivation behind studying informal institutions is that they are deeply embedded and affect all aspects of life, facilitating and guiding human interactions. Informal institutions are the earliest form of institutions. Due to the fact that they are difficult to operationalise and measure precisely, they are relatively under-researched. Further, informal institutions have played an important role in transition economies. With the fall of communism and the onset of transition, countries have been experiencing an unprecedented economic, political and social transformation. The present study aims to investigate the role of informal institutions in the new post-communist reality.

This chapter will introduce the conceptual framework for this thesis and discuss the concept and the process of transition. I will also review institutions in general, and formal and informal institutions in great depth. Within the informal institutions, social capital and corruption, the topics relevant to the empirical chapters, will be discussed in greater detail. Finally, I will provide a summary of the empirical chapters and discuss their relationship with the main framework of this thesis.

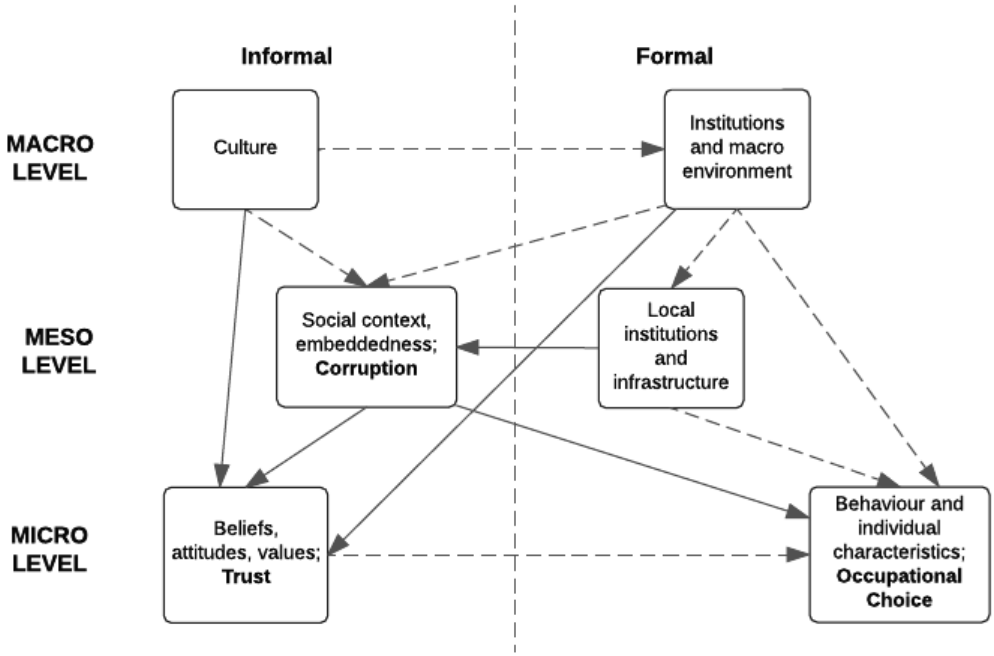
1.1 Conceptual Framework

This section will introduce and discuss a conceptual framework of informal institutions that will guide the present work. It illustrates the levels of analysis as well as factors that will be considered in particular chapters. This framework is not a definitive and complete concept which attempts to reflect all variables and forces that affect informal institutions and are affected by them. Rather, it attempts to portray the variables this thesis analyses, showing how they affect each other and where they are placed in a 'wider analytical space'.

The framework, presented graphically in Figure 1, is inspired by the work of Jepperson and Meyer (2011) who extend the famous Boudon-Coleman "boat" diagram. The original diagram assumes methodological individualism — an assumption that behaviours of individuals are key building blocks for social change. Jepperson and Meyer (2011) argue that 'if one insists upon individualist formulations, whole sets of social processes will not be considered for possible hypotheses' (p. 60).

Consequently, they propose three levels of analysis or 'causal processes': individual level, social-organisational and institutional. The framework has been further adapted to the study of informal institutions to reflect the phenomena discussed through the thesis and the data structure. Such adaptation of the Boudon-Coleman "boat" diagram is not uncommon, other studies also extend it to three levels to capture the effects of the 'community' in empirical research (Taylor 2010).

Figure 1. Conceptual framework of the thesis



Consistent with this, the framework presented in Figure 1 horizontally distinguishes micro, meso and macro levels of analysis. Although Jepperson and Meyer (2011) do not recommend using macro-meso-micro terminology for the fear of conflating complexity with scale, this work adopts this terminology with the full understanding of the social and spatial complexity which each level represents. Macro, meso and micro terminology also better reflect the design of the data used in this thesis. Vertically, the framework is divided along the lines of formal and informal institutions. However, it must be acknowledged that the boundaries between the horizontal and vertical levels 'necessarily blur' (ibid. p.62). For instance, it may be difficult to disentangle the self and contextual components between beliefs, attitudes and values on the individual level and social context on the meso-level. Also, along the formal-informal line, education is an individual level outcome; however, it may also reflect institutional structures – the perception of one's own skills and confidence (Scott 1995; Korosteleva & Belitski forthcoming).

The broad macro level informal institution presented in the framework is culture. Although culture can be considered at many levels, it is firmly established as the national level informal institution in the literature (Stephan & Uhlaner 2010). Culture is understood here as a repetition of common behaviours and practiced codes of conduct that structure interactions within societies (North 1990; Stephan & Uhlaner 2010). It provides a repertoire of actions from which various strategies can be constructed (Swidler 1986). Therefore, the culture limits the range of options an individual has but does not dictate any particular action. The indicators that reflect the macro level institutions are usually captured at the country level in the data.

The meso level captures relatively more local social context and embeddedness. Jepperson and Meyer (2011) refer to this level as social-organisational processes and they specifically mention that this is where Granovetter's (1973) theory of weak and strong network ties fits in. Also, the meso level captures another extension of the social network theory - Granovetter's (1985) concept of social embeddedness, reflecting the extent to which individual actions are embedded in social structures (p.491). Meso level factors are difficult to operationalise; however, I believe that certain features that can be observed at the individual level reflect embeddedness and social ties.

Individual beliefs, attitudes and values represent the micro level of informal institutions. They are often explicitly named as building blocks of informal institutions (Pejovich 1999; Raiser 2001; Tonoyan & Strohmeyer 2010). They are influenced by meso and macro level institutions and guide individual behaviour.

On the formal side of the framework, I consider input and outcome measures of institutions (Glaeser et al. 2004). Institutions are difficult to precisely capture, yet certain outcomes that can be observed can inform us about institutional quality. At the macro level, there are formal institutions and a macro-economic environment. Formal institutions at the national level represent codified rules of behaviour that are enforced by authorities (North 1990). The macro-economic environment represents observable economic trends such as GDP per capita, GDP growth and inflation. Changes in policies and regulations often are affected by the economic climate.

Meso-level formal institutions are represented here by local institutions and infrastructure. In this framework, meso level represents the neighbourhood level and is operationalised by aggregating individual level values to the neighbourhood level. For instance, meso level technological access is reflected by a neighbourhood average of individual access to technology. Finally, at the individual level, observable individual behaviour and characteristics are considered. These are not strictly institutional measures but they do represent individual outcomes which are affected by the

institutions. Also, individual characteristics affect the choices through their physical, mental and social constraints.

1.2 Transition Economies

Transition economies are a 'block' of 30 countries stretching from Central Europe to Asia. They occupy approximately 20 per cent of the world's land mass (World Atlas 2014), are home to 5.5 per cent of world's population (UNPD 2014) and produce 5.3 per cent of the total GDP (World Bank 2014).

They represent a curious case of countries where communism was introduced and where, over 25 years ago, it was dismantled. Although the transition process is far from complete, some countries are emerging more successful while others are in states worse than before. All countries adopted a range of institutional reforms to bring their political and economic conditions towards democracy and the free market. The subsequent depth of the reforms varies dramatically across countries depending on political will and economic outcomes. This has resulted in very divergent development paths across the region. Today, 8 out of the 30 (27 per cent) countries are classified as lower middle income countries according to the World Bank (2015), 13 (43 per cent) as upper middle income countries and 9 (30 per cent) as high income countries. Although not perfect, the World Bank classification gives a good picture of how successful the transition has been across the region. Given that all countries aimed at attaining high income status, 25 years later only 9 achieved such goal and 8 have not made much progress at all.

The reasons behind success in the transition or its lack have been studied by, among others, Svejnar (2002) who argues that most of the countries successfully implemented Type I reforms such as price liberalisation, macroeconomic stabilisation and dismantling of communist institutions, however, the successful countries managed to also effectively implement Type II reforms. These included law enforcement, privatisation and labour market regulation. Therefore, 'on paper' most countries transformed but when it came to actually enforcing and implementing the transition, many failed. This failure is explained by Winiecki (2001, 2004) and Raiser (2001). Both authors argue that it was the informal institutions that determined the fate of transition. Winiecki (2001, 2004) claims that formal and informal institutions reinforce each other and, while formal institutions may be changed overnight, the success of these changes depends on whether informal institutions support those changes. In other words, the bigger the gap between the old and new rules, the more difficult the transition.

Similarly, Raiser (2001) argues that transition, defined as institutional change, is conditioned by inherited informal institutions that determine expectations of the citizens and shape execution of new rules. Further, both authors agree that it was the development of the private sector in the early years of transition that decided the fate of transforming countries. These were largely dependent on the credibility of new rules and effectiveness of their enforcement, which in turn were constrained by informal institutions.

Therefore, there is no doubt that informal institutions played a key role in the transition. However, this thesis does not look at informal institutions' effect on the success of transition, but rather focuses on informal institutions today and their effect on human behaviour in the context of transition. This work also pays special attention to entrepreneurship which, as mentioned above, has been affected by informal institutions, yet, is vital for prosperity and growth. Another motivation of this thesis is a call to look into all transition countries including former Soviet Union members, on which research is scarce.

1.3 Institutions

This thesis adopts North's (1990) general definition of institutions. Accordingly, institutions can be defined as constraints created by humans that shape their interactions. They are 'the rules of the game in a society' (p.3). Institutions provide structure, reduce uncertainty and affect the functioning of political and economic systems. Institutions can be formal codified rules of behaviour that are enforced by authorities, or informal such as norms and traditions sanctioned and enforced by individuals and communities. 'Ingrained habits' formed and shaped in response to current and former political rules are also thought to constitute informal institutions (Winiecki 2004). These are particularly important in the context of transition.

The interest in institutions was revived with the rise of New Institutional Economics (NIE) in the 1980s (Coase 1984; Williamson 1985; North 1986). The main idea of NIE was that transaction costs affect the institutional structure and the economic choices people make (Furubotn & Richter 2005). Subsequently, the interest in the institutions spreads to other disciplines including anthropology, sociology and political science (Coase 1998). Williamson (2000) significantly contributes to the field with his hierarchy of institutions framework that classifies institutions according to the speed with which they change. Consequently, he argues that the slowest changing and the most deeply embedded are the informal institutions. They affect the formal institutions which have been divided according to the speed of their change into the institutional environment, governance and resource

allocation. While Williamson (2000) was concerned with the time dimension of formal and informal institutions, this thesis focuses specifically on informal institutions and their antecedents and effects.

1.3.1 Formal Institutions

Formal institutions can be defined as governmental regulations including political and economic rules and contracts (North 1990). Pejovich (1999) explains that formal rules 'determine the political system (i.e., the governance structure and individual rights), the economic system (i.e., property rights and contracts), and the enforcement system (i.e., the judiciary and the police)' (p. 7). The authorities can enforce formal regulations by imposing sanctions such as fines and imprisonment.

Although formal institutions are not the main focus of this thesis, they cannot be ignored when discussing institutions in general. Formal institutions are considered throughout this thesis, as an analysis of many phenomena would be incomplete without taking into account the formal institutional environment. Also, it must be acknowledged that formal institutions alone exert an important influence on economic, social and political outcomes. Some of those effects will be reviewed below, especially with relation to economic outcomes.

The question of the effect of formal institutions on economic outcomes has been hotly debated in the literature (Glaeser et al. 2004). It was sparked by the rise of New Institutional Economics and the emergence of better data capable of assessing institutional quality such as Freedom House indices, Polity II, Polity IV and World Bank indicators. The investigation of the effects of formal institutions is further complicated by the fact that institutions are correlated with the level of development as highly developed countries tend to have a high quality of institutions and vice versa.

It has been argued that property rights institutions are a particularly important measure of formal institutions. Other influential measures considered in the literature include constraints on the executive branch of the government, government spending, business regulation and the political system in place. However, as formal institutions can often be measured only arbitrarily, the research attempts to come up with various instruments to proxy for the institutional environment. Some research found that macro-economic outcomes are indeed affected by such measures (Rodrik 2000; De Haan et al. 2006), others argued that human and physical capital accumulation lead to growth and development which then leads to better institutions (Glaeser et al. 2004; Przeworski 2004b; Przeworski 2004a). According to the latter, the institutions and growth subsequently reinforce each other; good institutions maintain and enhance growth and development.

Institutions may also affect growth and development through various channels including productivity and investment (Dawson 1998). Another such channel may be support of entrepreneurship. The literature suggests that a strong rule of law is important for private sector development (McMillan & Woodruff 2002; Harper 2003; Djankov & Qian 2006). Aidis et al. (2010) also show that property right protection and access to finance affects entrepreneurship and that the effect is stronger in opportunity driven entrepreneurship. Further, strong property rights combined with smaller governments have been shown to positively affect growth aspiring entrepreneurs (Estrin et al. 2012).

Formal and informal institutions necessarily interact with each other. They coexist and continuously reinforce each other. In particular, formal institutions need informal backing if they are to be effective. This is because not every detail and possibility can be codified and it would be inefficient to do so (North 1990). Instead, a relatively general formal framework guides popular behaviour with informal rules and norms 'filling in the gaps'. This is because, as evident from Williamson's (2000) framework, informal institutions which are deeper and more embedded are often a source of formal institutions. Further, Winiecki (2001, 2004) points out that formal institutions can be changed overnight while the informal ones are more stable and their evolution takes time. If the formal institutions change suddenly and differ significantly from the old rules and underlying norms and attitudes, there is likely to be a conflict that may lead to resentment and competition between formal and informal rules.

1.3.2 Informal Institutions

Informal institutions are of interest in many disciplines, including economics, sociology and anthropology. Each of those have their own theories and schools of thought and therefore a single all-encompassing definition does not exist (Parlevliet, 2007). Informal institutions include traditions, customs, societal norms, "shared mental models," unwritten codes of conduct, ideologies, taboos, and templates (Baumol 1996; North 1990; Helmke & Levitsky 2004; Jütting & de Soysa 2007; Tonoyan & Strohmeyer 2010). They represent a community's 'prevailing perceptions about the world, the accumulated wisdom of the past, and a current set of values' (Pejovich 1999, p.166). They are usually not 'consciously designed' but may be 'in everyone's interest to keep' (Sugden 1986, p.54). They are often used to label a variety of phenomena including mafia, corruption, traditions etc. (Helmke & Levitsky 2004).

They are passed from generation to generation through a variety of mechanisms such as 'imitation, oral tradition and teaching' (Pejovich 1999, p.166). Informal institutions are commonly enforced outside of formal channels (Helmke & Levitsky 2004). They are usually self-enforced by the community and individuals by means of obligation, expectations, internalised norm adherence, gossip, shunning, shaming and threats (Jütting & de Soysa 2007). Furthermore, violators of informal rules may face exclusion from the community, ostracism and loss of reputation (Pejovich 1999).

Two approaches have been proposed in the literature to understand the origin of informal institutions: the calculus approach and the cultural approach (Hall & Taylor 1996; Jütting & de Soysa 2007). The calculus approach emphasizes strategic calculation seeking to 'maximize the attainment of a set of goals given by a specific preference function' (Hall & Taylor 1996, p.7). In contrast, the cultural approach takes a less strategic view by emphasizing that individuals often turn to 'established routines or familiar patterns of behaviour' (ibid., p.7). The cultural approach corresponds more to the interpretation of informal institutions taken throughout this thesis.

Further, Helmke and Levitsky (2004) provide reasons for the emergence of informal institutions. Firstly, the formal institutions provide insufficient guidance on behaviour in particular situations or do not cover some aspects of economic or social activity. For instance, there was hardly any legislation covering business activity in transition economies at the start of the transition. Yet, the private sector sprung up very fast. Given the size of the task and the lack of experienced legislators, the legislative speed and breath was likely to insufficiently cover all possible aspects and problems entrepreneurs may face.

Secondly, they may be the 'second best' solution for actors operating under stiff, inflexible formal rules that are ineffective or which obstruct economic and social activity. This was the case in former Soviet Union countries where actors relied on their networks to obtain daily living essentials and accomplish goals of the wider economic plan. Thirdly, informal institutions are created to achieve goals that may be illegal or not publicly acceptable such as vote-buying or soft drug use. Finally, they may be created to pursue goals which are undemocratic and morally questionable, for instance, autocratic leaders creating informal mechanisms to gain and centralise power.

As outlined by Williamson (2000), formal institutions change very slowly and the process may involve 'changing power relations and overcoming path dependency' (Jütting & de Soysa 2007, p.39). Also, informal institutions do evolve over time in response to external events and developments in the wider world. This is particularly relevant in the globalised world where people have access to information and other cultures through television, radio and the internet.

International travel, education and trade provide further opportunities for encountering and experiencing other ways of thinking and doing things.

Moreover, governments can take an active role in changing underlying norms and traditions (Jütting & de Soysa 2007). The governments can outlaw undesirable behaviours or promote desirable ones by providing incentives. However, the effectiveness of detection and punishment play an important role in the success of this strategy. Also, the legitimacy and popularity of the government would affect the success of these approaches. Further, Jütting and de Soysa (2007) stress that civil society groups and key personalities such as celebrities and religious leaders may play a vital role in changing informal practices.

1.3.2.1 Social Capital

Social capital is a vital form of informal institutions. It has become a crucial concept in a wide range of social science disciplines. It has been widely applied in the studies of economics, health, education, civil society and almost any topic in the social sciences. The origins of the concept go back to the three forefathers – Bourdieu (1983, 1986), Coleman (1988) and Putnam et. al. (1994) (Putnam 1995), who popularised and expanded its applications. Initially, the term was applied in studies of cohesion of communities and neighbourhoods and viewed as a basis for development of cooperative trusting relations and collective action (Jacobs 1961). However, in the late 1970s, it was also acknowledged to affect economic outcomes (O'Connor, 1979).

The concept was further developed by Coleman (1988) and Putnam et. al. (1994) who focused on social capital as internal ties or structures to which individuals belong. Putnam's influential works and his methodologically rigorous interpretation popularised social capital in empirical research (Falk & Kilpatrick 2000). So far there has been no single definition of social capital. It has been argued that the definitions vary with respect to the focus on substance, and the sources or the effects of social capital (Adler & Kwon 2002). Bourdieu (1986) provides a definition of social capital that captures the concepts under investigation in this thesis particularly well. He argues that social capital is "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition" (p.248).

Further, the varying focus of investigations has led to the development of two forms of social capital: 'bridging' (inclusive), and 'bonding' (exclusive), attributed to Gittell & Vidal (1998). Granovetter (1973, 1983) describes these as strong and weak ties. Strong ties (bonding social capital) are a domain of homogenous populations benefiting only those within the structure (Leonard 2004).

Leonard (2004) further notes that they may be beneficial to particular groups such as ethnic groups that create niche economies, however, it prevents the 'entrepreneurial members from reaching [their] full potential' (p.929). On the other hand, weak ties (bridging social capital) are considered to be more inclusive and are essential for 'getting ahead' (Briggs 1998 in Putnam 2001).

Social capital is typically measured by density of voluntary associations that display the networks and measures of trust that reflect shared social norms. More specifically, at the individual level, weak ties are usually measured by degree of generalised trust as well as membership in voluntary associations such as sports or hobby clubs. Strong ties are more difficult to capture because they usually reflect ties to close friends and family.

Therefore, the topics investigated in Chapter 2 and 3 of this thesis are directly linked to social capital. In fact, the variables used in these chapters, generalised trust (in Chapter 2) and weak and strong tie social capital (in Chapter 3), are the most commonly used measures of social capital in the literature. Also, it is worth noting the relationship between the two variables. Essentially, in the literature, generalised trust has been used as one of the measures of weak tie social capital. With respect to the conceptual framework presented in Section 1.1, measures of strong and weak ties including generalised trust represents the informal institutions at meso level as they provide information about an individual's social context and networks. This is despite the fact that they are most commonly measured at an individual level.

1.3.2.2 Corruption

Corruption has garnered much attention in policy making (Aidt 2003) with research across all social science disciplines attempting to understand the phenomenon. This is a phenomenon that is damaging yet very persistent. Corruption has been consistently shown in the empirical literature to negatively affect the economy, society and businesses. It has been shown to lower economic growth through reduced investment, political instability and inefficiency. For example, Mauro (1995, 1998), as well as Tanzi and Davoodi (1998), found that corruption reduces overall investment and productivity of public investment. Mo (2001) found that a 1 per cent increase in the corruption level reduces the growth rate by 0.72 per cent. He highlighted that the most important channel which affects growth is political instability. It has also been shown that corruption decreases tax revenues (Tanzi & Davoodi 1998) and decreases investment in education and healthcare (Mauro 1998).

Further, corruption distorts markets and the allocation of resources, raising the costs of doing business, and acting as an extra tax on business activity (Sjaifudian 1997; Frye & Shleifer 1996;

Kaufmann 1997). It also reduces foreign direct investment (FDI) (Wei 2000; Habib & Zurawicki 2002). Baumol (1996) and Murphy et al. (1991) argue that, if the business environment is not supportive, entrepreneurial individuals may allocate their talent to unproductive or even destructive activities.

Social consequences of corruption include higher poverty and inequality levels (Tanzi 1998; Gupta et al. 2002). It may further perpetuate the poverty trap by reducing access to education and healthcare. Gupta et al (2002) found evidence that an increase of one standard deviation in corruption increases the Gini coefficient of income inequality by 11 points and decreases the income growth of the poor by 5 percentage points.

The evidence shows the overwhelmingly negative effects of corruption on almost all aspects of life. Even if corruption benefits the individuals engaged in it, it simultaneously negatively affects them by destroying the economy and society in the neighbourhood and the country they live in. Although in the short run corruption may have beneficial or neutral effects, it will inevitably lead to major problems as outlined above.

To understand the causes of corruption, many researchers have focused on deficiencies of formal institutions and governance. Some have looked deeper at establishing links with history and informal institutions, including culture, that affect development and functioning of institutions. Few claim that corruption itself may be viewed as an informal institution, a deeply rooted and accepted norm of behaviour that goes beyond and is at the root of observed governance failures. Darden (2008) argues that corruption is a much more complex phenomenon then just the effect of poor governance.

Jepperson (1991) contends that corruption is a socially embedded phenomenon; it becomes institutionalised without gaining legitimacy, with individuals and businesses developing consistent expectations about it. Hyden (2005) claims that corruption becomes an informal institution when corrupt 'behaviour is regularised and more than [a] few individuals practise it' (p. 7). He further notes that once corruption becomes a norm, individuals engaging in it respond to an unwritten but rational rule. Bratton (2007) supports Hyden's view stating that corruption, clientelism and the 'Big Man' rule are 'so ingrained in African political life as to constitute veritable political institutions' (p. 98).

This thesis supports the view, as mentioned above, that corruption is an informal institution. However, to fully understand why such a view is justified, one must consider the history and culture of the countries being studied. Helmke and Levitsky (2004) contend that 'informal institutional creation may be a historically contingent process in which informal structures are an unintended

product of particular conflicts and compromises'. It can be argued that transition economies of Central and Eastern Europe and the Former Soviet Union inherited a tradition of rule bending and corruption (Pichler & Wallace 2007). Further, Sandholtz and Taagepera (2005) argue that 'communism created structural incentives for engaging in corrupt behaviours, which became such a widespread fact of life that they became rooted in the culture in these societies – that is, the social norms and practices prevailing in communist societies' (p. 109).

Ledeneva (1998), an expert on corruption in Russia, maintains that exchange of favours was a way of distributing resources. She also emphasizes the tradition of 'blat' defined as 'the use of personal networks and informal contacts to obtain goods and services in short supply and to skirt formal procedures' (Ledeneva 1998, p. 1). Ledeneva (2008) further explains that 'in conditions of shortages and a state system of privileges, blat practices serve the needs of personal consumption and reorganize the official distribution of material welfare through an informal exchange of "favours of access" to state resources' (p. 120). However, the tradition of blat is thought to perpetuate the practise of informal exchanges in Russia (Lovell et al. 2000). Moreover, the power of social obligations is so strong that people are prepared to break social rules in order to fulfil them at the expense of the wider community.

Puffer et al. (2010) further stress that blat is rooted in the culture and history. It has been seen as necessary, reasonable and even ethical by businessmen who resort to it in order to be able to run a business. Moreover, while bribery is illegal, blat is not even mentioned in the Russian criminal code (Lovell et al. 2000, p. 6, 7). Despite the fact that blat is prevalent, there is ample evidence of petty corruption in many transition economies. The embeddedness of the former creates an informal environment in which petty corruption may flourish as people expect something in return for helping others, whether this is money, gifts or a future favours. The boundary between the two may often be unclear, especially if one considers informal gifts as a form of bribery.

Although there exists relatively sizeable evidence on the determinants of corruption on the country level, there is much less research on the effects of the local environment (at the neighbourhood level) and on the individual engagement in corruption. Ultimately, it is an individual who makes a conscious decision to engage in corruption; therefore, understanding their characteristics, motives and aspects of the environment that make such behaviour more likely is of paramount importance. Chapter 4 will investigate determinants in the incidence of corruption across transition countries. More specifically, it will consider the spatial distribution of corruption as well as the effects of access to technology at the local level.

1.4 Chapter Summaries

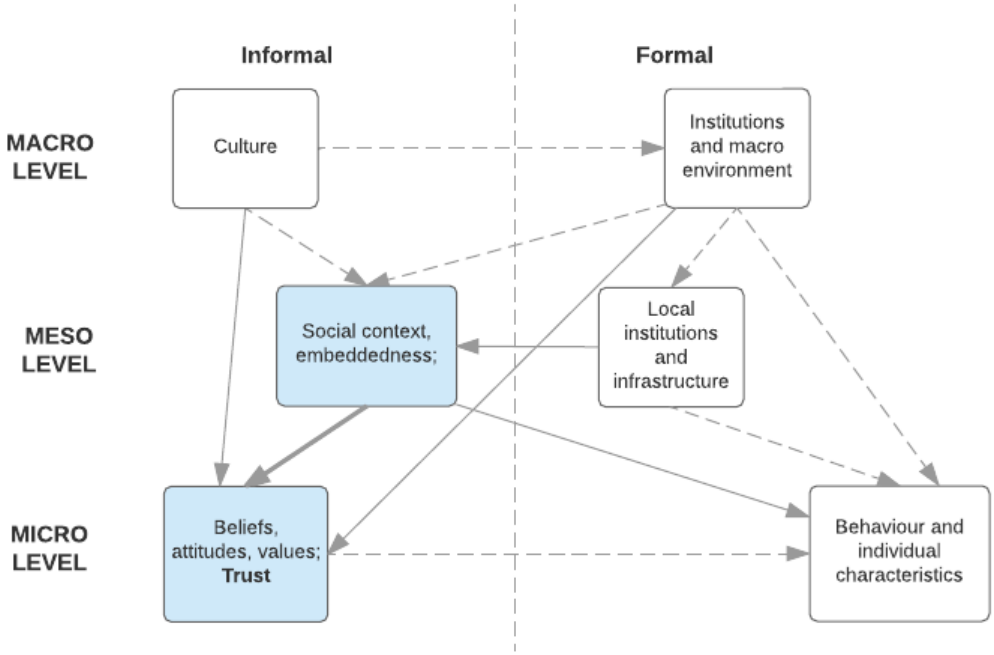
Chapter 2. **Determinants of Trust: A Social Embeddedness Perspective.**

Generalised trust, understood as the willingness to assume that other people are trustworthy, is a key ingredient of weak tie social capital. It facilitates transactions and social interactions and reflects shared social norms. In environments where formal institutions are dysfunctional, trust also acts as a substitute for institutional weaknesses. In many emerging economies, trust-based relations are the basis of functioning markets. Despite a widespread understanding and a number of empirical studies showing positive impact of trust on economic and individual outcomes, few studies attempted to understand the determinants of trust. Moreover, these few investigations have been limited to the effects of institutional and individual factors, ignoring the role of social context.

Following a premise that institutions are social structures (Granovetter 1985; North 1990), this chapter proposes that trusting behaviour is embedded in the social context. As argued by Granovetter (1985), individuals are not isolated entities nor are they slavishly dependent on the environment they live in. However, they are influenced by certain norms of behaviour and beliefs such as ones resulting from religious affiliation or habitat size. Immediate environment reflected by habitat size as well as systems of behaviour and practices imposed by religious affiliation precondition the way people perceive others and respond to them.

With respect to the conceptual framework presented earlier, this chapter investigates determinants of micro-level informal institution - trust (see Figure 2). The determinants of interest are meso-level informal institutions representing social context. Other determinants considered are formal and informal factors at macro and micro levels.

Figure 2. Chapter 2 in relation to the conceptual framework



Determinants of trust at three levels, macro (institutional), meso (social context) and micro (individual), are analysed using a multilevel modelling technique on individual level data from 64,317 individuals across 60 country-year groups collected between 1984 and 2009 through the World Values Survey (WVS). I find that determinants at all levels significantly affect trust. Within the social context, I confirm that more hierarchical religions discourage trust; however, unlike previous literature, I find that Islam has positive effect. Moreover, inhabitants of small cities are most trusting while the effects of large cities are negative but vary across countries.

This paper adds to the trust literature by, firstly, offering an integrated framework of the determinants of trust. Secondly, I show that trusting behaviour is embedded in the social context. Thirdly, I use the social embeddedness perspective in the context of a multilevel framework.

Chapter 3. **The Effects of Weak Tie and Strong Tie Social Capital on Occupational Choice.**

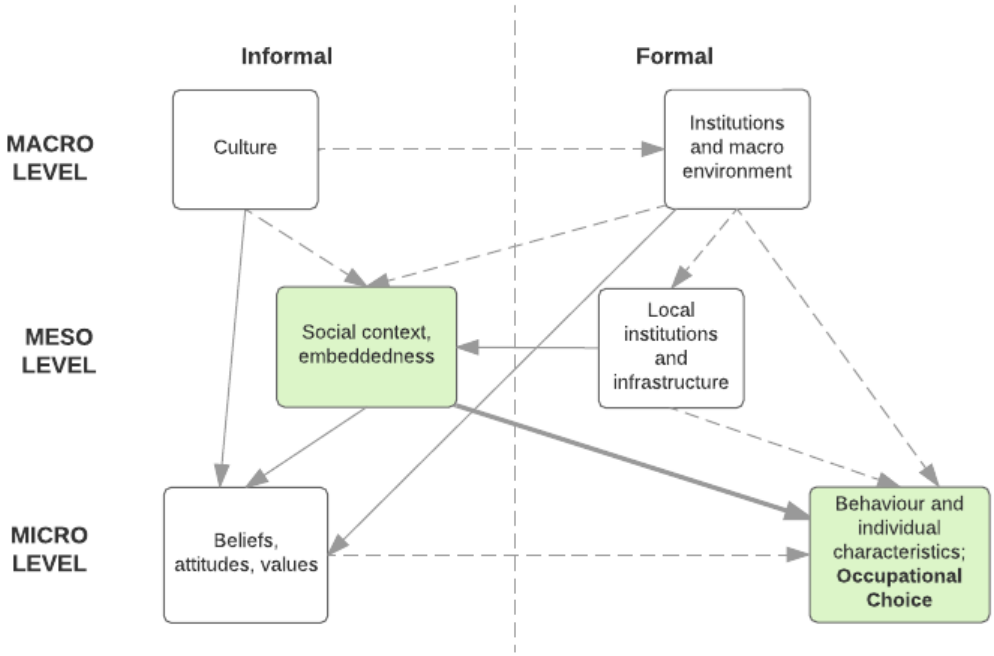
Under the communist regime, occupational choice meant that one was employed for wages in a state owned enterprise. Unemployment was strongly discouraged and self-employment or business ownership were not an option as it meant operating outside the law. However, there was plenty of informal activity in the grey economy where the more entrepreneurial citizens found a way to fill the gaps in the market by offering scarce products and services. Social networks played an important role both under communism and during the transition. They allowed people access to scarce goods

and services and allowed them to survive in the environment of permanent scarcity. The transition brought macroeconomic rebalancing resulting in high unemployment levels in many countries. Often, people had to use their networks to find out about job openings and secure positions.

This chapter investigates how resources, in particular strong and weak tie social capital, affect selection into different occupational categories: wage employment, self-employment without employees and self-employment with employees as compared to being unemployed. Given the importance of social ties under communism and during early transition, it is important to understand what role they play today and how they changed. Also, it is equally important to see how the social ties affect occupational selection and, in particular, selection into entrepreneurship as they have been shown to be particularly important for development and growth. I add to the literature on occupational choice and transition economies by analysing the effect that social network resources have on individual choices of employment type. Also, I identify the different effects that those resources may have on each of the occupational categories.

With respect to the conceptual framework presented above, this chapter investigates the effect that meso-level informal institutions – strong and weak tie social capital, have on individual behavioural outcomes as exhibited by choice of occupation. In other words, I analyse the effects of informal institutions on individual choices.

Figure 3. Chapter 3 in relation to the conceptual framework



The empirical analysis utilises the Life in Transition Survey conducted by the European Bank for Reconstruction and Development jointly with the World Bank. I rely on the 2010 wave which was conducted in 30 transition economies. Multilevel Heckman selection modelling has been employed to analyse the data. The findings suggest that social capital does not seem to have much effect on occupational choice, particularly selection into self-employment with or without employees. Technology has a positive and persistently strong effect across all occupational categories. Further, I find that the self-employed category seems to be significantly different from all other employment categories.

Chapter 4. Cities, Technology and the Incidence of Corruption

Corruption is a plague that affects most developing economies but also occurs in developed countries in more sophisticated forms. However, in the emerging world there is likely to be a lot more low-level petty corruption affecting ordinary citizens in their daily lives. During communism, corruption and blat were widespread in Eastern Europe and Soviet bloc countries. The legacy of the communist regime, including extensive use of private networks, scarcity of goods and services, lack of transparency and limited private property, contributed to the extent of corruption that existed before and after the fall of the regime. Many transition countries still see high levels of petty corruption.

Despite keen interest of researchers from many disciplines, we do not know enough about corruption to have been able to decrease it substantially. There exist relatively few large-scale recent studies of incidence of corruption. In addition, studies of the transition countries focus largely on corruption in Russia and Central and Eastern Europe. Finally, the existing studies explore mainly country-level formal institutions and individual characteristics and experiences ignoring the meso level institutional context.

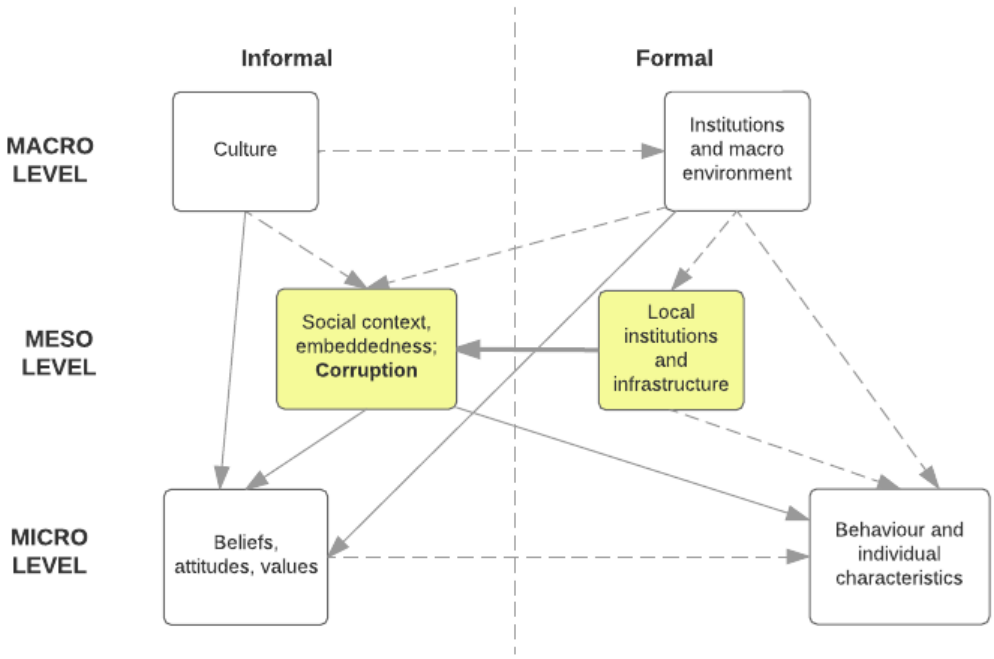
This paper takes a new approach and considers the determinants of corruption at a local level. Firstly, it examines the effect of local institutional environment and social context. More specifically, I argue that those who live in large cities are more likely to engage in corrupt activities due to a larger concentration of economic activity and a higher number of officials. Accountability mechanisms may differ in large and small cities with detection being more likely within smaller community where people know each other well.

Secondly, seeing the importance and rapid expansion of technology across the world it is vital to gain a better understanding of its usefulness as a corruption fighting tool. Therefore, the second aspect

investigated in this paper is the effect of the access to technology at an individual and local level on individual propensity to engage in corruption. Technology is an important resource that grants access to information and guidance, and is also a platform to exchange opinions, providing opportunities to name and shame. It also creates opportunities to decrease face to face contact between officials and the public and may decrease the arbitrary power of officials.

With respect to the conceptual framework presented in section 1.1, this chapter looks at the determinants of informal institutions. Both the determinants and the informal institutions represent the meso level in the framework. Technological access represents the local infrastructure - the formal side of the framework. However, the city size captures formal and informal effects. Firstly, it captures the social context that is created by the intensity of interactions within small, medium or large cities. Secondly, it captures the effects of formal local institutions that may exist in cities of different sizes.

Figure 4. Chapter 4 in relation to the conceptual framework



The second wave of the Life in Transition Survey has been used in this chapter. As in chapter 3, I employed the multilevel Heckman selection model to account for the hierarchical nature of the data and the sampling methodology. The findings confirm that access to technology has a very strong negative effect on corruption. Moreover, I find that individuals living in larger cities are more corrupt than inhabitants of small cities; however, respondents living in capital cities seem to be less likely to

engage in petty corruption than those living in small cities. This may be because capital cities create special environments where the businesses and officials can establish networks and rely on these.

This study adds to the literature by analysing the effects of various social and institutional contexts created within cities of different size. Also, the results confirm the powerful effect that technology may have on reducing petty corruption. Further, I analyse the incidence of corruption at an individual level rather than the perception as in most studies to date.

1.5 Looking Ahead

Informal institutions are ubiquitous at all levels; individual, family, community, society. Their definition and components are plentiful. However, their importance cannot be understated as they implicitly guide human behaviour. Each chapter explores different aspects of informal institutions, the contexts in which they exist and the effects they have. Different 'components' or manifestations of informal institutions are re-examined here and key elements of empirical and theoretical literature are discussed. I also conduct my own empirical analysis using data that, to my knowledge, best captures the phenomena under investigation. Contributions of each chapter to the socio-economic field and body of research are outlined in each chapter and finally reviewed in the concluding chapter.

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CHAPTER 2. DETERMINANTS OF TRUST: A SOCIAL EMBEDDEDNESS PERSPECTIVE.

(Manuscript completed March 2012)

This chapter seeks to understand determinants of generalised trust. With respect to the theoretical framework presented in Chapter 1, this study considers informal institutions on both sides of the equation. I consider generalised trust as an attitude or belief representing the micro level in the framework. The determinants of trust represent social context – the meso level of the framework. More specifically, I argue that social context is represented by the size of the habitat and religious affiliation.

2.1 Introduction

Trust, understood as individual belief that other people can be trusted, has been used in many studies as a measure of social capital (Putnam et al. 1994; Putnam 1995; Knack & Keefer 1995; Uslaner 1999; Rothstein & Uslaner 2005) to explain a wide range of outcomes. Recent empirical studies found that generalised trust, used as a proxy for social capital in general or weak tie social capital, has a positive effect on economic development and growth (Putnam et al. 1993; Knack & Keefer 1995; Zak & Knack 2001; Knack 2002; Beugelsdijk 2004; Algan & Cahuc 2010), leads to better government performance (Uslaner 2002) and positively affects health and well-being (Yip et al. 2007; Kawachi et al. 2008; Helliwell & Wang 2010). Despite the fact that trust is widely used to explain a wide variety of phenomena, there have been relatively few attempts to explore its empirical determinants (Alesina & La Ferrara 2002; Bjørnskov 2007; Freitag & Traunmüller 2009; Freitag & Buhlmann 2009). The empirical investigations to date have often been limited to institutional or individual factors, ignoring the role of social context.

Therefore, the aim of this paper is to better understand the determinants of generalised trust. I rely on the Granovetter-inspired framework that categorises variables into macro (institutional and macroeconomic controls), meso (social context) and micro levels (individual characteristics and choices). I am particularly interested in the effects of the social context (meso level) and argue that trust is embedded in social context. This means that the decision to trust others is affected not only by institutional measures and outcomes or individual choices but, primarily, by the social canvas in which the macro institutions are set and the values and beliefs that we carry as members of

particular communities. I further argue that measures reflecting an individual's social context include his individual religious affiliation and habitat size.

To test my hypotheses, I use individual-level data from the World Values Survey and merge it with country-level institutional and macro-economic indicators from other sources. I employ a multilevel modelling that accounts for a hierarchical structure of the data. Respectively, individuals, representing level one, are nested within country-year samples. I also increase the complexity of the model by allowing slopes and intercepts to vary across countries and complex variance at an individual level (heteroscedasticity). The results confirm the importance of determinants on all 3 levels. I also find significant effects of religious affiliation and habitat size on individual propensity to trust which suggest that trust may be embedded in social context.

This paper adds to the literature on determinants of trust in three ways. Firstly, it offers an integrated theoretical framework of the determinants of trust. Secondly, I show that the determinants of trust are indeed embedded in the social context as indicated by the results on religious affiliation and habitat size. Thirdly, I use the social embeddedness perspective in the context of a multi-level framework. Also, with respect to informal institutions in general, this study confirms that the immediate social context that they provide powerfully shape individual attitudes towards others.

The rest of the paper continues as follows: Section 2.2 reviews the concept of trust; Section 2.3 introduces the theoretical framework of determinants of trust; Section 2.4 reviews literature to date and proposes hypotheses. In Section 2.5, I discuss data and methodology while section 2.6 presents results, discussion and limitations. Section 2.7 concludes and proposes policy initiatives.

2.2 Conceptualisation of Trust

Trust is a broad and multidimensional term therefore many definitions are currently in use. Those most commonly used in social science revolve around incentive and interest orientation (Levi 1998; Hardin 2001) or bets about contingent future actions of others (Sztompka 1999), which link trust to the prisoner's dilemma or the principal-agent game (Knack 2001). Trust inevitably involves risk associated with potential harm that may occur if trustee chooses to take advantage of his position (Warren 1999), which implies the existence of a transaction in which both parties participate. Yet, when one says 'most people can be trusted' one hardly thinks of a particular pay-off situation. Generalised trust is precisely about lack of pre-existing interest, and more about the attitude and readiness to assume that people are trustworthy. Freitag and Traunmüller (2009) argue that, from

the point of view of rational choice theory, which most of the definitions relate to, it makes little sense because it violates assumption of rationality and maximising behaviour and disregards the premise that all information should be fully determinative.

However, acknowledging 'limits on cognitive competence (…) and self-interest seeking', Williamson (1989, p.44) advocated a semi-strong form of rationality – 'bounded rationality', as a better approach to understanding behaviour of economic agents. The theory of bounded rationality was originated in early 1960s by Herbert Simon who argued that a man is 'intendedly rational, but only limitedly so' (Simon 2011, p.xxiv). It was built on recognition that humans may intend to be rational but in reality they never possess perfect knowledge hence are unable to account for all contingencies. Therefore parties in a trust situation may choose to place trust in each other in order to save time and cost that would be spent on collecting the information and monitoring.

Trust may increase the risk of failure but, since people repeatedly choose to trust, in general, the benefit ought to outweigh the costs. This also implies that trusting people are more inclined to accept risks (Ben-Ner & Putterman 2001; Cook & Yamagishi 2005) which may in turn lead to, among other things, more collaboration, entrepreneurship and innovation (Knight 2012; Kirzner 2015; Kihlstrom & Laffont 1979; Praag 1999; Praag & Cramer 2001; Caliendo et al. 2009). Consequently, more wealth and development can be generated. However, the issue is not straightforward as it has been suggested that trusting behaviour may be clustered i.e. certain countries and regions tend to display more trust than others therefore the benefits may be area limited as well. Putnam et al. (1993), Fukuyama (1995) and Uslaner (2002) argued that this is due to the fact that trust can be embedded in the culture and attitudes and be a feature of societies.

Fukuyama (1995), a key figure in modern discussion on trust, divided societies into high and low trust, arguing that common norms and values are closely associated with trust. In his theory, spontaneous sociability of people who associate and work according to common norms is important manifestation of trust central to reducing transaction costs and supporting development. He further averred that, in order to work efficiently, modern institutions must be supported by comparable norms and moral habits. Universal values and impersonal social ties are at the centre of successful institutions; yet, overly restrictive family bonds make creation of such institutions difficult, as exemplified by the familistic societies such as Southern Italy or China (p.65).

Moreover, Fukuyama introduced a term of 'trust radius', which refers to the 'circle of people among whom cooperative norms are operative' (p.65), which, again, implies that shared norms and values are a feature of groups. Based on this, it has been argued that, in more equal societies one's trust

radius is broader (Uslaner 2002; Bjørnskov 2007). This is because the rich and the poor usually have little in common and they do not belong to each other's 'moral community' (Uslaner 2002). They do not share common values hence it is difficult for them to understand each other's motives. Therefore, in unequal societies, particularly where vertical mobility is low, people will tend to stick with others like themselves and their trust radius will only extend to their own group.

2.2.1 Classification of Trust

As the studies on trust progressed, researchers started to recognise that different circumstances and activities produce different types of trust. The most detailed classification to date identified three types of trust: identity or group based trust, strategic or rational trust and generalised or moralistic trust (Stolle 2002). Most studies recognise only two types, clustering group-based trust together with strategic trust and treat generalised trust as a separate category. However, the terminology is not universal; Putnam (2001) recognised thick (strategic) and thin (generalised) trust while Uslaner (2002) referred to them as strategic and moralistic trust.

According to Stolle (2002) identity or group based trust is based on shared identity and relates most often to family, friends and other shared category members. This is based on the social identity theory[1] that individuals divide themselves into 'ingroups' and 'outgroups' and identify themselves with the groups they belong to while competing with outgroups (Turner et al. 1987; Hogg 2001; Tajfel & Turner 2004). However, Yuki (2003) suggested that such categorisation may be more prominent in Western cultures while in East Asia people may categorise themselves into relationship based groups i.e. based on shared direct or indirect interpersonal links.

In contrast, strategic or particularised trust is based on previous experience of interactions with others (Uslaner 2002) and concrete instances of trustworthiness. It is learned through assumption that it is in people's interest to cooperate, which links strategic trust to the definitions of trust drawing on rational choice theory (Hardin 2002). Stolle (2002) points out that the key difference between strategic and group-based trust lies in sanctioning procedure, as the members of groups connected by particularised trust exclude violators of trust whilst the identity-based groups are more likely to excuse the trust violators and show kindness. Therefore, in the latter case trust is based less on calculation or previous experience but rather on one's own presumption (p. 402).

[1] Social identity theory is a 'social psychological analysis of the role of self-conception in group membership, group process, and intergroup relations.' (Hogg 2006, p.111)

Strategic and identity based trust are natural phenomena often implicitly used to lower transaction costs. In the environment of weak formal institutions trust-based relations may become a substitute for dysfunctional formal institutional environment (Winiecki 2001). They act as devices gluing societies together and preventing them from falling into chaos in the absence of formal 'rules of the game'. However, they also contribute to creation of networks and clans that in the face of poor legal enforcement pose a threat of becoming inward-looking and entrenched, restricting economic activity. Furthermore, network creation in situations of deficient formal institutions make the two types of trust indistinguishable hence many studies cluster them together.

In turn, generalised trust has been often associated with social capital, a topic of a hot debate for last two decades. The concept differs significantly from the two presented above and is at the centre of attention of this paper. Whilst the above represents assumed or learned trust in others, either through repeated interactions or belongingness to the same group, generalised trust is a concept of 'blind' trust or faith in trustworthiness of other people. It is based on a belief that other people share the same values (Uslaner 2002; Stolle 2002) and therefore can be included in our ingroup or trust radius. However, this presumption may be a subject of cognitive analysis or social intelligence (Yamagishi 2011), that allows for a quick assessment of risks and rewards associated with trusting behaviour. Those who claim that others can be trusted do so because, in their mind, potential benefits of doing so are higher than costs of being deceived. Furthermore, generalised trust is often associated with optimism (Uslaner 1999, 2000, 2002; Stolle 2002; Rothstein & Uslaner 2005) and belief in goodwill of others (Seligman 1997).

Sociologists and psychologists often link generalised trust to social structures like social networks that give grounds to trust and develop because of trust (Granovetter 1992; Granovetter 2005; Cook 2005). Granovetter (1973; 1983) also argued for 'strength of weak ties', which emphasised the importance of having wide networks of acquaintances (weak ties) as opposed to circle of close friends (strong ties). This is because acquaintances are different from us and our close friends and they connect us to a wider world. The more weak connections one has got the better chance of his/her trust radius being wider. Based on this premise, generalised trust is often used in empirical studies as a proxy for weak tie social capital.

It is agreed that trust comes into play when there is risk involved (Deutsch 1960). Cook (2005) noted that 'in highly uncertain and risky environments, transactions occur among actors that are secured either by trust relations or some form of reliable institutional backing – where, for example, legal enforcement is swift and sure.' (p.9). However, if background institutions offer little support, which, as she points out, was a case in the Soviet states until 1989, tight-knit trust-based networks

facilitated every-day interactions and sometimes were the only way to obtain resources. It became evident that when formal institutions are deficient informal institutions act as substitute. Yet, those same informal institutions proved to be so embedded that they actually may have inhibited or retarded the move to a modern free market economy in Eastern Europe (Cook 2005).

This phenomenon was explained by Winiecki (2001) who argued that formal regulations may change or new formal institutions may be imposed overnight, however, the more rapid the change and the more different new institutions are from old ones, the more difficult the transition. This is because formal and informal institutions coexist and reinforce each other. They are social constructs, which reflect social structure and underlying social norms but, at the same time, are constrained by them (Granovetter 1992). What is more, Puffer et al. (2010) claim that 'certain cultural features and traditions may favour informal institutions' (p.444). This holds particularly in developing countries where vested interests exist among the insiders who benefit from the status quo. Furthermore, formal rules must be clear and coherent in order to be understood, respected, and implemented by the society. Local and central governments of many developing countries intentionally create complex and incomprehensible regulations which make it easier and more convenient to rely on the informal rules understood and respected by the majority.

However, if formal institutions are well defined, fully operational and effective, the design of trust relations is likely to change. Close-knit trust-based networks become more open and members create a lot of weak ties and network with others who do not belong to their circle of family and friends. Generalised trust towards others spreads as formal institutions act as assurance that even if one's trust is violated, the justice and norms will be restored. The institutions also take a role of a deterrent from wrongdoing as a cheater is likely to face formal and informal punishment.

2.3 Theoretical Framework

Granovetter was one of the first modern social scientists to re-emphasize that institutions are social structures. He suggested that 'internalised rules of behaviour are social in origin' (Granovetter 1985, p.485). Therefore, institutions are 'constructed by individuals whose action is both facilitated and constrained by the structure and the resources available in social networks in which they are embedded' (Granovetter 1992, p.7). Hence, it is near impossible for individuals to act outside the social context, yet they do not slavishly adhere to rules dictated by the social realm they belong to. He referred to the phenomenon as 'embeddedness' which emphasizes that behaviour is constrained by social context.

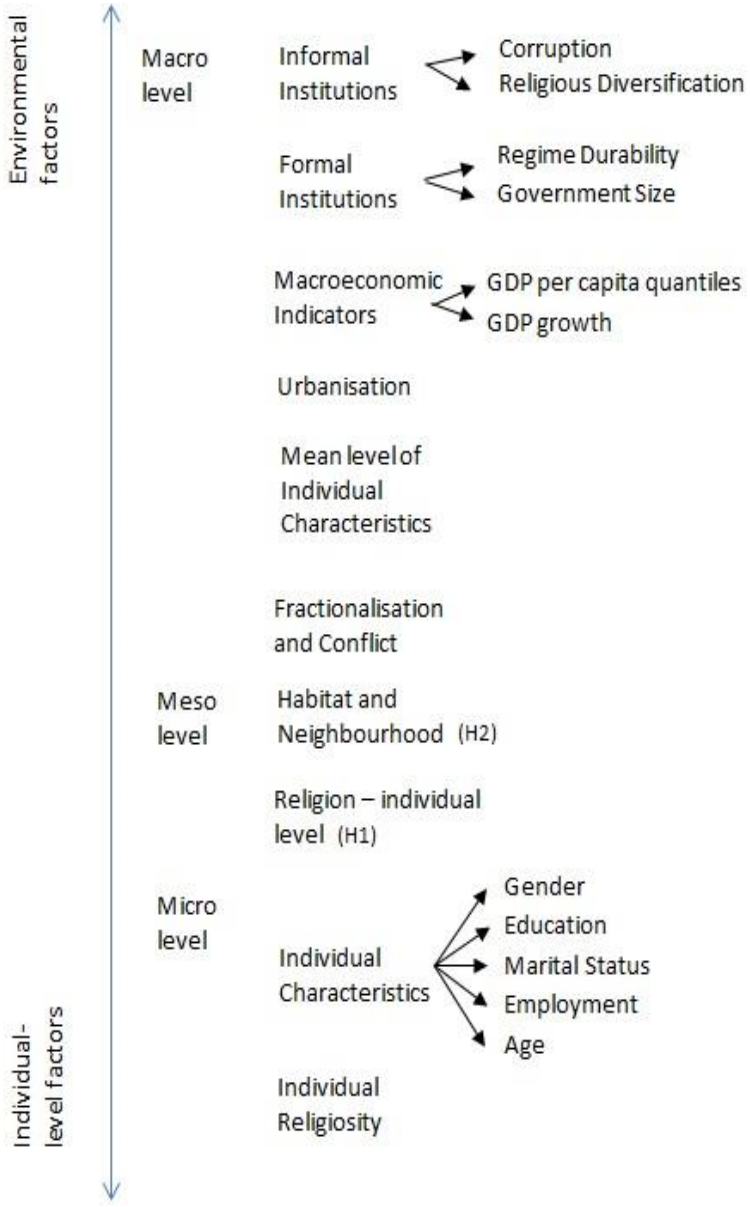
Granovetter's logic has been used to construct the theoretical framework shown in Figure 5. The determinants of trust in the framework are considered at 3 levels of analysis: macro, meso and micro. They reflect factors that affect the decision to trust: environmental factors creating and reflecting the social and economic context as well as institutions in place. The context may be more or less conductive to trust; the institutions may be constructed in a transparent way while the government may either promote trust by its policies or erode it. At the other extreme, individual level determinants and choices are deeply personal with some being independent of the context. At this level the decision to trust may be affected by individual choices and demographic characteristics. Meso level determinants are in between: they may be measured at individual level but are embedded in the context that is relatively more local, situated in a social milieu below the nationwide level. Often they are subject to embedded cultural or institutional norms that do not need to be shared by all, which are reflected at individual level. Here, individuals belong to or consciously assign themselves to particular communities and therefore internalise their social contexts. Hence, the meso level best represents the embeddedness Granovetter was referring to when criticizing over-socialised accounts (referring to aggregate level only) or under-socialised (neglecting social context altogether) of behaviour.

Macro level determinants represent environmental factors and relate to country level phenomena ranging from macroeconomic situations through the institutional context to structural characteristics aggregated up from individual characteristics such as percentage of males/females, a share of people with higher education or average age. Further, I include ethno-linguistic fractionalisation within the macro category as it reflects different social groups that may exist within a country. This in turn may indicate distinct social contexts in existence. Belonging to a certain ethnic community implies that one is bound to be 'constrained' by the rules and norms (context) of that social group. In turn, the existence of ethnically and linguistically diverse communities may create fractionalisation that may lead to conflict. Conflict itself demonstrates existence of at least two different social contexts that feature hostile attitudes towards the other group. In contrast, micro level determinants represent demographic and individual level factors like gender and age or highly personal choices like level of religious observance.

When talking about meso level determinants I refer to two sets of determinants: habitat and neighbourhood and religion as declared at the individual level. The size of the city one lives in has social implications at meso level: by choosing a place to live individuals must also adopt pre-existing rules and adjust to the context. It also implicitly measures extent and intensity of contacts and social interactions. Social implications of individual choice are even more apparent in case of religion.

Individuals may be able to choose a religion but by doing so they declare belonging to a certain social group. Even though the decision may be personal, an individual commits himself to following a certain set of rules and norms that, in cases of many religions, have been institutionalised. Often individuals are not given a choice of religion and are simply brought up within one. This makes one a subject to internalisation of a set of norms acceptable within that religious community. Since religion is internalised, it may be thought of as an institution reflected at individual level.

Figure 5. Theoretical framework of determinants of generalised trust



2.4 Literature Review and Hypotheses

The common discussion of the importance of trust in the literature began with John Locke's claim that the relationship between the government and its citizens is one of trust (Dunn 1984). Locke deeply believed that 'Men live upon trust, and their knowledge is nothing but opinion moulded up between custom and interest…' (Locke & Wootton 1993, p.140).He emphasized that societal and

rational approaches to trust are interlinked and trusting behaviour is a result of balance between social forces and one's rational calculation.

Despite early realisation of the importance of trust, the concept became neglected until late 20th century (Sztompka 1999, p.16). Only publication of an influential essay in 1979 by Niklas Luhman, which stressed trust's indispensability in a complex modern environment, marked a return of the concept. A few other researchers picked up the topic in 1980s, particularly Eisenstadt and Roniger (1984) who were interested in trust and interpersonal relations of friendship, ritual personal and patron-client relations and their connection to the institutional environment in which they develop. Also, in 1988 Diego Gambetta (2000) looked at trust relations in closed communities in Southern Italy where he observed distrust leading to lack of mutually beneficial cooperation, harmful competition and withdrawal of some parts of the society.

The real discussion began after Putnam et al. (1993) analysed GDP disparities between Italian regions and concluded that differences are mainly due to the differences in the levels of social capital and are manifested by differences in societal structures, civil community, civic involvement and government efficiency. The research then focused on social capital – a term introduced only few years earlier by James Coleman (1988), who claimed that making of social capital depends on people's ability to associate with each other and act together, which in turn is contingent on shared norms and values. He however recognised that trust is an indispensable part of social capital.

More recently, acknowledging a positive impact of generalised trust on economic development and other areas, some scholars have been inspired to look at its determinants (Uslaner 2002; Alesina & La Ferrara 2002; Bjørnskov 2007; Freitag & Buhlmann 2009). Uslaner (2002) was one of the first to contest the long-standing claims that membership in voluntary groups and associations and informal socialising helps to expand trust. He argued that group membership bonds us with people of our own kind as it makes us socialise with people we already know or those who share similar interests. Empirically, using individual level survey data, he showed that only giving to a charity and volunteering positively affect generalised trust. Alesina and La Ferrara (2002) took a different approach stressing that both individual experiences and community characteristics influence levels of trust. They analysed American individual level data and concluded that personal level factors that negatively affect trust include: recent history of traumatic experiences, belonging to a discriminated group or minority and being unsuccessful in terms of education and income. At the community level, living in a racially mixed and economically unequal neighbourhood also have a negative impact on individual trust.

Bjørnskov (2007) expanded the research and conducted a cross-sectional study of over 70 countries. His results confirm that income inequality and ethnic diversity are negatively related to trust while Protestant religion and having a monarchy are positively related. He found that the post-communist countries tend to be less trusting due to the heritage of mistrust towards the state and fellow citizens inflicted by the Soviet regime. Freitag and Buhlmann (2009) took the discussion on determinants of trust to another level by conducting multi-level analysis of over 67,000 individuals across 58 countries that took part in 1995-1997 and 1999-2001 waves of the World Values Survey. They focused on political-institutional context and arrived at interesting conclusions, which confirm the above studies: less corruption, more equality and fair representation positively affect individual propensity to trust.

This paper aims to expand on previous research and to add new dimensions to the analysis. In particular, it investigates the determinants of trust at three levels: macro, meso and micro. Institutional and individual differences are most commonly mentioned determinants of generalised trust. However, I argue that the decision to trust may be preconditioned by the social context an individual finds himself in. This context is captured here by individual's religious affiliation and habitat.

2.4.1 The Effect of Religious Affiliation on Trusting Behaviour

Religious affiliation is likely to affect trust as often religion is a source of moral norms and beliefs. Religion reinforces shared social norms and moral beliefs by emphasizing the obligation to do good, be kind to others and help those in need. Also, most of the major religions have common foundations: Christianity, Judaism and Islam are all Abrahamic religions that share the Old Testament as one of their holy books and live by the Ten Commandments. Other major faiths promote very similar moral values. Therefore, applying some generalisation, it may be argued that most of the religions promote trust, cooperation and charity.

Most studies to date found that less hierarchical religions are more conducive to trust; for instance, Protestantism, often seen as less hierarchical and more progressive, has stronger positive effects on trust than Orthodoxy, Catholicism or Islam (Uslaner 2002; Knack & Zak 2003; Bjørnskov 2007). However, Rothstein and Uslaner (2005) reported that Muslim societies are more equal, therefore are more likely to have more trust. Additionally, Muslims have traditionally been traders, which exposed them to uncertainties related to facing new people and situations. In order to be able to have succeeded in trade they must have developed a degree of trust. Warner and Wenner (2006)

claim that Islam, in principle, is not a hierarchical religion, and in fact, it is less hierarchical than many Christian denominations, Roman Catholicism in particular. As an example they mention lack of formal instruments by which religious leaders can enforce obedience on the adherents; there are no sacraments that could be withheld. Decentralised structures also prevents followers from obtaining private rewards from collective action. Yet, this view may appear oversimplified seeing that Islam is interpreted and followed so differently in different countries.

On the other hand, some studies showed that religion can foster intergroup trust and intragroup distrust through psychological biases: via intergroup rivalry and stereotypes (Fershtman et al. 2005). This may be especially pronounced where well-identified and stable religious and ethnic cleavages exist. However, Traunmuller (2011), using multilevel modelling, found that, in Germany, Protestants tend to be more trusting than Catholics, Muslims and other Christian groups. The Protestant context was shown to further increase generalised trust regardless of individual beliefs. Furthermore, individual respondent's religiosity, as exhibited by church attendance, has been found to positively affect his/her propensity to trust.

Therefore, the first hypothesis I propose reads:

> ***Hypothesis 1.*** *Religious affiliation affects individual trust with more hierarchical religions having a negative effect.*

2.4.2 The Effect of the Size of Habitat on Trust

Relatively little work has been conducted on the importance of size and type of habitat and trust. Ibn Khaldun (1332 – 1406), one of the greatest Arab philosophers and forerunner of modern historiography, sociology and economics argued that urban life is incompatible with trust (cited in Gellner 2000). Urban psychology of 1960s and 70s further argued that city dwellers experience such high level of stimulus input that in effect they become less cooperative and less trusting (Milgram 1974). Nonetheless, empirical evidence at that time has been rather scarce. House and Wolf (1978) analysed series of samples of the American population between 1956 and 1972 where they used willingness to be interviewed as a measure of trust. They found that differences between trust rates and helpful behaviour only emerged after 1960s. The emergence of mistrust was largely attributed to rising levels of reported crime rates in the cities.

This also posed a question of what is the optimal size of the city that maximises social capital. Dahl (1967) argued that ideal size of democratic city is 50,000 inhabitants; however, factors like location

in rural or metropolitan areas need to be considered before any conclusion is made. More recently, Oliver (2000) found that people in larger American cities are much less likely to get involved in social and community activities, which he attributes to the differences in social relations (people in larger cities are less likely to know their neighbours) and psychological orientation (complex urban environments push people to withdraw into more private orientation).The effects occur irrespective of rural or metropolitan location. However, what matters are municipal boundaries, which play a role in defining social interactions and psychological orientation of residents.

Links between social integration and neighbourhood have been of some interest to researchers particularly in the 1990s. However, the topic of neighbourhood cohesion was often connected to the crime rates, fear of crime as well as exclusion related behaviours. In the age of increased mobility and internet usage Forrest and Kearns (2001) argue that it is important to see neighbourhoods not only as territorially bounded areas but 'as a series of overlapping social networks' (p. 2130). Survey of English Housing 1997/98 asked a sample of people their views on their neighbourhood's social qualities. In wealthy and middle-aged home-owning areas, majority of respondents admitted that there is a lot of community spirit in the area and the people in the neighbourhood are friendly. On the other hand, council estates and inner-city dwellers viewed their neighbours as unfriendly and their local areas having little community spirit. Since the studies of the neighbourhood and city size to date are scarce, there is little evidence that allows for making any generalisations regarding the relationship between urbanisation and trust.

Based on theoretical contributions and scarce evidence to date, the second hypothesis proposes:

Hypothesis 2. *Living in a larger city negatively affects individual propensity to trust.*

2.4.3 The Effects of Macro and Micro Level Controls on Trust

This section discusses and reviews the literature related to the control variables at the macro and micro levels as presented in the theoretical framework in the Section 2.3.

Informal institutions

Informal institutions, discussed in more detail in Chapter 1, may be understood as traditions, customs, shared social norms and unwritten codes of conduct (North 1990; Baumol 1996; Helmke & Levitsky 2004; Jütting & de Soysa 2007). They are embedded in the social context, govern human behaviour and affect seemingly independent choices. Corruption is often seen as a sign of poor

quality of institutions and an outcome of poor governance. However, as discussed in Chapter 1, if widespread and institutionally embedded, corruption becomes a norm of behaviour and responds slowly to institutional reform (Jepperson 1991; Bratton 2007; Aidis et al. 2010). Therefore, considering corruption as more fundamental problem embedded in generational change (Estrin & Mickiewicz 2011) may be more appropriate in the discussion of trust.

Corruption violates trust in public bodies and undermines the shared moral norms that condition social cooperation. Uslaner (2004) points out that connection between trust and corruption is reciprocal but the effect of corruption on trust is greater. Moreover, Rothstein and Uslaner (2005) hold that corruption leads to more inequality as it transfers resources from the poor to the rich. Inequality in turn, has more pronounced effects on economic and social progress (Glaeser et al. 2003), especially when the institutional environment is weak and subverted by the rich and powerful, which is likely to inhibit trust. Therefore, it is expected that the relationship between trust and freedom from corruption will be positive. However, the possibility of bidirectional relationship is not tested here.

Formal institutions

Formal institutions can be defined as codified rules of behaviour that determine political, economic and enforcement systems (North 1990; Pejovich 1999). They enable, limit and sanction behaviours. Through institutions, the government sets the rules pertaining punishment for the violators of trust. The government may also affect trust through welfare spending by minimising the inequality and providing public goods. It has been argued in the literature that democratic institutions may widen the trust radius in two ways: 1) by deterring potential harm and 2) by giving certainty that even if one's trust is abused, effective institutions will punish the abuser (Knack & Zak 2003). Furthermore, Knight (2001) argues that good institutions foster trust among socially diverse communities, who may have different cultural norms and beliefs, by establishing a common ground for cooperation and shared rules. He suggests that if the content of laws, procedures of application and interpretation reflect common features of cultures, then formal and informal rules are accepted and reinforced, widening the trust radius (p.368).

The size of the government measured by government expenditure is expected to positively affect trust in that the higher the spending the more likely individuals are to be trusting. Higher spending may create basis for better institutions, funding law and order enforcement systems and infrastructure (Aidis et al. 2012). Further, it has been argued that government spending encourages

trust by supporting civil society infrastructure (Torpe 2003). Through welfare programs, governments may be able to ameliorate relations with citizens and affect integration of the society. Larger state may also be associated with higher ability to redistribute wealth through taxation and regulation (Sobel 2008). However, this poses a threat of large governments being able to expropriate private property.

Durability of regime, defined as number of years since the most recent regime change (Center for Systemic Peace 2011), captures pattern of authority relations and encapsulates two important properties of political systems: persistence and adaptability (Gurr 1974). Adaptability refers to the system's 'capability to adjust itself to undergoing incremental changes in its authority pattern' (p. 1973). Thus, the durability of the regime may demonstrates trust placed in the system and institutional conditions that are desirable and acceptable to the voters. These conditions may promote generalised trust. However, oppressive regimes may last surprisingly long as exemplified by the Communist states and many African countries.

Fractionalisation and Conflict

I also consider two important measures of social cohesion namely conflict and fractionalisation. Fractionalisation, defined as a probability that two persons drawn at random from a country's population will not belong to the same ethnolinguistic group (Mauro 1995), is thought to be very good indicator of social cohesion along with income inequality. Numerous studies confirmed that income inequality, usually measured by the GINI coefficient, and social polarisation negatively affect generalised trust (Knack & Keefer 1995; Knack & Zak 2003; Uslaner 2005; Bjørnskov 2008). It is rather unlikely that people who share one territory but do not share a common language or where the income distribution is unequal and marked, will share the same norms and believe that they belong to each other's community.

Empirical results regarding ethno-linguistic fractionalisation have not been as consistent although the measure has been thought to be more exogenous than the GINI coefficient. A survey of Australian communities found that at neighbourhood level, trust is higher in richer areas and lower in ethnically and linguistically diverse communities. The effect was much stronger for linguistic fractionalisation although it resulted in lower levels of generalised trust only among immigrants (Leigh 2006). Moreover, a study of US and Canadian communities found negative effect of neighbourhood diversity on white majorities' trust levels (Stolle et al. 2008). Nevertheless, there is evidence that these negative effects can be mitigated at social level if individuals regularly talk with

their neighbours. So far, few cross sectional studies were able to confirm these results (Bjørnskov 2008; Hooghe & Reeskens 2009).

Nowadays, virtually all societies may be exposed to conflicts including civil wars, political violence, terrorism and civil disorder. This has been proven by the recent Arab uprising (2011), violent protests in the UK in the summer 2011 and unrest in Southern Europe caused by planned austerity measures to name a few. The threat of terrorism, especially home grown, is higher than ever and economic recession only adds to general discontent. Economic hardships usually fuel hatred between different ethnic groups and accentuate income differences.

Internal conflicts reflect breakdown of social fabric and social cohesion. O'neill (2002) argues that 'terrorism undermines the conditions of trust because it inflicts violence (…) undermining our ability to place trust' (p. 25). Moreover, Blomberg et al. (2011) found that conflicts such as war or terrorism harm trust and the individual probability to trust falls by 0.02 to 0.07 percentage points when a country is subject to a conflict.

Other macro level controls

Further, I control for the effect of the post-communist heritage in the countries that have been a part of the Soviet bloc until 1989. The literature to date suggests that Communist heritage is negatively related to country-level generalised trust (Bjørnskov 2007). I also control for the peer effects as reflected by country level means of all individual level variables. At the country level these indicators reflect the national social context. For instance, a country where the majority of the population are Orthodox Christians is likely to have a set of norms and rules that will reflect this religious dominance, even if the country is formally secular. Similarly, a highly urbanised country, as reflected by a high percentage of medium and small towns, is likely to have norms that reflect environments of high population density.

The paper also considers the effect of macroeconomic indicators such as GDP per capita and GDP growth. These measures capture wealth, prosperity and levels of development that are expected to positively affect the propensity to trust.

Individual level controls

Other controls include personal characteristics that may be independent of immediate and institutional context such as gender and age. The literature to date (Freitag & Buhlmann 2009) suggests that females trust less as they are less likely to take risks and because of their traditional roles as home makers, they may be exposed to fewer new people and situations. Further, the effect of age has been shown to be non-linear whereby younger and older people are more trusting (Freitag & Buhlmann 2009). This has been explained by the fact that older people have more knowledge and life experience. Also they are likely to be less involved in risky situations. Younger people, on the other hand, are not experienced enough and may not fully realise threats and risks.

Level of education, religiosity, marital status and employment status are other individual level characteristics considered here. Educational attainment and employment may broaden people's horizons and expose them to situations and people that often challenge established ways of thinking and promote innovative solutions. They extend weak ties that are vital for cooperation and trust. Those who are outside education and employment are disconnected from wider society, which may lead to social exclusion, deprivation and distrust. Further, religious observance has been shown to be positively correlated with trust towards others (Bègue 2002; Branas-Garza 2009). Religious people are also thought to be more cooperative and trustworthy (Orbell & Goldman 1992; Tan & Vogel 2008).

2.5 Data and Methodology

To test the hypotheses I merge individual level data from World Values Survey (WVS thereafter) with country-level institutional indicators. Data from all waves of World Values Survey, spreading between 1981 and 2008, is utilised. The number of countries covered in each wave varies from 21 in 1st wave to 73 in 4th wave (see Table 1 below and Appendix 1 for the list of countries that participated in each wave). With exception of Dominican Republic, the WVS data consists of representative samples of at least 1,000 individuals above 14 years of age. The data has been collected through face to face interviews with individuals selected, where possible, via full probability sample.

The World Values Survey dataset is a source of all individual level variables used in this paper and country level means were calculated based on those. The list of all variables and their sources is presented in Appendix 2.

2.5.1 Data

2.5.1.1 Dependent Variable – Generalised Trust

Dependent variable in this study is World Values Survey question '*Do you think others can be trusted or you cannot be too careful with people?*' measured at individual level (Inglehart 2004). The objects of the analysis are 64,317 individuals across 60 country-year groups.

Much debate has recently evolved around the question of what this variable actually measures. In experimental settings, Glaeser and Laibson (2000) found that the question is correlated with trustworthiness and not with actual trusting behaviour in a sample of Harvard students. This was directly negated by Fehr et al. (2003) study of German households that found strong correlation of WVS question with actual behaviour but not with trustworthiness. In more recent study of MBA students at university of Chicago, Sapienza et al. (2007) found that it is expected trustworthiness that is strongly correlated with WVS question. However, Chicago MBA students and Harvard undergraduates represent highly homogenous samples, which may explain why students would extrapolate their own behaviour and expect others to behave like they would. In more heterogeneous sample of German households' opposite result is understandable. It is therefore likely that the WVS question is correlated with actual trusting behaviour as few communities are as homogeneous as students of one university.

Other measures of trust that account for the uncertainty of WVS measure have been developed. The most commonly used alternative is Gallup World Poll survey question "*In the city or area where you live, imagine you lost your wallet or something holding your identification or address and it was found by someone else. Do you think your wallet (or your valuables) would be returned to you if it were found by a neighbour/the police/a stranger?*' The introduction of the question in the survey was spurred by Readers Digest experiment involving dropping 10 wallets with cash and IDs in 20 cities in 14 Western European countries and in a dozen of major US cities. The rate of returned wallets was used to construct a trustworthiness index. Knack (2001) compared the trustworthiness index based on the wallet experiment with the national average of WVS trust question and found that the correlation was at the 0.65 ($p<0.01$) level. This supports the claim that the two measures can be used interchangeably. Morrone et al. (2009) further argued that WVS should be used when there is a need to evaluate 'whether a country has a system of beliefs and values that foster trust and cooperation among its members' while the wallet question 'is more suitable in practical situations' (p.15-16). However, they also argue that due to a high level of overlap WVS question may be used when more specific information is not available.

Table 1 present the average scores of trust in each wave of WVS. Over last 20 years the number of people expressing willingness to trust others declined from over a third to only about a quarter of surveyed population. Graph 1 (Appendix 3) shows a distribution of trust in the whole sample by income quantile. It would be expected that as countries get richer the average trust levels increase, yet, middle and upper-middle income countries (3rd and 4thquantile) have less trust than the wealthiest countries, as defined by 5thquantile. However, when looking at disaggregation by wave (Graph 2 - Appendix 4) the picture is somewhat different: the richest countries are still the most trusting but trust levels in other income groups are more dispersed. As it is apparent from Table 1, the sample size has been increasing with each wave the sample became more representative. Over time, some countries moved between income quantiles while their levels of trust may not have changed. This is likely to influence to some extent the fluctuations of trust between quantiles in different waves.

Table 1. Average Trust scores by wave

Wave	No of Individuals Surveyed	No of Countries	Average Trust
1 wave (1981 – 1984)	10,307	21	34.76%
2 wave (1989 – 1993)	24,558	47	29.91%
3 wave (1994 – 1999)	78,678	57	24.76%
4 wave (1999 – 2004)	61,062	73	27.98%
5 wave (2005 – 2007)	82,992	56	26.06%
Total/Average	**257,597 (Total)**	**87 (Total)**	**26.82% (Average)**

2.5.1.2 Independent variables

The variables pertaining to religious affiliation and habitat size have been drawn directly from the WVS. Religious variables measure impact of 5 main religions (Protestantism, Islam, Orthodoxy, Hinduism and Buddhism) as well as all other faiths clustered as 'other religions' on trust as opposed to reference category – Catholicism. It should be noted that in this paper some Christian religious factions (Roman Catholic, Protestant and Orthodox) are treated separately whilst, for instance, Islamic factions are not. This is due to the historical treatment of Christian factions as separate, which goes back to Weber (1905/1978). Therefore, this established research tradition, may justify formation of prior expectations. Furthermore, Protestants and Catholics as well as other Christian denominations tend to be differentiated well in surveys while Buddhist and Islamic factions are not accounted for so well and are often confined to one country or area.

Habitat-related variables are reflected by the size of town the respondent of WVS lives in. The WVS provides 8 categories of the size of town with category number 1 being the smallest and category number 8 being largest. For the purpose of this paper, these scores were reduced to 3 categories: large town, medium town and small town with the small town used as a reference category in the model.

2.5.1.3 Control Variables

Institutional controls capture the formal and informal institutions. All institutional and macro-economic variables have been lagged by 2 years to account for potential delayed feedback effects. To capture informal institutions Heritage Foundation (2011) freedom from corruption scores are used. Countries are ranked on a scale from 0 to 100 with 100 being the least corrupt. Formal institutional variables are government spending transformed back to original scores (Reynolds 2011)[2] and durability of regime, defined as number of years since the most recent regime change (Polity IV, 2011).

Further, fractionalisation is measured by level of ethno-linguistic fractionalisation in 1985 (Mauro, 1995). The variable was calculated using the data of the Atlas Narodov Mira (Taylor & Hudson 1970). It measures the probability that any two citizens will be drawn from a different ethno-linguistic group. Additionally, the paper employs a measure of internal conflict (The PRS Group 2008) which is an 'assessment of political violence in the country and its actual or potential impact on governance' (p. 4).

I also control for macroeconomic environment: 2-year lag of GDP per capita in purchasing power parity terms (World Bank 2009b) and GDP growth (World Bank 2009a). The GDP per capita measure was divided into five income quantiles coded as dummy variables to eliminate the potential multicollinearity problem between GDP and other institutional variables. To derive the income quantiles, the GDP per capita data has been ranked from the lowest to the highest and divided into 5 equal portions. Therefore, the first quantile represents the poorest countries (the bottom 20 per cent with respect to income per capita), and is used as the reference category, and the fifth quantile - the wealthiest countries (top 20 per cent in the sample).

I also control for individual and country-mean levels of: education, employment, age, gender, marital status (WVS) and transition dummy. Country level means of meso and micro level variables are also included: religion, religiosity, habitat size and individual characteristics.

2.5.2 Methodology

This paper follows Freitag and Buhlmann (2009) in using multilevel modelling in order to address individual and contextual effects simultaneously. Hierarchical modelling has been widely used in education, medical and biological sciences, psychology, even in political studies but not as much in sociology and economics. This may be due to the fact that until recently few suitable datasets existed. However, considering data at multiple levels is beneficial for at least four reasons: it allows for the building of a single comprehensive model, allows exploring casual heterogeneity, provides a test of the generalizability of findings and for statistical reasons as multilevel models are believed to improve standard errors and decrease Type 1 errors (Steenbergen & Jones 2002).

I tested whether the choice of multilevel modelling is justified. For this the likelihood ratio test was performed and compared to the 2-level random intercept model where individuals (level 1) are nested within country-years[3] (level 2) with a single-level one which does not account for hierarchical structure of the data. The multilevel model was confirmed to be a suitable choice[4]. The significance of a random intercept 3-level model where individuals (level 1) are clustered within years (level 2) and subsequently within countries (level 3) was further tested. However upon examination of LR

[2] $GE_i = 100 - \alpha(Expenditures_i)^2$
$\alpha = 0.03$
[3] Country-year groups have been created according to the following formula:
(country number x 10,000) + year
[4] LR test: 2x(-46722+44527)= -4390

test, it became apparent that 2 level model is more appropriate[5]. This may be because individual countries are measured, at best, in 5 year intervals.

I examined the appropriateness of utilising a 2-level model where intercept and slope were allowed to vary randomly across country groups for individual level variables. Three individual level variables were selected to be included in random part of the regression: 'town large', 'Orthodox' and 'Islam' - the variables that came significant in a random intercept 2-level model. The motivation behind choosing those variables is the following: it is recommended that random slopes are applied to variables suggested in the literature. However, since literature on determinants of generalised trust is rather limited and there exists only one study, I am aware of, that utilised this methodology, no precedence has been established yet. Therefore, to avoid a situation when the effects of all individual level variables are allowed to vary across countries that may be questionable from the methodological perspective. LR test confirmed that testing each respective random effect improves the fit of the model.

In addition to individual effects (ij) country-year averages of individual-level variables were introduced. The aim is to control for a group level effects; for instance, the coefficient β_{12} for variable Muslim denotes an individual effect of being a Muslim whilst coefficient β_{13} for variable $Muslim_j$ represents a peer effect of the overall number of Muslims in a country. LR test confirmed that inclusion of the mean effects improved the fit of the model[6].

The two level regression model with random intercepts and slopes is therefore specified as follows:

$$Trust_{ij} = \beta_0 + \beta_1 Social\_Context_{ij} + \beta_2 Institutional\_Controls_j + \beta_3 Fractionalisation\&Conflict_j + \beta_4 Macroeconomic\_Controls_j + \beta_5 Individual\text{-}level\_Controls_{ij} + \beta_6 Country\text{-}level\_Means_{ij} + \mu_{0j} + \mu_{nj} + \varepsilon_{ij}$$

Where $Trust_{ij}$ is a measure of generalised trust, while the social context variables include measures of religious affiliation and habitat size:

$$Social\_Context_{ij} = Protestant_{ij}, Muslim_{ij}, Orthodox_{ij}, Hindu_{ij}, Buddhist_{ij}, OtherReligion_{ij}, Atheist_{ij}, MediumTown_{ij}, LargeTown_{ij},$$

Institutional controls are comprised of lagged measures of corruption, durability of rhe government and government expenditure:

[5]LR test: 2x(-33495 + 33496) = 2

[6]LR test: 2x(-33496+33525)= 58

$Institutional\_Controls_j = lag2\_Corruption_j, lag2\_Durable_j, lag2\_GE_j$

Fractionalisation and conflict variables include:

$Fractionalisation\&Conflict_j = lag2\_InternalConflict_j, elf85_j$

While macroeconomic, individual level and country level controls contain:

$Macroeconomic\_Controls_j = lag2\_GDPgrowth_j, Quantile2_j, Quantile3_j, Quantile4_j, Quantile5_j, Transition_j$

$Individual\text{-}level\_Controls_{ij} = NotReligious_{ij}, Female_{ij}, Age_{ij}, AgeSq_{ij}, Married_{ij}, EducPostpri_{ij}, EducPostsec_{ij}, InEmployment_{ij}$

$Country\text{-}level\_Means_{ij} = Protestant_j + Muslim_j, Orthodox_j, Hindu_j, Buddhist_j, OtherReligions_j, Atheist_j, NotReligious_j, MediumTowns_j, LargeTowns_j, Female_j, AgeMean_j, Married_j, EducPostpri_j, EducPostsec_j, InEmployment_j$

Random part of the equation is represented by $\mu_{0j} + \mu_{nj} + \varepsilon_{ij}$, where μ_{0j} denote country-year residuals, μ_{nj} random slopes residuals for selected variable n and ε_{ij} individual level residuals.

There is a potential multicollinearity problem between three institutional variables, namely internal conflict, government expenditure and freedom from corruption. The correlation between each respective pair of variables is approximately 0.6. Therefore, after running baseline 2-level models, additional models without internal conflict, government expenditure and freedom from corruption were run to assess the effect of each of those variables (available upon request).

All models (results are reported in Table 2 and 3, Models 1-6) were estimated using Gaussian estimation. Also, in models 4-6, I specified unstructured covariance matrix that allows for complex (non-constant) level 1 variance (heteroscedasticity).

2.6 Results and Discussion

2.6.1 Specifications and empirical results

The empirical results are presented in Tables 2 and 3. In the spirit of hierarchical modelling each model builds on the preceding one. The results largely confirm the hypotheses posed, however, a few interesting exceptions arose. The significance level and signs of coefficients are largely in accordance with expectations.

The first model represents so-called ‘empty’ model, run to assess whether hierarchical model is appropriate for the data. Intra-class correlation coefficient (Rho) indicates that 17% of the residual intraclass correlation of the latent response is within countries while 83% between, it therefore suggests that it is worth exploring the data using multilevel modelling to account for both effects.

Models 2 and 3 represent random intercept specification allowing for the intercepts to vary randomly across each country-year group. This accounts for the differences between the groups but assumes that the slope is the same for each group i.e. it does not account for random effects at individual level. Models 4 onwards report results of 2-level regressions with random intercepts and random slopes for single variables: Orthodox (Model 4), Islam (Model 5), Town large (Model 6).

The results for hypothesised variables will be reviewed first. It appears that Muslims are more trusting than Roman Catholics and there is no difference in propensity to trust between Roman Catholics and Protestants. This contradicts the results of Bjornskov (2007) and Freitaget. al. (2009) who reported negative or no difference between trust levels of Muslims vs Catholics. Also, they found that Protestants tend to be more trusting than Catholics. As expected, individuals belonging to Orthodox denomination are less trusting, which may be attributed to it being more hierarchical and strict. Also, the variable is strongly correlated with 'years under communism', which suggests that the effect of communism may be picked up by it.

The results related to religious denomination were further tested by allowing effects of Orthodox and Muslim religions to vary between and within countries (random slopes and unstructured covariance). In random part of the regression, variances of intercepts and slopes of both Orthodox and Muslim denominations became significant. This suggests that there is significant variance in the effects of the denominations across country-year groups. Unstructured covariance allows complex variance at individual level (heteroscedasticity). The covariance seems to be significant only for Islam. The negative sign indicates that countries with lower intercepts (country-average level of trust is lower than the sample average) tend to have steeper slopes. Therefore the effect of Muslim religion is smaller in the countries with high average levels of trust.

Results in all 4 specifications seem to support hypothesis 2. People living in medium and large towns tend to be less trusting than people living in small towns. Furthermore, when intercepts and slopes for the variable large town are allowed to vary in the random part of the regression, the coefficient in the fixed part becomes insignificant. The coefficients in the random part remain significant at 1 per cent level. This indicates that there is significant variation in the effects of living in a large city across countries. It is likely that for some countries the negative effect of living in a large town is

significant and that influences the coefficient in the fixed part when intercepts are fixed. However, when the effects of town size are allowed to vary in random slopes model, the effect it had on the fixed part of the estimation disappears.

In terms of institutional controls, freedom from corruption and government expenditure appear to be significant across all specifications. All come with the expected sign: higher freedom from corruption and more spending boost personal trust. Durability of the regime becomes insignificant in all but one specification. I also find very strong evidence of ethno-linguistic fractionalisation as of 1985. It has highly negative effect on current levels of trust. The effect is significant at 1 per cent level across all specifications. The size of the coefficient is very large, which suggests a strong effect of this variable. Similarly, the effect of internal conflict is negative and significant across all specifications. Also, the transition dummy seems to be insignificant across all specifications indicating that the effect of transition does not significantly affect the propensity to trust.

Macroeconomic indicators do not seem to have much effect on trust. However, interestingly, countries in top two quantiles (top 40 per cent with respect to income in the sample), seem to be less trusting as compared to the 20 per cent of the poorest countries.

Individual level controls show that females tend to be less trusting than males while the relationship of trust with age seems to be nonlinear in random intercept models (Model 2 and 3): younger and older people trust more than middle-aged. The effect disappears in random slope models (Models 4 – 6) where age seems to have a linear positive effect on trust, suggesting that the older you get the more likely you are to trust other people. Additionally, employed people seem to be more likely to trust, a result significant at 1 per cent level across all specifications while the effect of being married appears to be significant and positive only in random slopes models. Furthermore, the effect of education is somewhat surprising: people having secondary education are less trusting than people with primary and those with postsecondary education seem to have highest levels of trust (Models 2-3). Both results are significant at 1 per cent level. However, when the random effect of city size and religion are introduced, the effects of secondary education at individual level become positive and significant while effect of tertiary education become insignificant.

Finally, I find some very interesting results with respect to the means of individual level variables. It appears that religious diversity, measured by the percentage of other religions at the country level, very strongly and positively affects individual propensity to trust. Similarly, a higher percentage of non-religious people seems to have a strong and positive effect. Further, higher urbanisation, as exhibited by higher percentage of large towns, appears to positively affect trusting behaviour.

Table 2. Estimation results, Models 1-3

VARIABLES	(1) RI Model	SE	(2) RI Model	SE	(3) RI Model	SE
Constant	-1.117***	(0.0625)	0.132	(0.646)	-1.541	(1.763)
Religious affiliation						
Protestant			0.0124	(0.0373)	0.00866	(0.0374)
Islam			0.205***	(0.0506)	0.208***	(0.0514)
Orthodox			-0.195***	(0.0693)	-0.192***	(0.0703)
Hindu			0.124	(0.0888)	0.118	(0.0897)
Buddhist			0.0598	(0.0947)	0.0209	(0.0958)
Other religions			-0.0474	(0.0607)	-0.0656	(0.0609)
Atheist			0.0225	(0.0804)	0.0159	(0.0805)
Habitat and Neighbourhood						
Medium Town			-0.0671***	(0.0258)	-0.0661**	(0.0258)
Large Town			-0.0660**	(0.0269)	-0.0664**	(0.0269)
CONTROLS						
Institutional Controls						
Freedom from Corruption			0.0191**	(0.00792)	0.0181***	(0.00663)
Regime Durability			0.00782***	(0.00265)	-0.00264	(0.00313)
Gov. Expenditure			0.0209*	(0.0124)	0.0254***	(0.00904)
Fractionalisation and Conflict						
Internal Conflict			-0.205***	(0.0722)	-0.264***	(0.0638)
Fractionalisation			-1.329***	(0.367)	-0.900***	(0.317)
Macroeconomic Controls						
GDP Growth			0.0131	(0.0331)	0.00926	(0.0254)
Income quantile 2			-0.246	(0.262)	-0.161	(0.294)
Income quantile 3			-0.168	(0.312)	-0.143	(0.302)
Income quantile 4			-0.865***	(0.292)	-0.710**	(0.310)
Income quantile 5			-1.031**	(0.459)	-0.622	(0.441)
Transition			0.0344	(0.274)	0.404	(0.324)
Individual level controls						
Not religious			-0.00219	(0.0271)	-0.00688	(0.0272)
Female			-0.0352*	(0.0202)	-0.139***	(0.0530)
Age			-0.00748**	(0.00352)	-0.00921**	(0.00360)
Age squared			0.000113***	(3.72e-05)	0.000117***	(3.72e-05)
Married			0.0794***	(0.0225)	0.0885***	(0.0228)
Edu.: sec. or more			-0.121***	(0.0249)	-0.121***	(0.0250)
Edu.:postsec. or more			0.293***	(0.0256)	0.294***	(0.0256)
In employment			0.0855***	(0.0223)	0.0831***	(0.0223)
Age x Female					0.00248**	(0.00118)
Country level means						
Protestants (mean)					0.530	(0.383)
Muslims (mean)					0.656**	(0.293)
Orthodox (mean)					0.171	(0.345)
Hindu (mean)					1.035	(0.660)
Buddhists (mean)					0.762	(0.685)
Other religions (mean)					4.298***	(1.062)
Atheists (mean)					-3.117	(1.943)
Non-religious (mean)					1.256**	(0.622)
Medium towns (mean)					0.420	(0.629)
Large towns (mean)					1.212***	(0.451)
Females (mean)					-4.441**	(2.218)
Age (mean)					0.0530**	(0.0223)
Married people (mean)					-0.110	(0.642)
Edu.: sec. or more (mean)					0.525	(0.577)
Edu.:postsec. or more (mean)					0.815	(0.807)
In employment (mean)					1.033	(0.785)

Lnsig2_u	-0.371***	(0.107)	-1.069***	(0.189)	-2.002***	(0.195)
Sigma_u	0.8307***	(0.0446)	0.5858***	(0.0553)	0.3675***	(0.0358)
Rho	0.173***	(0.0154)	0.0945***	(0.0162)	0.0394***	(0.00738)
Wald Chi squared			312.59***		489.64***	
Observations	246,798		64,317		64,317	
No of country year	178		60		60	
Log Likelihood	-130851		-33525		-33496	
Degrees of freedom	0		28		45	

Table 3. Estimation results, Models 4-6

VARIABLES/Random Slope Var	(4) RS: Orthodox	SE	(5) RS: Islam	SE	(6) RS: Town large	SE
Constant	-2.268	(1.718)	0.793	(1.400)	1.024	(1.681)
Religious affiliation						
Protestant	0.0163	(0.0375)	0.0105	(0.0385)	0.0103	(0.0375)
Islam	0.193***	(0.0527)	0.225***	(0.0812)	0.205***	(0.0517)
Orthodox	-0.219**	(0.106)	-0.164**	(0.0790)	-0.200***	(0.0706)
Hindu	0.110	(0.0899)	0.115	(0.106)	0.108	(0.0898)
Buddhist	0.0190	(0.0958)	-0.0268	(0.100)	0.0129	(0.0959)
Other religions	-0.0641	(0.0609)	-0.0768	(0.0616)	-0.0602	(0.0610)
Atheist	0.0164	(0.0805)	0.0142	(0.0805)	0.00567	(0.0807)
Habitat and Neighbourhood						
Medium Town	-0.0658**	(0.0258)	-0.0653**	(0.0258)	-0.0522**	(0.0265)
Large Town	-0.0651**	(0.0270)	-0.0636**	(0.0270)	-0.0516	(0.0570)
CONTROLS						
Institutional Controls						
Freedom from Corruption	0.0182***	(0.00641)	0.0183***	(0.00676)	0.0179**	(0.00717)
Regime Durability	-0.00400	(0.00300)	0.000361	(0.00301)	0.00100	(0.00296)
Gov. Expenditure	0.0227***	(0.00875)	0.0298***	(0.00891)	0.0326***	(0.00972)
Fractionalisation and Conflict						
Internal Conflict	-0.236***	(0.0664)	-0.233***	(0.0686)	-0.225***	(0.0692)
Fractionalisation	-0.890***	(0.309)	-0.999***	(0.297)	-0.739**	(0.367)
Macroeconomic controls						
GDP Growth	0.00979	(0.0240)	-0.0172	(0.0289)	0.00581	(0.0272)
Income quantile 2	-0.240	(0.263)	0.0869	(0.265)	0.0400	(0.311)
Income quantile 3	-0.120	(0.315)	-0.308	(0.344)	0.00914	(0.319)
Income quantile 4	-0.750***	(0.273)	-0.705**	(0.307)	-0.596*	(0.330)
Income quantile 5	-0.549	(0.429)	-0.999**	(0.425)	-0.860*	(0.451)
Transition	0.332	(0.318)	0.362	(0.342)	0.0700	(0.325)
Individual level controls						
Not religious	-0.00941	(0.0272)	-0.00930	(0.0272)	-0.0106	(0.0272)
Female	-0.138***	(0.0530)	-0.137***	(0.0531)	-0.132**	(0.0531)
Age	0.0880***	(0.0228)	0.0870***	(0.0229)	0.0908***	(0.0229)
Age squared	0.0715	(0.618)	-0.804	(0.711)	-0.730	(0.664)
Married	0.628	(0.532)	-0.0354	(0.587)	8.34e-05	(0.670)
Edu.: sec. or more	0.987	(0.789)	1.911**	(0.927)	1.854**	(0.887)
Edu.:postsec. or more	1.272*	(0.752)	0.0605	(0.752)	-0.0322	(0.816)
In employment	0.000116***	(3.72e-05)	0.000115***	(3.72e-05)	0.000118***	(3.73e-05)
Age x Female	0.00247**	(0.00118)	0.00243**	(0.00118)	0.00235**	(0.00118)
Country level means						
Protestants (mean)	0.462	(0.364)	0.0541	(0.345)	0.392	(0.400)
Muslims (mean)	0.752***	(0.287)			0.362	(0.283)
Orthodox (mean)			0.0723	(0.358)	0.431	(0.390)
Hindu (mean)	0.965	(0.650)	0.827	(0.638)	0.216	(0.626)
Buddhists (mean)	0.497	(0.650)	0.373	(0.670)	0.371	(0.712)
Other religions (mean)	4.377***	(1.054)	3.716***	(1.100)	3.735***	(1.116)
Atheists (mean)	-3.855**	(1.868)	-2.275	(2.101)	-2.859	(2.139)
Non-religious (mean)	1.349**	(0.584)	1.252**	(0.618)	1.319*	(0.673)
Medium towns (mean)	0.301	(0.622)	-0.0199	(0.579)	-0.621	(0.571)
Large towns (mean)	1.066**	(0.454)	0.815**	(0.399)		
Females (mean)	-4.224**	(2.136)	-4.668**	(2.263)	-6.006**	(2.565)
Age (mean)	-0.123***	(0.0250)	-0.123***	(0.0250)	-0.115***	(0.0251)
Married people (mean)	0.296***	(0.0256)	0.296***	(0.0256)	0.295***	(0.0257)
Edu.: sec. or more (mean)	0.0842***	(0.0223)	0.0832***	(0.0223)	0.0839***	(0.0224)
Edu.:postsec. or more (mean)	-0.00919**	(0.00360)	-0.00904**	(0.00360)	-0.00917**	(0.00360)
In employment (mean)	0.0595***	(0.0223)	0.0290	(0.0214)	0.0378	(0.0234)

Var Orthodox (slope)	-1.228***	(0.313)				
Var constant (intercept)	-1.030***	(0.0995)				
Cov (orthodox, constant)	0.599	(0.653)				
Var Islam (slope)			0.111***	(0.047)		
Var cons (intercept)			0.2097***	(0.055)		
Cov(Islam, cons)			-0.122**	(0.054)		
Var Town Large (slope)					0.117***	(0.032)
Var cons (intercept)					0.150***	(0.031)
Cov(town large, cons)					0.009	(0.041)
Observations	64,317		64,317		64,317	
Number of groups	60		60		60	
Log Likelihood	-33498		-33494		-33460	
Degrees of freedom	44		44		44	

2.6.2 Discussion of Key Findings

This analysis provides insights into the effects of factors at three levels of analysis (macro, meso and micro) on generalised trust with particular emphasis on the social context (meso level). Meso level variables reflect immediate social context that is likely to reflect belonging to a certain community and therefore being affected by the norms, expectations as well as dynamics of that community. I propose that religious affiliation and habitat size reflect social context. I have obtained statistically significant results for all hypotheses, which I interpret next.

The effects of religion on trust are somewhat surprising and divergent from existing literature. Contrary to the research to date, which finds negative or no effect of Islam on trusting behaviour, I find a strong and positive one. As argued earlier, in theory, Islam is less hierarchical than Roman Catholicism, which may have a positive effect because there are fewer religious officials able to control the individuals within religious communities. There are also fewer religious authorities who may be able to withdraw sacraments. This is despite the fact that that Islam has more rules and codes of conduct (often very detailed and specific), which may be relatively restrictive seeing that the Qur'an and Hadiths (reports describing the words, actions, or habits of the prophet Muhammad) were written up to 14 centuries ago. Interpretation of the contents of Qur'an is a subject of constant discussion with many Muslims sticking to the original and literary interpretations.

On the other hand, Muslims have often been engaged in trade and travelled across the world which contributed to development of trust. Also, the religion itself encourages business activity, risk taking and risk sharing particularly in relation to business endeavours. However, as indicated by results in random part of the regressions, the impact of the religions varies across countries. For Islam, it has stronger effect in countries with low average levels of trust.

Also, unexpectedly, I do not find a significant difference in levels of trust between Protestants and Roman Catholics, which is contrary to previous research. Protestantism has been argued to have affected economic development by altering values and beliefs to encourage hard work, rational thinking and thrifty living (Delacroix et al. 2001). However, the Protestant doctrine advocates individualism and promotes a belief that social benevolence, while advisable, is immaterial to salvation (Barker & Carman 2000). This may explain lack of effect of Protestantism on individual propensity to trust. The negative results regarding the effect of Orthodox Christianity have been expected as it has been argued to be one of the most hierarchical denominations. Previous studies have also consistently reported negative results of Orthodoxy as compared to Roman Catholicism and other denominations.

With respect to the hypothesis 2, it appears that size of the town one lives in, affects levels of trust. Inhabitants of medium towns are significantly less trusting than citizens of small ones. The effects of living in large cities vary across countries as indicated by significant estimates in the random part of the regressions. The results may give some ground to hypotheses of Milgram (1970), who argued that city dwellers are bombarded with different stimuli that eventually make them numb and less trusting, and House and Wolf (1978) attributed this to higher crime rates in cities. Most likely, that both effects contribute to lower levels of trust. Living in a city comes with a trade-off; one forgoes security that small places provide where communities know their members and are able to communicate with each other. Also, in large cities people are much more mobile and change houses more often, which prevent the formation of trusting relations with the immediate community. The puzzling effect of large cities which significantly bring down the propensity to trust in some countries but not in others may be explained by the fact that usually in large cities, one can find many communities living next to each other. Perhaps the strength of those communities and how tolerant and cooperative they are towards next door ones, determines the level of trust.

With respect to control variables, several interesting findings have emerged. The effect of urbanisation (measured by the average of large cities at the country level) proves to have positive effect on individual trust. This is in opposition to findings of Delhey and Newton (2003) who found no connection. This may be due to the fact that high urbanisation may expose the citizens to a larger number of diverse people. This, in turn, is likely to encourage tolerance as one is exposed to more new things, is likely to travel or commute and have larger network of weak ties. Higher urbanisation in the context of transition economies may mean more developed and less agrarian society.

Also, contrary to what would be expected, countries with higher religious diversity (measured by the percentage of ‘other religions’ on a country level) promote trusting behaviour. This result is

unexpected as high religious diversity may be associated with conflict. On the other hand, higher diversity may mean that there are no dominant groups hence none has got significant power. It also appears that individual level of religiosity does not affect trust; however, countries with higher percentage of not religious people appear to positively affect individual level propensity to trust. This may be because people who are more relaxed about observing religious rituals may be less likely to define themselves along the religious cleavages that may be fuelled if one actively participates in religious rituals and exposes himself to a particular religious community. Also, non-religious people are likely to have given up practicing their religion because they were not happy with some aspects of religiosity such as the influence of religious leaders or the community. Therefore, they may be likely to accept and live by the general moral values instilled by the religion, values that are also common to other faiths but forgo the divisive elements that may be encouraged by actively practicing the religion. The collective effect of such behaviour may create a principled but relatively tolerant and cooperative environment.

This paper also contributes to the literature by showing that ethnolinguistic fractionalisation has a significant, strong and negative effect on propensity to trust. As discussed earlier, the literature to date has found mixed effects. It is worth noting that the measure of fractionalisation used here is as of 1985. The strong negative effect may reflect institutional failures to mitigate the differences within the society. Although ethnic fractionalisation may not be much of a problem especially in developed countries, linguistic fractionalisation may pose greater difficulties. When communities within the same country do not share a common language or when the common language is not well spoken by some groups, there is little chance for communication. Without communication, there can be no trust or social cohesion. Additionally, norms within society are defined by language hence it is imperative that everyone understands the language that the norms are defined in.

Results for the control variables give important policy implications especially in sphere of employment. Being in employment is likely to make one feel included in certain community and may contribute to extending weak ties. When working, individuals are more likely to face diversity hence become more accepting of it. It also teaches transferable skills and knowledge that allows one to feel valuable and opens other possibilities. These results suggest that governments should promote employment and job creation.

This paper is focused on embeddedness of trusting behaviour in the social context, as reflected by the meso level of the theoretical framework. I believe that the significant and strong evidence on the effects of religion and the city size confirm that trusting behaviour is affected by the social context. This reinforces Granovetter's argument that an individual cannot be and should not be analysed as a

rational individual detached from the context he belongs to. Granovetter proposed that individuals are embedded in their social context to reflect a situation where one is not detached or enslaved to the social context but is influenced by it.

2.6.3 Limitations

The limitations of this paper are mainly related to the imperfect measure of generalised trust and the data design. I review the problematic aspects in more detail and propose several solutions. The main flaw of the generalised trust measure is that it is not known how the respondents understood the question 'do you think people can be trusted or you cannot be too careful with people' and who he/she has in mind when asked about trusting 'people'. It may be that 'people' are associated with members of their community not abstract strangers. Further, the fact the WVS is not a panel dataset at individual level makes it difficult to analyse slow changing institutions.

To solve the problem of trust question, some additional clarifying questions could be asked including trust in people from own neighbourhood, community, town, country. Also, by asking whether one would trust others if he/she found himself in another city in their own country or a different country could shed more light on the general trusting attitude of the respondents. Further, laboratory experiments and measuring actual behaviour rather than opinion could add a dimension to the analysis of trust. Some studies measured actual behaviour as willingness to participate in the survey, however, other, situation or discipline specific measures could be developed. For instance, in entrepreneurship and business related disciplines one could look at entering into ventures with non-family or giving customer credit.

I believe, there is much scope for developing trust measures further and making them less endogenous, therefore more attractive to researches who refrain from using 'unclean' measures. However, there must be enough interest and demand in the academic world as it would require modifying current surveys or conducting new ones and conducting lab experiments. This requires funding and will take time. However, informal institutions have been recognised as a major factor affecting human behaviour and economic outcomes, therefore we should see better measures in the near future.

2.7 Conclusions and Policy Recommendations

This chapter explored the determinants of generalised trust at macro (institutional), meso (contextual) and micro (individual) levels with particular focus on the effects of the social context (meso level) as captured by religious affiliation and habitat size. More specifically, I argue that the social context created by larger cities and more hierarchical religions negatively affect individual propensity to trust. I find strong evidence to support for my hypotheses. In particular, I find that Islam, which has been argued in the literature to be less hierarchical than Roman Catholicism, to be positively associated with trusting behaviour and Orthodox Christianity to have a negative effect. The effect of Islam is novel as literature to date found no or negative association. Further, medium and larger cities have been found to negatively affect the likelihood to trust others. This lends evidence to the claims of scholars of urban studies that busy city life, featuring long time spent in commuting, minimal contact with neighbours and lack of time to engage with local and wider community, does not encourage trusting behaviour.

The results also indicate that on the macro level good institutional environment exhibited by less corruption and larger governments have positive effect. Also, as opposed to other studies that used the measure, I find consistent evidence that lower levels of ethnolinguistic fractionalisation seem to encourage trust. Further, the results for three macro level control variables seem to be particularly interesting. Firstly, more religiously diversified countries (higher percentage of religions other than the 6 tested) seem to positively affect propensity to trust among their citizens. Secondly, countries where a higher percentage of people are not religious appear to have an environment encouraging individual trust. Thirdly, more urbanised countries, as captured by higher percentage of large towns, positively affect individual trust. I believe that these factors representing country level context provide interesting insights and should be more thoroughly examined in the future studies.

The results offer interesting implications for policy makers. With respect to immediate social context, it appears that the large cities need more community spirit. Local communities may be strengthened through community projects that should be promoted by local authorities. Also, promoting relationships with neighbours may relieve the pressures and tensions of coping with the large number of stimuli experienced by city dwellers. Further solutions may be provided by architectural designs of city dwellings that encourage neighbours to meet and provide public spaces where the neighbours may ‘bump into’ each other.

The effects of religious denomination may be difficult to counter in a top-down manner, especially because religion and the state are not supposed to mix. However, many countries where Orthodoxy

is a dominant religion are post-communist countries where religious and state authorities are rather close. There may be no political will in those countries to counter the negative effect of Orthodox Christianity on trust in fear of upsetting religious authorities. However, promotion of more secular values and strong institutions may counter the effects of religious denomination and establish a common ground for all citizens that is embedded in the institutional environment. Similar policy has been implemented in Turkey by Mustafa Kemal Ataturk in early- and mid-twentieth century whereby he clearly separated the religion from the state and actively promoted secularisation, education and better institutions. This has led Turkey to an improved and relatively prosperous future.

Further, this paper finds strong and consistent negative effect of ethnolinguistic fractionalisation on trust. It is a clear policy signal suggesting that the policymakers should take the issue seriously. Measures such as language lessons for all newcomers who do not have sufficient command of the local language, the migrants who wish to improve their language and those who rely on state benefits but have little command of the local language, may be undertaken. Norway has recently introduced a compulsory 'Norwegian culture' courses for all new asylum seekers to help them understand cultural differences and facilitate integration into the society. Also, school curriculums should accommodate teaching and celebrating diversity and tolerance.

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2.9 Appendices

Appendix 1. List of countries interviewed in each wave

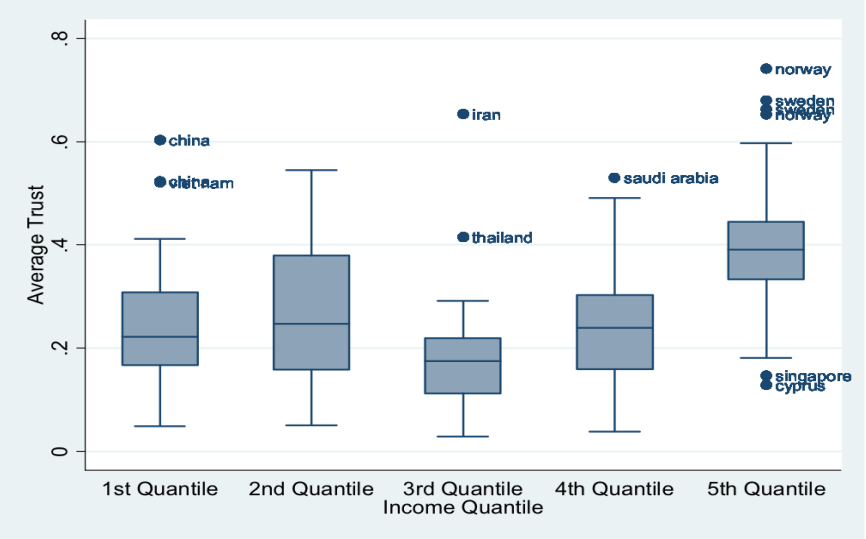
WAVE	COUNTRIES
WAVE 5 (2005-2009)	Albania, Azerbaijan, Andorra, Argentina, Armenia, Australia, Bangladesh, Belarus, Bosnia & Herzegovina, Brazil, Bulgaria, Canada, Chile, China, Colombia, Croatia, Cyprus, Dominican Republic, Egypt, Finland, Georgia, Germany, Hong Kong, Hungary, India, Indonesia, Iran, Israel, Italy, Japan, Jordan, Kyrgyz Republic, Latvia, Lithuania, Macedonia, Malaysia, Mexico, Moldova, New Zealand, Nigeria, Norway, Pakistan, Panama, Peru, Philippines, Poland, Portugal, Puerto Rico, Qatar, Romania, Russia, Saudi Arabia, Serbia & Montenegro, Singapore, Slovenia, South Africa, South Korea, Spain, Sweden, Turkey, Uganda, UK, Ukraine, Uruguay, USA, Venezuela, Vietnam
WAVE 4 (1999-2004)	Albania, Algeria, Argentina, Bangladesh, Bosnia & Herzegovina, Canada, Chile, China, Egypt, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kyrgyz Republic, Macedonia, Mexico, Moldova, Montenegro, Morocco, Nigeria, Pakistan, Peru, Philippines, Puerto Rico, Saudi Arabia, Serbia, Singapore, South Africa, South Korea, Spain, Sweden, Tanzania, Turkey, Uganda, USA, Vietnam, Zimbabwe
WAVE 3 (1995-1998)	Albania, Argentina, Armenia, Australia, Azerbaijan, Bangladesh, Belarus, Bosnia & Herzegovina, Bulgaria, Colombia, Croatia, Czech Republic, Chile, China, Dominican Republic, El Salvador, Estonia, Finland, Georgia, Germany, Hong Kong, Hungary, India, Japan, Latvia, Lithuania, Macedonia, Mexico, Moldova, Montenegro, New Zealand, Nigeria, Norway, Pakistan, Peru, Philippines, Poland, Puerto Rico, Romania, Russia, Serbia, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Turkey, UK, Ukraine, Uruguay, USA, Venezuela,
WAVE 2 (1990-1994)	Argentina, Belarus, Brazil, Czech Republic, Chile, China, India, Japan, Mexico, Nigeria, Poland, Russia, Slovakia, South Africa, South Korea, Spain, Switzerland, Turkey
WAVE 1 (1981-1984)	Argentina, Australia, Finland, Hungary, Japan, Mexico, South Africa, South Korea, Sweden, USA

Appendix 2. Description of the variables used in the empirical model

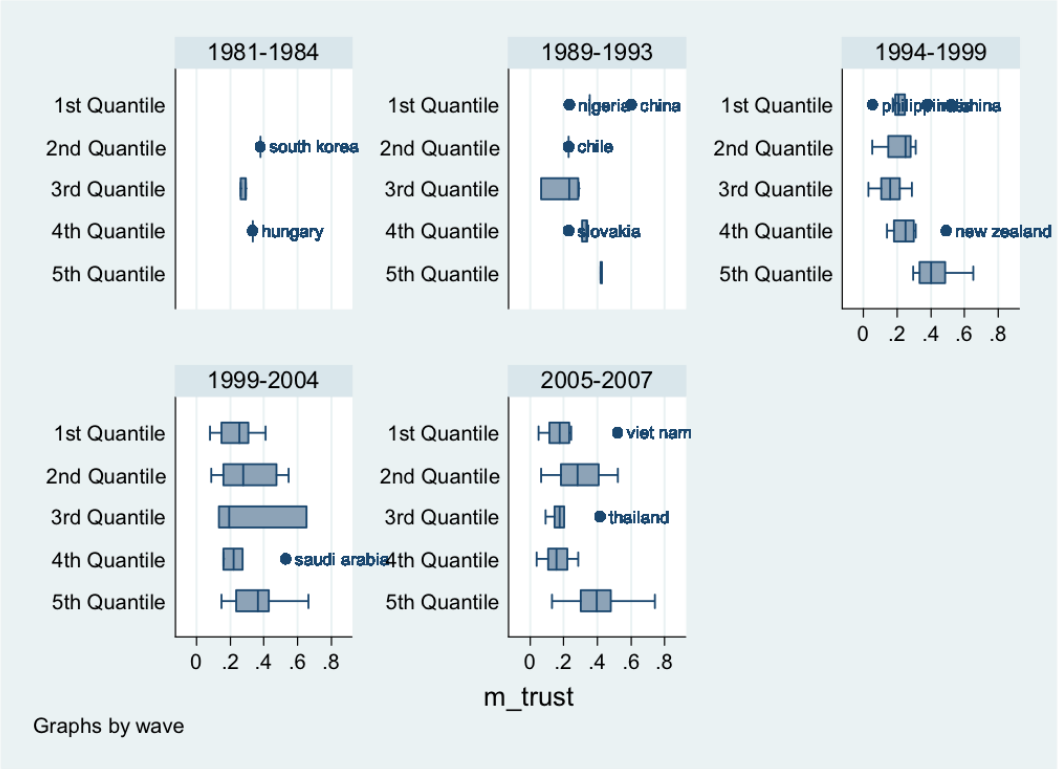
VARIABLES	Source	Definition	Values
Dependent variable			
Generalised trust	WVS	Do you think others can be trusted or you cannot be too careful with people	0-1
Religious affiliation			
Protestant	WVS	WVS question V185: Do you belong to a religion or religious denomination? If yes, which one? Roman Catholic, Protestant, Orthodox, Jew, Muslim, Hindu, Buddhist, Other	0-1
Islam	WVS		0-1
Orthodox	WVS		0-1
Hindu	WVS		0-1
Buddhist	WVS		0-1
Other religions	WVS		0-1
Atheist	WVS		0-1
Habitat and Neighbourhood			
Medium Town	WVS	WVS question V255: Small Town: 1. Under 2,000 2. 2,000 - 5,000 3. 5 - 10,000 4. 10 - 20,000 Medium Town: 5. 20 - 50,000 6. 50 - 100,000 Large Town: 7. 100 - 500,000 8. 500,000 and more	0-1
Large Town			0-1
CONTROLS			
Institutional Controls (lagged by 2 years)			
Freedom from Corruption	Heritage Foundation	Assessment of the freedom from corruption based on the information from following sources: Transparency International, U.S. Department of Commerce, Country Commercial Guide, Economist Intelligence Unit, Country Commerce, Office of the U.S. Trade Representative, National Trade Estimate Report on Foreign Trade Barriers and official government publications of each country	0-1
Regime Durability	Polity IV	Years since the most recent regime change	
Gov. Expenditure	Heritage Foundation	Heritage Foundation index based on government expenses (including consumption and transfers)/GDP, lower spending → higher value. The index has been transformed back to the original score for expenditures according to the following formula $GEi= 100 –\alpha(Expenditures i)2$	0-1
Internal Conflict	The PRS Group	Assessment of political violence in the country and its actual or potential impact on governance. Assessment of the risk of the following: civil war/coup threat, terrorism/political violence and civil disorder	1-4
Fractionalisation	Mauro 1995	The probability that any two citizens will be drawn from a different ethno-linguistic group	0-1
Macroeconomic Controls (lagged by 2 years)			
GDP Growth	World Bank		
Income quantile 2	World Bank	Based on the GDP per capita figures. The values for all country have been sorted from the smallest to the highest and divided into 5 equal portions.	0-1
Income quantile 3	World Bank		0-1
Income quantile 4	World Bank		0-1
Income quantile 5	World Bank		0-1
Transition	EBRD	1 if country is a transition economy, 0 otherwise	0-1
Individual level controls			
Not religious	WVS	WVS question 187: Independently of whether you attend religious services or not, would you say you are: a) A religious person (0), b) Not a religious person (1)	0-1

Female	WVS	WVS question 235: Respondent's sex	0 – male 1 - female
Age	WVS	WVS question 237: You are ____ years old	
Age squared	WVS	n/a	
Married	WVS	WVS question 55: Are you currently: Married (1)	0 – no 1 - yes
Edu.: sec. or more	WVS	WVS question 237: What is the highest educational level that you have attained? 5. Complete secondary school: technical/vocational type 6 Incomplete secondary: university-preparatory type 7 Complete secondary: university-preparatory type	0-1 1 if option 5,6 or 7 selected; 0 otherwise
Edu.:postsec. or more	WVS	WVS question 237: What is the highest educational level that you have attained? 8 Some university-level education, without degree 9 University-level education, with degree	0-1 1 if option8 or 9 selected; 0 otherwise
In employment	WVS	WVS question 241: Are you employed now or not? If yes, about how many hours a week? If more than one job: only for the main job Yes, full time, part time, self-employed (1) No (0)	0-1
Age x Female	WVS	n/a	0-1
Country level means			
Protestants (mean)	WVS	Country-year mean of Protestants	0-1
Muslims (mean)	WVS	Country-year mean of Muslims	0-1
Orthodox (mean)	WVS	Country-year mean of Orthodox	0-1
Hindu (mean)	WVS	Country-year mean of Hindus	0-1
Buddhists (mean)	WVS	Country-year mean of Buddhists	0-1
Other religions (mean)	WVS	Country-year mean of other religions	0-1
Atheists (mean)	WVS	Country-year mean of Atheists	0-1
Non-religious (mean)	WVS	Country-year mean of non-religious people	0-1
Medium towns (mean)	WVS	Country-year mean of medium towns	0-1
Large towns (mean)	WVS	Country-year mean of large towns	0-1
Females (mean)	WVS	Country-year mean of females	0-1
Age (mean)	WVS	Country-year average age	0-1
Married people (mean)	WVS	Country-year mean of married people	0-1
Edu.: sec. or more (mean)	WVS	Country-year mean of people with secondary education	0-1
Edu.:postsec. or more (mean)	WVS	Country-year mean of people with post-secondary education	0-1
In employment (mean)	WVS	Country-year mean of employed people	0-1

Appendix 3. Average trust by income quantile.



Appendix 4. Average trust by income quantile and survey wave.



CHAPTER 3. THE EFFECTS OF WEAK TIE AND STRONG TIE SOCIAL CAPITAL ON OCCUPATIONAL CHOICE IN TRANSITION ECONOMIES

Following the general framework of the thesis outlined in Chapter 1, the paper seeks to investigate how meso level informal institutions affect micro level economic behaviour as reflected in occupational choice. The chapter focuses on a particular subset of informal institutions that reflect the social context. More specifically, the informal institutions considered here pertain to network resources - strong and weak tie social capital as defined by Granovetter (1973).

3.1 Introduction

For most individuals, being in employment is a necessity that affords them day to day existence and pleasures of life. Equally, for governments, having as many people in employment as possible is an important matter, as employed people contribute to personal happiness, and the economy through many channels including taxation, creating employment and innovation (Guellec & Potterie 2001; Wong et al. 2005; Praag & Versloot 2007). Seeing that one spends much of their life working, employment type is an important decision.

Occupational choice literature to date has been largely focused on determinants of selection into wage employment. It often either ignores entrepreneurship or considers it a part of a larger employment category. In response, a new field of research has emerged that investigates all aspects of entrepreneurship (Shane & Venkataraman 2000; Shane 2012). This paper connects these two fields by investigating determinants of selection into wage employment or entrepreneurship. Following the literature on job search theory (Phelps 1970 and Salas-Fumás et al. 2014), occupational choice is defined here as selection into one of the following categories: unemployment, employment for wages, self-employment without employees (sole-traders) and business ownership (self-employment with employees).

I examine the effect of weak and strong tie social capital on occupational choice in 30 countries, defined as transition economies by the European Bank for Reconstruction and Development (EBRD 2015). It is a highly relevant, but under-researched topic, as the countries in question have been burdened with a heritage of informal practices and reliance on closed networks to access resources ranging from basic essentials to jobs. The transition process has brought about high unemployment,

economic hardships and an institutional vacuum forcing individuals to, again, resort to personal connections. Estrin et al. (2013) argued that social capital plays a special role in the conditions of institutional vacuums, such as may emerge under transition. Further, I investigate differences in the effect that these resources have on those who are in different occupational categories, particularly the self-employed and business owners. As the contribution of small and medium firms to the total employment is significant (Appendix1) and linked to higher growth and economic development (Carree & Thurik 2003; Audretsch et al. 2006), their emergence in the economy is highly desirable.

Under the umbrella of Resource Based Theory, I examine how strong and weak ties affect selection into wage employment, self-employment or business ownership as compared to being unemployed. Other resources including human capital and access to technology are also considered. The paper relies on the second wave of the EBRD Life in Transition Survey, the best source available on transition economies offering invaluable insight into the transition process and its effects on ordinary citizens. Further, the paper employs a Hackman selection multilevel modelling to account for a potential sample selection bias and the hierarchical structure of the data whereby individuals are nested within neighbourhoods and then within countries.

The findings suggest that, in transition economies, network ties do not have the importance that entrepreneurship and occupational choice literature suggests. Strong and weak ties seem to affect only those in wage employment and are irrelevant to entrepreneurs. Consistent with RBT, I find a very strong effect of access to technology and human capital on all employment types. I also find that the self-employed significantly differ from the other two categories when effects of all resources are considered. The results are reasonably robust to a variety of controls.

This paper contributes to the wider literature in the following ways. This is the only recent, and most complete, empirical analysis of occupational choice in the transition economies. Further, this is the first analysis of this kind for the entire region. I apply methodology that allows me to control for neighbourhood effects reflecting wider social context. Further, I demonstrate that personal ties, a resource that once was so vital to not only secure jobs and run businesses but also obtain daily essentials, seem to be irrelevant for entrepreneurs. More generally, the findings show that meso level informal institutions are context specific, transform over time and respond to major changes in the political and economic environment. In the context of transition, the findings support the arguments of Cook (2005) and Stiglitz (2000) that during the transition, social capital may decrease but, as countries move towards modern complex societies, a different type of social capital emerges – one supported by the economic system, not vice versa.

3.2 Conceptual Framework

Resource based theory (RBT) has become a key tool for strategic management research. It helps to understand superior firm performance and identifies theoretical conditions for competitive advantage, which include: resource heterogeneity, ex-post limits to competition, imperfect resource mobility and ex ante limits to competition (Peteraf 1993). Barney (1991) argued that it is resources, capabilities, processes, information, knowledge etc., which are valuable, rare, imperfectly imitable and not substitutable, that are sources of competitive advantage. To my knowledge, RBT has never explicitly been applied to the study of occupational choice as it has been primarily viewed as a tool used by firms to assess and achieve competitive advantage. However, in order to gain employment, one needs knowledge, skills, and potentially connections. Individuals also compete with others for jobs in similar ways to which firms compete in the market.

Further, Barney (2001) acknowledged that the RBT failed to integrate creativity and entrepreneurship within its framework. Entrepreneurship is at the core of any business; whether it is through new venture creation or entrepreneurial activity within existing firms, it ensures the competitive advantage. Rangone (1999), who conducted an in-depth analysis of 14 small and medium enterprises (SMEs), identified three capabilities that may help in developing competitive advantage: innovative capabilities, production capability, and market management capability. However, having acknowledged an entrepreneur as a particularly important resource, he undertook no further analysis on the specific entrepreneurial skills and resources that lead to success. Often, and especially in datasets such as LiTS, a firm is one or several individuals therefore the resources and capabilities the firm possesses are equal to those possessed by the firm.

Alvarez and Busenitz (2001) made an attempt to theoretically examine the relationship between resource based theory and entrepreneurship by extending the boundaries of the theory to include the cognitive capabilities of individual entrepreneurs. They investigated two concepts: entrepreneurial recognition and opportunity seeking as well as the process of combining and organising resources. The authors argue that both can be viewed as resources unique to entrepreneurship and examine them in the light of the four conditions of competitive advantage listed above.

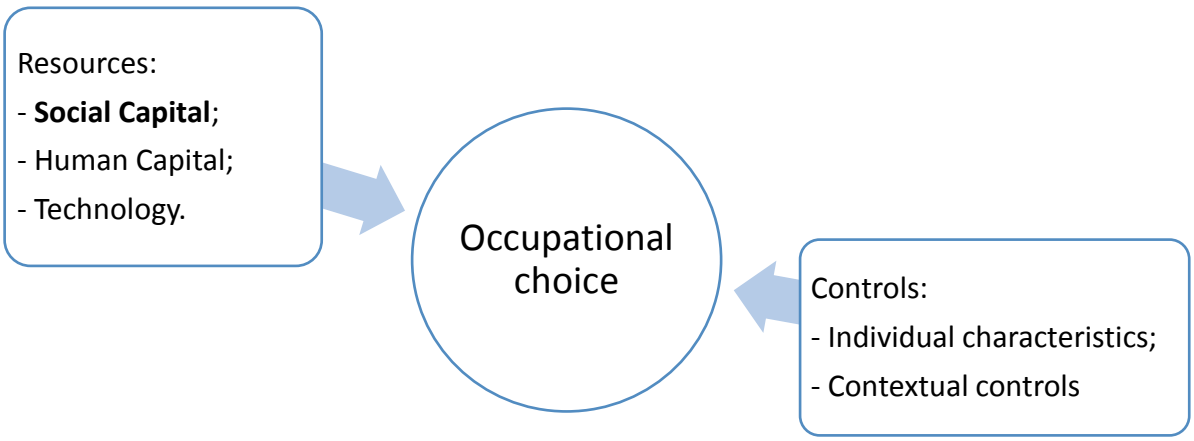
On the other hand, early research in occupational choice put forward a human capital approach to analysing the phenomenon (Becker 1964, Boskin 1974). Accordingly, a worker will choose an occupation or change only if relative returns are the most profitable use of the resources that he/she has (human capital often measured as years of schooling and experience). However, the access to resources and therefore the level of resources held by each worker is conditional on

wealth and the ability to make an investment in him/herself. Correspondingly, resource based theory has long accepted human capital (i.e. human resources) and the knowledge and skills associated with it to be vital for achieving competitive advantage at the firm level (Barney 1991). The wealth factor that conditions human capital achievement is still important, however, with expansion of welfare states and universal schooling it may not be of such importance any more. Instead, I consider social capital to be more important than wealth, although it may also be associated with wealth as the networks and contacts increase with financial resources and family socio-economic status.

While it has been acknowledged and empirically shown that various elements affect occupational choice and particularly a choice to become a business owner, they have largely been considered as separate theories, for instance, cognitive abilities, institutional environment, individual characteristics etc. This paper attempts to exploit the resource based theory and apply it quite liberally to consider a range of resources that individuals draw on when selecting a particular form of employment. Social capital in form of weak and strong ties is a resource of primary interest here; however, human capital and technological resources are also considered.

Figure 6 presents, in a graphical manner, the way various elements that affect occupational choice and in particular the decision to become a business owner are understood.

Figure 6. Conceptual framework



3.3 Literature Review and Hypotheses

3.3.1 Social Capital

The concept and definition of social capital has been discussed in the introduction to this thesis. This chapter relies on the notion of strong and weak tie theory of social capital (Granovetter 1973). Granovetter argued that it is through weak ties that individuals are more likely to find information that may help them gain employment as well as be exposed to new 'fashions and ideas' (Granovetter 1983, p.202) necessary for entrepreneurship. According to this theory, the strength of ties depends on the level, frequency and reciprocity of relationships (Aldrich & Zimmer 1986). In addition, central to this paper is the proposition that social capital is a resource just like physical and human capital. Although it has never been formally acknowledged under Resource Based Theory, social capital researchers have always talked about it in terms of being a resource. All forefathers of the modern concept of social capital referred to it as a resource, which is reflected in the majority of commonly used definitions (see Adler and Kwan 2002 for a summary of definitions).

3.3.1.1 Social Capital in Transition Economies

In order to be able to understand the social capital in transition economies today, one must look into the past and particularly the communist legacy that has shaped the mentality of the generation that grew up under the Soviet regime. However, it is not only the communist regime that has an effect on social capital today; Putnam et al. (1994b) observed that many of the post-communist states had very "weak civic traditions before the advent of Communism" (p. 183). Indeed, prior to power being taken by the Communists, Poland, for example, had been an independent country only for no more than 20 years after a 123 year occupation that ended with the First World War

Similarly, Russia had been under the rule of repressive Tsarist dynasties for generations before communism was brought about. Therefore, the stock of social capital at the start of Communist rule had been limited as continuous struggles against repressive rulers resulted in erosion of social fabric and weak ties in the society. However, each former member of the Soviet Union has its own history, therefore the above assertions may not be generalised too widely.

More recent studies of the effect of the socialist legacy on social capital in the former Soviet Union focus particularly on Russia and several Central and East European countries. Although the Communist regime operated in a similar way in all countries, with directions from the centre, its influence on the social capital in each country may differ given the historical preconditions

(Mihaylova 2005). It has been argued that the destruction of social capital and civil society in those countries was in the interest of the authorities so that any threat to the rulers could be eliminated (Bernhard 1996). Bernhard (1996) argued that Stalinism "destroyed all self-organised forms of intermediate public organisation and replaced them with transmission belt organisations whose purpose was to monitor the society, mobilise it behind the leadership's program, and convey orders from the top downwards" (314). Even though Stalin's successors were less repressive, autonomous public organisations were still repressed and only emerged in periods of regime weakness or crisis (p.315). Those that managed to survive beyond the crisis situation were treated as hostile (e.g. the Catholic Church in Poland) or were integrated into official state structures.

Gibson (2001) argues that communism undermined civil society via atomisation and isolation of citizens. Further, he asserts that isolation led to mistrust, which in turn led to the inability of society to organise itself against the state or otherwise (Bahry & Silver 1987 cited in Gibson 2001). The tool commonly used by the state to achieve those objectives was terror, which was firstly used by the regime to consolidate its power and then to exercise control over people (Dallin & Breslauer 1970). However, as the regime gained legitimacy, it moved to exercising its control via normative power such as administrative and bureaucratic mechanisms (ibid). The mechanism specifically used to destroy civil society was sowing widespread suspicion, which damaged friendship ties and any potential weak ties, leaving individuals isolated and dependent on proven and family ties (Moore 1954).

Atomisation and isolation of society has led to emergence of an 'un-civil' society made up of strong but closed ties and social networks (Gibson 2001). These tend to be "internally cohesive and homogeneous" (p. 53); therefore, restricting any relations with those outside of the network. Nevertheless, a few years after the fall of communism Gibson (2001) measured the extent and closeness of social networks in several Eastern European states. It turned out that Russians had extensive and highly politicised networks potentially capable of shaping social values. This was not the case in Bulgaria or Hungary. Seemingly high scores in terms of social capital did not translate easily into democratisation efforts and institutional reform. Perhaps the 1990s was too early to judge the effects of communism on social capital and the effect of the latter on economic or political outcomes. Therefore, more in depth and subject specific studies on post-communist economies are needed to fully understand the effects of social capital in those countries.

3.3.1.2 Social Capital and Occupational Choice

Empirical evidence on the link between occupational choice and social capital is limited to papers that investigated whether social capital affects entrepreneurship, business performance and helps in finding a (better) job, unemployment duration and wages (Blau & Robins, 1990; Mortensen & Vishwanath, 1994; Flap & Boxman, 2001; Kramarz & Skans, 2007). To my knowledge, there is no specific research that look at the effects of strong and weak tie social capital on the probablility of selection into wage employment, self employment and business ownership as compared to being unemployed. Therefore, I will review several papers that reflect the links between weak and strong tie social capital and particular occupational outcomes and draw my hypotheses based on those.

Recently, Bentolila et al. (2010), using a sample of American and European subjects, found that help of family and friends (referred to as 'contacts' in the paper) helps to reduce unemployment duration by 1-3 months but is associated with wage discount of 2.5 per cent. It has also been found that students networking with fraternity and sorority members (strong ties) and alumni (weak ties) are the most likely to obtain high paying jobs (Marmaros & Sacerdote 2002). Further, one is more likely to have shorter unemployment spells if more members of one's network are employed (Cingano & Rosolia 2012).

There has been a substantial body of research investigating the effect of social capital on entrepreneurial activity and start up performance. Entrepreneurship has been widely acknowledged to be embedded in social structures (Aldrich & Zimmer 1986; Johannisson 1988). Kwon and Arenius (2010) further identified four areas in which main streams of research on the topic developed: opportunity recognition, resource acquisition, creation of new ventures and venture performance. Most studies found positive links between strong and weak tie social capital and the likelihood of becoming an entrepreneur (Arenius & Clercq 2005; Bhagavatula & Elfring 2010; Sanders & Nee 1996; Shane & Cable 2002; Davidsson & Honig 2003; Brüderl & Preisendörfer 1998; Bosma et al. 2004; Batjargal 2003).

Kwon and Arenius (2010) presented a study based on national-level data of social capital on entrepreneurial opportunity perception and weak tie investment. They found that weak ties measured by generalised trust, breadth of formal organisation membership and knowing other entrepreneurs have positive and significant effects on entrepreneurial opportunity perception. Further, Bosma et al. (2004), using a sample of Dutch entrepreneurs, found that weak and strong ties positively affect employment the business founder generates.

Therefore, I present the following hypotheses:

Hypothesis 1a. *Individual strong and weak ties positively affect selection into any form of employment.*

However,

Hypothesis 1b. *The effect of weak and strong ties is more pronounced for the self-employed and employers.*

3.3.2 Controls

Resources: human capital

Human capital can be defined as knowledge and skills obtained through education and training (De La Fuente & Ciccione 2002) that lead to increased cognitive ability as well as higher productivity and efficiency (Davidsson & Honig 2003). Early human capital literature assumed that human capital investments are made early in life when one chooses to pursue further education or on the job training (Polachek 1981). It has often been considered to be a rational investment of current resources for future benefit (Ben-Porath 1967). Traditionally, the research considered the effect of human capital on lifetime wages. It has been assumed that employees with more human capital are more productive than comparable employees (Wright & Hmieleski 2007).

The research on the developed economies suggests that the self-employed tend to have more years of formal education and that higher education increases the probability of becoming self-employed (Robinson & Sexton 1994; Davidsson & Honig 2003). Also, firms of better educated entrepreneurs tend to have higher longevity (Bates 1990). Van der Sluis et al. (2005) performed a meta-analysis of eighty four journal articles, book chapters and working papers related to entrepreneurship in developing economies. He found that educated workers prefer paid employment to entrepreneurship and the result was stronger for women, urban residents and those living in poor countries with low literacy rates and large agricultural sectors. These results are very interesting seeing that 25 per cent of countries under investigation in this paper are classified as lower-middle income (World Bank 2015).

I expect that education will positively affect selection into all employment categories and the effect will be stronger for entrepreneurs.

Resources: access to technology

The studies on the effect of technology on employment for wages and specifically unemployment duration were until recently inconclusive. However, recently Kuhn et al (2012) demonstrated, using the National Longitudinal Survey of Youth data on young US jobseekers during 2005–8, that there is a clear positive reduction in the duration of unemployment among those who used the Internet to look for jobs. More specifically, those who used Internet resources experienced 25 per cent shorter unemployment duration than those who looked offline only. Research on the effect of access to the Internet on the probability of re-employment in Germany and South Korea found that those who used the internet had 7.1 (Germany) and 12.7 (South Korea) percentage point higher chance of finding employment within the next 12 months (Suvankulov et al. 2012). In addition, the average unemployment duration has been lower among internet users in both countries. Further, Beard et al. (2012) showed that, in the US, broadband use at home or at public locations is associated with 50 per cent reduction in the probability that an unemployed person will cease their job search and drop out of the labour force.

Recent evidence focused on the effect of ownership of personal computers on the decision to become an entrepreneur. Fairlie (2006) used the 1997-2001 Computer and Internet Usage Supplements with Outgoing Rotation Group from the U.S. Current Population Survey and found that individual-level home access to a computer had a significant and positive effect on probability of becoming an entrepreneur over the following 12-15 months. The evidence was stronger for females than males and it was shown that those entrepreneurs create a wide variety of ventures.

The evidence from transition economies, particularly in Central and Eastern Europe, suggests that technological development occurred mainly through technology transfer via multinational corporations. However, the transfer has not been uniform and depended largely on institutional development and the relative success of transition understood as market liberalisation and various socio-economic reforms (Tihanyi & Roath 2002). Technology transfer was also conditional on whether a piece of particular technology could be transferred and meaningfully used in a destination country (Radosevic 1999). A wider study of internet access by enterprises in 21 transition countries revealed that infrastructure has an obvious positive effect but also foreign owned enterprises are twice as likely to have internet access (Clarke 2001). Privately owned enterprises as well as those in direct competition with foreign owned ones are more likely than state and employee-owned enterprises to have connection to the internet.

Consequently, it is expected that access to technology will positively affect selection into any employment category.

Other controls

Much research has been devoted to entrepreneurs' psychological and demographic characteristics. Risk attitude is a characteristic that has received much attention. It has been argued that entrepreneurs are more risk tolerant as the very decision to start a business, not knowing whether it will be successful, requires a degree of tolerance of uncertainty and risk. Kihlstrom and Laffont (1979) and Parker (1996) show that the degree of risk aversion and the differences in riskiness of wage employment and self-employment alternatives determine the occupational choice. Other studies to date have shown that indeed, the latent and actual entrepreneurs seem to be risk takers (Stewart & Roth 2001; Grilo & Irigoyen 2006; Freytag & Thurik 2007; Okhomina 2010; Caliendo et al. 2010). Further, evidence indicates that risk tolerance has higher influence in shaping latent (preference for self-employment than wage employment) than actual entrepreneurship in transition economies relative to market economies (Grilo & Thurik 2006).

Most studies compare risk attitudes of entrepreneurs and waged employees and there is little evidence of how risk attitudes affect selection into any occupation as compared to unemployment. Bonin et al. (2007) found that individuals with low willingness to take risks are more likely to work in occupations with low earnings risk. Therefore, it is expected that individuals more tolerant of risk will choose to be employed than unemployed and the effect will be stronger for selection into self-employed and business ownership.

With respect to gender and occupational choice, it has been acknowledged that women are less likely to be in employment and participate in the labour force at all (Florence Jaumotte 2003; Azmat et al. 2004; Bowen & Finegan 2015). Evidence from transition economies suggests that women were disproportionately affected during the transformation (Fodor 1997; Mickiewicz & Bell 2000) and this disproportionate disadvantage of females in the labour market continues to persist in many transition countries (Bicakova 2010). Also, there is ample evidence of female underrepresentation in entrepreneurship in that being male increases probability to become an entrepreneur (Blanchflower & Meyer 1994; Lin et al. 2000; Blanchflower et al. 2001; Verheul et al. 2012). Consistent with the literature, I expect females to be less likely to be in any form of employment.

Finally, the data suggests that younger and older individuals are more likely to be unemployed (ILO 2015b; EBRD 2013; OECD 2016). In addition, the effect of age on self-employment is usually non-linear in that younger and older individuals are less likely to be self-employed (Aidis et al. 2012). Further, the evidence for employment creating entrepreneurs suggests an inverse u-shaped relationship between age and number of employees (Henley 2005; de Kok et al. 2010). Similarly, it is expected that the effect of age will be an inverse u-shape for all employment categories.

3.4 Data and Methodology

3.4.1 Data

To test the hypotheses, EBRD Life in Transition Survey (LiTS) that contains information on individual occupational choice as well as other individual level variables, is used. Individual level variables are averaged at the neighbourhood level where appropriate to control for peer effects and contextual factors.

EBRD's second wave of the Life in Transition Survey was carried out in 2010 in 30 transition economies as defined by the bank - 8 countries from the South-east Europe, 9 countries from the Central Europe and the Baltics, 6 countries from the Eastern Europe and the Caucasus, 5 Countries from Central Asia, Russia and Turkey. A nationally representative sample of approximately 1000 households per country was interviewed in face-to-face interviews giving a total of 29,000 observations. In each household, the head of the household answered questions about the household and expenses and one member of the family was selected using "last birthday" sampling rule to answer questions about Life in Transition (Amir 1969).

The sampling methodology used, a standard procedure employed in comparable surveys in those countries, consisted of 2 stages for most of the countries. The primary sampling units (PSUs)[1] in each country were derived from the local territorial electoral units and Census Enumeration Areas (CEA) while secondary units consisted of households. 50 sampling units per country were selected based on probability proportional to the size. In the second stage, 20 households in each PSU were selected based on equal probability sampling. CEA sizes are likely to differ across countries, however they are usually set to be as compact as possible. In Poland, the criterion of the size of CEA was set to be no more than 500 persons or 200 dwellings (GUS, 2014). The size of the CEA/PSU may also depend on the density of the population and the level of urbanisation. However, PSU may be considered as a close neighbourhood where subjects are relatively homogenous. This may be particularly true in transition economies as communist urban design features many blocks of flats where in one block there may be around 60 flats.

[1] Primary Sampling Units (PSUs) are based on local electoral territorial units. They have limited and well-defined geographical boundaries and are usually kept up to date. Where local electoral territorial units were not available, Census Enumeration Districts or local authorities were used as PSUs (EBRD 2011).

The average weighted response rate was 37.7 per cent, which is comparable to other household surveys conducted in developed countries; however in some countries as few as 8 or 9 (Slovakia and Czech Republic) per cent of respondents were willing to participate in the survey. In Mongolia and Armenia the response rate was over 90 per cent. Low participation rates may indicate lack of understanding about the purpose of such surveys as well as concerns about confidentiality of data collected (EBRD 2011). The threat in statistical terms is that the respondents who refuse to participate may be significantly different from those who cooperate. However, the only information that may identify participants and non-participants is demographic profile. Equally, excessively high response rates such as those in Mongolia and Armenia are worrisome. This may be a sign that the administration of the survey was monitored by authorities or the respondents thought it may have been, therefore they were afraid of refusing to participate.

Further, the gender balance in the survey is skewed towards women, with men representing only 40 per cent of the sample. The lowest proportion of males interviewed was in Estonia (29 per cent) and the highest in Sweden (54 per cent). This may be explained by the fact that, in transition countries, females are more likely to not be employed therefore, more available for interview. Also, in many countries due to migration of males to economically more affluent countries, women become heads of households and the only persons available to be interviewed.

3.4.1.1 Dependent Variable

The dependent variable is unordered polytomous nominal whereby each respondent can select 1 of 4 options of employment categories: unemployed, employed for wages, self-employed or employer. 'Unemployed' is a reference category in the main model presented below and all other options are compared to it. This follows a classic job search theory that argues that all unemployment is voluntary and individuals weigh various options and their returns against unemployment (Phelps 1970; Sullivan 2010; Naudé 2011). Additionally, in countries where social safety nets exist, it is important to consider unemployment as an option against which an individual evaluates other employment choices. Many post-communist countries have established welfare regimes comparable to their Western European counterparts (Fenger 2007).

Although early research has shown that unemployed people may be twice as likely to become self-employed (Evans & Leighton 1990a; Evans & Leighton 1990b), much of the contemporary entrepreneurship literature considers the switch between wage employment and self-employment (Evans & Jovanovic 1989; Aidis et al. 2012; Estrin et al. 2013; Salas-Fumás et al. 2014). This is

because it may be easier for those who have a job to start and finance new venture. Therefore, a model with 'employed for wages' as reference category is tested in the robustness section.

The dependent variable is derived from several questions from the survey that determine whether the respondent is not unemployed, employed for wages, self-employed or an employer (Appendix 2). I excluded the population outside the working age (15-65) and independent farmers, who accounted for 17 per cent of the initial sample. The survey allows the respondent to specify up to 5 jobs and to point out which one is considered to a main job. I have relied only on the data for the main job as the majority of the respondents (approx. 80 per cent) only have one job. In addition, it would pose methodological difficulties if one is employed for wages and self-employed at the same time, hence to avoid double-counting one option per person was allowed – the main job as indicated by the respondent.

Nevertheless, it must be acknowledged that, often, entrepreneurs work for wages while setting up their businesses. The data indicates that there are only 50 entrepreneurs (less than 2 per cent of all entrepreneurs in the sample) in the dataset who are in a wage employment and are self-employed at the same time. Therefore, it is not expected that such a small number of entrepreneurs would affect results significantly even if included as entrepreneurs as opposed to waged employees.

The data for all respondents declaring they are self-employed in their main occupation has been further analysed. Those entrepreneurs that employ one person or more (Appendix 3) were separated and included in a new category of 'employer'. Employers constitute approximately 45% of all self-employed although the vast majority of them employ fewer than 5 people (approx. 80 per cent). The breakdown of the employer category showing the number of people they employ is presented in Table 4.

Table 4. Breakdown of the employer category

No of employees	No of observations	Percentage
Fewer than 5	924	81.55
5-10	121	10.68
More than 10	88	7.77
Total	1,133	100

Further, the Small-Hsiao test for independence of categories indicated that all categories are distinct and significant.

I also would like to acknowledge the imperfect nature of my dependent variable. It captures individuals' current employment rather than the decision they make before entering employment. However, I assume that all respondents are free to change profession, therefore their decision to remain in their current employment amounts to their occupational choice.

The self-employed and business owners

Table 5 presents dependent variable breakdown. The not employed category seems to be quite high seeing that the individuals out of labour force have been excluded from the sample. This indicates that the sample may be skewed towards the unemployed who are more likely to be available for the interview. The figures for the self-employed and employers seem to be in line with expectations. When compared to Global Entrepreneurship Monitor Total Entrepreneurial Activity[2] and established business rates estimates in 2010, the LiTS figures for particular countries (Appendix 4) are relatively close to the TEA. Given that both are population surveys aiming at capturing representative samples of the population, differences can be expected. Also, as described above, the LiTS sample is skewed towards females who are less likely to be business owners. Further, TEA measures both, the nascent entrepreneurship[3] and new business ownership rates, while the LiTS measure is not as precise when it comes to accounting for the age of the enterprise. Principally, the measure used here differs in that employers are distinguished on the basis of the number of people they employ rather than age of the enterprise as in the GEM.

Table 5. Dependent variable breakdown

Employment Status	No of observations	Percentage
Not employed	4,577	21.65
Employed for wages	14,047	66.45
Self-employed	1,382	6.54
Employer	1,133	5.36
Total	**21,139**	**100**

Both the self-employed and employers have been acknowledged to be imperfect measures of entrepreneurship as they do not capture the nascent entrepreneurs that, while working on their new venture idea, may be still employed for wages (Parker 2009). These measures also capture

[2] TEA - percentage of those aged 18-64 who are either a nascent entrepreneur or an owner-manager of a new business

[3] Nascent entrepreneurship - percentage of those aged 18-64 who are actively involved in setting up a business they will own or co-own; this business has not paid salaries, wages, or any other payments to the owners for more than three months

individuals running hobby businesses or necessity entrepreneurs that may not be innovative and therefore would not fit the Schumpeterian theory of entrepreneurship. However, it may be assumed that employers have gone further in terms of committing to their venture. Carree et al. (2002) point out that business owners perform many functions from Schumpeterian innovation to Kirznerian management and day-to-day running of their firms. In fact, many Schumpeterian-style entrepreneurs become managerial business owners once their business has been successfully developed. Further, Kirchhoff (1996) calls the employers the core of the economy as it is them who create most employment in the economy.

The unemployed

The unemployed category include those of working age currently unemployed but looking for a job. This conforms to ILO's definition of unemployment (ILO 2015a). However, this may not give us a true picture of unemployment in post-communist states. The effect of the transition on the labour market in the early years differed between Central and Eastern European countries (CEECs) and the Commonwealth of Independent States (CIS). This was due to the transition strategy and the speed of reforms preferred by governments (see Optimal Speed of Transition in Aghion & Blanchard 1994 and Castanheira & Roland 2000 as well as other institutional characteristics in Boeri & Terrell 2002). As a result of those decisions, in the first 10 years of transition, CEECs experienced U-shaped patterns of GDP and employment while CIS saw an L-shaped pattern of GDP with little change in employment levels.

High unemployment levels often lead to people becoming discouraged and dropping out of the labour market. Mickiewicz & Bell (2000) identified the most vulnerable groups as being the older workers, low-skilled labour and females. They also pointed out the key reasons as a mismatch of skills among workers trained and educated under communism to the new realities of liberalised markets, regional mismatches caused by low labour mobility as well as decrease in child care provision. Therefore, it may be assumed that much of the inactivity in the labour market in transition economies is not due to personal choice but rather circumstances that many workers were not able to overcome and eventually dropped out of the labour force. However, among those outside of the labour force it is impossible to clearly distinguish between those who involuntarily dropped out and would happily take up a job if an opportunity arose and those who do not want to work.

3.4.1.2 Independent Variables

Social Capital

The main independent variables relate to social capital resources available to an individual that may affect his or her occupational choice. As presented above, social capital in the form of strong and weak ties has been deemed to significantly affect career choice and outcomes. The 2010 wave of the Life in Transition Survey contains three measures of ties related to Granovetter's (1973) definition of the strength of ties.

Firstly, membership in organisations is a commonly used measure of weak ties. LiTS asks all respondents whether they are active or passive members of 8 organisations ranging from churches, youth and sports to labour unions and business associations (see Appendix 6 for a complete list of organisations and average membership rates). For the purposes of this paper, memberships in labour unions and business associations were excluded from the estimations due to them being likely to exacerbate the endogeneity problem. I have created a binary variable equal to one if a respondent is an active or passive member of any organisation. The passive and active memberships are correlated at the level of 0.63 ($p<0.01$), however, I felt that even passive members were able to draw on the support available through those organisations. Only about 28 per cent of the respondents from the transition region are members of any organisation. The membership rates across countries vary from around 4 per cent in Armenia and Azerbaijan to above 55 in Belarus and Slovenia. It also looks like higher figures can be observed in more religious countries such as Poland (45 per cent). Membership figures in Armenia seem counterintuitive given the fact that most of the population is deeply religious and belong to a church (Panossian 2002). However, the church membership in Armenia is restricted only to males above 32 years of age while the survey interviewed 65 per cent of females.

It has been argued that memberships in organisations may not be the best measure of network resources, especially in transition economies (Deth 2003; Westlund & Adam 2010).This may be for two reasons; firstly, some of those countries may still have regimes that may be intolerant of associations, seeing a threat in them. This may explain low figures for Azerbaijan. Secondly, the Soviet heritage may not be conductive to creating organisations given that many people were forced to be a part of a bigger 'collective', yet, could not trust their members. This may have contributed to a creation of reliance on family and close friends rather than outside organisations.

Secondly, LiTS offers a variable that allows capturing intensity of network interactions within strong ties. They relate directly to Granvetter's (1973) definition of the amount of time spent on cultivating

these relationships and emotional intensity characterising these ties. This is a very unique measure that does not occur in many other surveys. Each respondent is asked how often he/she meets up with family and friends. Originally, the frequency was expressed in five categories: (1) on most days, (2) once or twice a week, (3) once or twice per month, (4) less often than once a month, and (5) never. The original categories have been collapsed into 2: meeting friends/family often (if 1 or 2) or not often[(if 3, 4 or 5). According to the sample used here, in transition economies 42 per cent of respondents meet family often and 59 per cent meet friends often. Family and friends may exert the strongest influence on occupational choice and they are the first ones entrepreneurs turn to for funding, labour and advice.

I acknowledge that, despite best efforts, there may still remain some endogeneity issues with regards to the social capital variables. Two associations that are most likely to be formed after one selects a certain occupation, namely labour unions and business associations, were excluded. I also believe that church membership is a long term commitment often 'inherited' from parents. When it comes to other associations such as sports or arts, they are related to one's hobbies or talents and therefore unlikely to be affected by occupational status. In terms of interactions with family and friends, I believe that people in transition economies are relatively family oriented. Further, it is common that family, neighbours and friends visit unannounced hence people are more likely to see them often. The only way to eliminate their potential bias would be to instrumentalise them which, unfortunately, is impossible as no suitable instruments exist or other possible social capital variables such as trust or communist party associations are uncorrelated to the measures of interest.

Finally, a measure of generalised trust, which has been used in social surveys around the world asking: "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people". This is a more general measure of weak tie social capital that demonstrates a readiness to assume that others can be trusted or a general attitude towards others. Although it does not explicitly measure the ties or networks, it tells a great deal about how easily an individual can create weak ties. Distrustful individuals will not readily connect with people from outside their clique.

In this sample, of 35 per cent of respondents indicated that they are willing to trust others. However, when looking at scores for particular countries (Appendix 5), the results are rather surprising as countries that usually are expected to score low on generalised trust report very high scores. Among the highest trustors are Kazakhstan, Russia, Ukraine and Uzbekistan all having above 48 per cent of trust. The least trusting country is Armenia (8 per cent) followed by Turkey (17 per cent). A possible explanation for the unexpected results of the CIS countries may be that the question was

misunderstood, particularly by the elderly and those living in rural or otherwise tight-knit communities, where 'others' are members of that community and hence ones that are trusted. Further, it is possible that in those countries the administration of the survey has been monitored by the authorities therefore the respondents were reluctant to answer the questions honestly. Due to this, the generalised trust measure is excluded from the main regressions. However, it is tested in the robustness section.

3.4.1.3 Control Variables

Human Capital

The human capital variable is a simple binary variable equal to 1 if the respondent has a bachelor's degree or higher. As LiTS does not ask any specific questions about work experience it is impossible to capture this valuable resource. However, long working experience in post-communist reality may have a negative effect as those who spent much time working under the communist regime may have different expectations and working practices and may find it very difficult to adjust to free market requirements. This is partly captured by respondent's age which I control for.

When it comes to the age profile of transition economies, the average age by occupational category is highest (41.8) for the employers but only marginally higher than for the self-employed (41). The youngest are the unemployed (36.5), around 5 years younger than those working for themselves. This points towards z potential youth unemployment problem, which is beyond the scope of this paper. Interestingly though, the average entrepreneur was born and schooled in the communist period.

Access to technology

In a household roster, the survey asks the head of the household to answer questions that are commonly used in wealth indices. These include ownership of a car, a computer, a bank account, access to internet etc. Out of those, items that reflect the technological resources that a household has access to were selected. PSU-averages of the index variable are used in the estimations as at individual level they may pose a threat of reverse causality. With PSUs being relatively small, the PSU-averaged technological access measures the access at the level of neighbourhoods and communities. It also indirectly measures local infrastructure and provides valuable information about disparities across regions.

A scale based on the components available in the wealth measures has been created. The scale contains three components; household ownership of a computer, a mobile phone and access to the internet. The Cronbach-Alpha test confirmed the scale reliability of technological scale to be 0.74. On the technological scale Uzbekistan, Tajikistan and Kyrgyzstan scored the lowest while the Czech Republic followed by Slovenia and Slovakia were the highest. The results have hardly changed at all since 2006.

Other controls

Following the literature, the paper controls for individual level attitudes to risk, gender and age. Positive attitude to risk makes an individual more likely to pursue ventures such as self-employment and small business. The original 10-point risk scale has been converted into a binary variable whereby respondents who indicate their willingness to take risks to be 6 or above are coded as risk takers. With respect to age, positive but non-linear relationships are expected. When disaggregated by country, respondents' average age is around 48 but Estonia and Hungary have the oldest sample (52 and 53 respectively) while Kosovo and Mongolia the youngest (36 and 37 respectively). Finally, the research to date suggests that females are less likely to pursue any form of employment. In the sample, approximately 60 per cent of people are females although in some countries the number of females in the sample is closer to 70 per cent (Russia, Ukraine, Estonia, Georgia). PSU-level averages of all individual level variables are included in order to control for the neighbourhood effects.

Definitions and data sources are summarised in Appendix 7

3.4.2 Methodology

This study potentially suffers from sample selection bias as it naturally considers those inside the labour force leaving out respondents who were outside the labour force. To correct for that, following Heckman (1979), a selection equation (Appendix 8) is calculated first to subsequently generate values for Inverse Mill's ratio for each observation in the sample. These are then used in final equations to correct sample selection bias. Heckman's selection equation requires that a unique selection variable, which does not appear in the final equation, is provided. Based on the literature on labour force participation, unemployment duration and determinants of employment (Badinger & Url 2002; Foley 1997; Jaumotte 2003; Kupets 2006), regional demand for labour measured by PSU-level unemployment seems to be most appropriate.

To test the hypotheses multilevel modelling is used, as it suits the structure of the data best. As detailed above, the sampling technique employed in LiTS is 2-stage; first, in each country 50 PSUs are selected and then in each PSU approximately 20 households. Therefore, the data has hierarchical structure whereby individuals represent level one, PSUs level two and countries level three. Because of the design of the survey, individuals are not randomly distributed across and within countries, rather, individuals living in the same neighbourhoods are more likely to exhibit similar characteristics or patterns of behaviour. I have decided to pursue a 2-level model with individuals representing level 1 and PSUs level 2. There is little difference in the results between 2 and 3-level models while the computational time for the former is much more reasonable. A 3-level model is included as a robustness check.

The design of the data has obvious implications on regression models as observations can no longer be assumed to be independent, i.e. the part of the error associated with estimating individual's occupational choice is systematically influenced by neighbourhood and country factors (Estrin et al. 2013). OLS regression models fail to account for non-independence of error terms producing unreliable coefficients and standard errors (Rabe-Hesketh et al. 2005). This chapter employs a generalised linear mixed model with latent variables (gllamm) model which relaxes the 'independence from irrelevant alternatives' (IIA) assumption. Even though the model with three categories did not violate the assumption as indicated by the Small-Hsiao test, the design of the data suggests 'additional dependence between units within clusters' (Skrondal & Rabe-Hesketh 2003, p. 268).

Following Estrin et al. (2013), the suitability of multilevel modelling to be applied in to the data has been statistically tested. I found evidence for the significance of regional effects with psu level variance being statistically significant at $p<0.001$. An empty 2-level model has been estimated and residual intraclass coefficient (ICC1) calculated. The results suggest that 3.5 per cent of the variation in the occupational choice resides at neighbourhood level. An acceptable level of variation that justifies the use of multilevel model is above 3 per cent according to Bliese (2000). Next, I ran a basic model with individual and neighbourhood effects and the intraclass correlation dropped to 1.35 per cent at the PSU level. I also examined correlation matrix and found no strong correlations between the variables tested (Table 6).

Finally, after the model had been estimated a Wald test was performed to check simultaneous equality of chosen coefficients between various occupational categories. The test was performed for all coefficients for each unique combination of categories: wage employee and self-employed, wage employee and employer and self-employed. The null hypothesis tested is that the difference of two

coefficients for the same variable is equal to 0. The results show the significance level of the p-value, which is compared to standard critical values (0.1, 0.05, 0.01). If the result is insignificant, the effect of particular variable on the two tested employment categories can be thought to be the same. This is irrespective of whether the coefficient itself is significant or not.

Table 6. Correlation matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Member of any organisation	1																
2. Member of any org. (PSU av.)	0.1016	1															
3. Meet family often	-0.022	0.0041	1														
4. Meet family (PSU av.)	-0.003	0.0703	0.1402	1													
5. Meet friends often	0.0258	0.0048	0.2712	0.0686	1												
6. Meet friends (PSU av.)	-0.0021	0.0546	0.0693	0.5072	0.1351	1											
7. Access to tech (PSU av.)	0.0309	0.5075	0.0241	0.2502	0.0307	0.1791	1										
8. Risk attitude	0.0352	0.0007	0.0119	-0.0024	0.0928	0.0066	-0.0016	1									
9. Risk attitude (PSU av.)	-0.0074	0.1312	0.0108	0.053	-0.0029	0.0239	0.1962	0.1236	1								
10. Higher education	0.0646	-0.0011	-0.022	-0.0273	-0.031	-0.0152	-0.0154	0.0692	-0.0096	1							
11. Higher edu. (PSU av.)	0.0224	0.2319	-0.0165	-0.1646	-0.026	-0.161	0.1624	0.0063	0.0729	0.1036	1						
12. Gender	-0.0003	0.0358	-0.0107	0.026	-0.0777	0.017	0.0288	-0.1038	0.0029	0.061	0.0038	1					
13. Gender (PSU av.)	-0.0058	0.0056	0.0175	0.1206	0.0097	0.0889	-0.1172	0.005	-0.0147	0.02	0.0537	0.0734	1				
14. Age	0.0019	0.0102	-0.0544	-0.0024	-0.1426	-0.0247	0.0082	-0.1341	-0.0223	-0.0249	-0.0067	0.0271	0.0026	1			
15. Age squared	0.0032	0.009	-0.0516	-0.0014	-0.1344	-0.022	0.0033	-0.1268	-0.0202	-0.023	-0.0058	0.0203	0.0034	0.9847	1		
16. Age (PSU average)	0.0066	0.2426	-0.0062	0.0298	-0.018	-0.1549	-0.0492	-0.0268	-0.1911	-0.0149	-0.0737	0.0275	0.0682	0.0741	0.072	1	
17. IMR	-0.0437	-0.0434	0.0701	0.0426	-0.0356	0.0364	-0.0578	-0.0937	-0.0227	-0.1413	-0.0249	0.159	0.0188	0.3672	0.504	0.0073	1

3.4.2.1 The Model

The dependent variable is a polytomous nominal with no structure to the measurement scale. Therefore, the model measures probabilities that either category is selected. Multinomial logit models are best suited for this type of response. The simplest model that can be applied to polytomous choice data is multinomial logistic regression that builds directly on a binary logit model. Based on Rabe-Hasketh et al. (2004) multinomial logit models can be defined by specifying a 'linear predictor'

$$V_i^a, a = 1, \dots, A$$

Where a signifies A possible categories of the polytomous response variable.

The multinomial probability of response category *f* (the probability that f is chosen) for person *i* is:

$$Pr(i) = \frac{exp(V_i^f)}{\sum_{a=1}^{A} exp(V_i^a)}$$

This can also be considered by assuming that there is an unobserved 'utility' U_i^a associated with each response and the alternative with the highest utility gets selected. The utility can be modelled as follows:

$$U_i^a = V_i^a + \epsilon_i^a$$

Alternative a is selected if:

$$U_i^f > U_i^g for\ all\ g \neq f$$

or

$$U_i^f - U_i^g = V_i^f - V_i^g + (\epsilon_i^f - \epsilon_i^g) > 0$$

For person-specific covariates, a different g^a vector is estimated for each alternative except for the reference alternative:

$$V_i^a = g^{a\prime} x_i$$

I use generalised linear mixed model with latent variables (gllamm) model to estimate equations as it allows multilevel structure accounting for the design of the data. The program 'implements maximum likelihood estimation and empirical Bayes prediction' (Skrondal & Rabe-Hesketh 2003). It also allows estimating random slope and coefficient effects, i.e. it accounts for unobserved heterogeneity between clusters for the former and unobserved heterogeneity between units within

clusters for the latter. The linear predictor for a simple 2-level multinomial logit with random intercepts takes following form:

$$V_{ij}^{a} = g_0^a + g_1^a x_{ij} + \gamma_j^q$$

All effects are set to 0 for a = 1 making it an alternative category. The random effects for alternative 2 and 3 (γ_j^2 and γ_j^3) are assumed to be correlated.

The final multilevel model for occupational choice for individual i in psu j:

$$\left[\frac{Pr(Employed_{ij}=1)}{1-Pr(Employed_{ij}=1)}\right](OccupationalChoice_{ij}) = log$$

$$g_{0j} + g_{1j}Memberany_{ij} + g_{2j}Meetfamilyoften_{ij} + g_{3j}Meetfriendsoften_{ij} + g_{4j}Riskattitude_{ij} + g_{5j}Highereducation_{ij} + g_{6j}Gender_{ij} + g_{7j}Age_{ij} + g_{8j}Agesquared_{ij} + r_{ij}$$

The model is repeated for alternative 2 – self-employed and 3 - employer

Random intercept

$$g_{0j} = \gamma_{00} + \gamma_{01}Member\ any_j + g_{02}Meet\ family\ often_j + g_{03}Meet\ friends\ often_j + \gamma_{03}Access\ to\ technology_j + g_{04}Risk\ attitude_j + g_{05}Higher\ education_j + g_{06}Gender_j + g_{07}Age_j + u_{0j}$$

$OccupationalChoice_{ij}$ is a measure of occupational choice in all outcome models. The models have similar structure; in the equation 1, the occupational choice is a function of individual level resources: social capital human capital and access to technology as well as some controls and random error. Equation 2 specifies random intercept as a function of common intercept (γ_{00}) and a linear component of neighbourhood averages of all individual level variables.

3.5 Results and Discussion

3.5.1 Empirical Results

Table 7 presents the results of the estimation stated above. It shows results for employed for wages, self-employed and employers with 'unemployed' being the reference category. I included the basic 2-level specification and performed a Wald test to check that the coefficients for different occupational categories are significantly different. As discussed in the section 3.4.2, selection equation was calculated first (Appendix 8) in order to generate Inverse Mill's Ratio (IMR) values for each observation. The effect of the IMR is reported in the estimation table.

Strong and weak ties

I find interesting results pertaining to hypotheses 1a and b. It appears that, at individual level, membership in organisations has a positive effect only on those employed for wages. Further, it seems one is marginally less likely to be employed for wages than unemployed if they meet their friends often. There is no difference in the frequency of interaction with friends and family between the unemployed (reference category) and the self-employed and employers as indicated by insignificant coefficients. Further, neither weak not strong ties seem to affect the two forms of self-employment tested. The test for the differences in coefficients suggests that there are significant differences between the effects of those variables on particular occupational categories.

Controls: Human capital and access to technological resources

Human capital exerts very strong influence on all occupational categories in that highly educated people are more likely to be in any form of employment rather than unemployed. The coefficients are large, positive and significant across all occupational choices. However, the magnitude of the coefficients is highest for those employed for wages and employers. Further, the Wald test suggests that the coefficients for these two categories are not significantly different.

Technological resources, measured at the neighbourhood level, are very important for all occupational categories. The coefficient is the highest for employees and lowest for employers but there does not seem to be any statistical difference between the categories. This is in opposition to what was expected.

Other controls

All individual level control variables are highly significant in the specification. Their signs are in line with expectations. There is a very strong effect on attitudes to risk on all forms of employment but with significant differences between the categories. As expected, employers are least risk averse and employees most with the self-employed being in the middle. Gender differences are particularly pronounced; while females tend to have lower employment rates in general, they are even less likely to become self-employed or take their venture further and become business owners. Finally, age matters for all categories although the effect is non-linear (coefficient for squared term of age is also significant), which is in line with the expectations. With age, one gains knowledge and experience that helps to gain employment or run one's own business. However, above a certain age, one's experience and education may become obsolete.

Further, the Inverse Mill's Ratio is positive and highly significant for all categories, which suggests that the error terms in the selection and primary equations are positively correlated. Therefore, the

unobserved factors that make labour force participation more likely tend to be associated with higher likelihood of selection into each of the occupational categories. These results substantiate the use of the selection equation.

Table 7. Results; Model 7

	Model 7: All Transition Economies Level 2: PSU Reference Category: Unemployed								
	Employed for wages		Diff. EfW-SE	Self-employed		Diff. SE-Emp	Employer		Diff. EfW-Emp
VARIABLES	Odds Ratio	St Err		Odds Ratio	St Err		Odds Ratio	St Err	
Resources									
Member of any organisation	1.130***	(0.0522)	***	0.892	(0.0756)	**	1.124	(0.100)	
Meet family often	0.957	(0.0400)		0.949	(0.0691)		0.932	(0.0757)	
Meet friends often	0.927*	(0.0392)		1.035	(0.0780)		0.894	(0.0738)	
Controls: other resources									
Higher education	3.838***	(0.333)	***	2.244***	(0.282)	***	3.499***	(0.464)	
Access to tech (PSU av.)	302.5***	(164.7)		129.8***	(96.88)		109.1***	(91.19)	
Other controls									
Risk attitude	1.222***	(0.0573)	***	1.869***	(0.143)	***	2.772***	(0.240)	***
Gender	0.645***	(0.0478)	***	0.340***	(0.0369)		0.348***	(0.0417)	***
Age	1.233***	(0.0325)		1.284***	(0.0500)		1.354***	(0.0593)	**
Age squared	0.998***	(0.000340)		0.997***	(0.000496)		0.996***	(0.000558)	**
Member of any org. (PSU average)	0.202***	(0.108)		0.236*	(0.174)	*	0.0469***	(0.0388)	**
Meet family (PSU av.)	2.036	(1.046)	*	5.589**	(3.970)		3.674	(2.935)	
Meet friends (PSU av.)	1.428	(0.791)		2.583	(1.994)		1.115	(0.938)	
Higher edu. (PSU av.)	0.620	(0.421)		0.454	(0.436)		1.976	(2.030)	
Risk attitude (PSU av.)	1.053	(0.548)		1.961	(1.432)		0.886	(0.730)	
Gender (PSU av.)	1.219	(0.934)		0.549	(0.595)		1.587	(1.908)	
Age (PSU av.)	1.080***	(0.0182)		1.057**	(0.0247)		1.074***	(0.0284)	
IMR	2.689***	(0.539)	**	4.471***	(1.189)		4.473***	(1.419)	*
Constant	2.41e-05***	(3.05e-05)		3.05e-06***	(5.39e-06)		5.82e-07***	(1.16e-06)	
Variance (PSU)	1.237***	(0.0455)							

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

3.5.2 Discussion

This section aims at discussing the results presented above. Given the unique environment and the magnitude of transformations that took place in the transition countries, I will aim to interpret the results, bearing the history in mind. I believe that the communist legacy and the transition process affected the labour market in those countries. Transition economies are known to have relatively low levels of entrepreneurship given their level of development (Aidis et al. 2008), I hope this

analysis will shed more light on the resources that encourage and hinder different occupational choices.

Social capital and occupational choice

As discussed above, social capital has been considered according the typology of strong and weak ties. Family and friends are the strongest ties one may have as they are likely to be highly homogenous and closed. I have therefore considered the frequency of interactions with these two groups as an important indicator of one's strong ties. However, the results indicate that frequent contact with either group is unlikely to provide one with resources necessary to gain and keep employment or run one's own business. Clearly, these ties do not carry enough new information about opportunities as well as knowledge, advice and financial resources to significantly affect members' occupational outcomes. This may be due to the fact that those circles may be relatively small and homogenous or because most people found themselves in difficult situations as savings were wiped out by inflation, jobs were no longer secure and most lacked skills necessary to operate in a free market economy.

When it comes to labour market practises, before transition, employment was subsidised by the state and enterprises had to offer a place to whomever sought it. This changed in the early 1990s, when employment in many countries fell dramatically as a result of market liberalisation and output contraction (see Mickiewicz & Bell 2000 for more details). Full employment and job on demand were no longer possible or viable and with high unemployment and uncertainty, social capital, again, became vital to secure jobs. At the time, few people had suitable qualifications and experience to operate in a free market economy, therefore jobs were not necessarily being allocated to the most suitable individuals. This is when help from family and friends was most needed.

I believe that this result, although not statistically significant, is very important as it shows that economies in transition have moved on from the 'transition inflicted' model of interactions. This may be more efficient for firms as they have potentially larger pools of candidates to choose from and is fairer for the candidates as they have a more equal chance to compete for a position. Stiglitz (2000) also argued that as political and economic reforms are implemented, social capital may diminish but eventually a different type of social capital emerges, one 'in which social relations are embedded in economic system, rather than vice versa' (p.59). However, with respect to self-employment categories, lack of reliance on strong ties may not be a positive phenomenon largely because entrepreneurs around the world tend to rely on family and friends especially in the early stages of their career and when their enterprises are small (Beck et al. 2008; Korosteleva & Mickiewicz 2011).

Unfortunately, the data does not provide any information on the age of the enterprise which could explain the insignificant result.

When it comes to weak ties (membership in organisations), the evidence shows that they have a positive impact only on those employed for wages. Indeed, employees need access to networks to find out about requirements in various sectors and industries as well as new job openings. This also confirms previous research claiming that personal contacts help to secure a position (Bentolila et al. 2010; Kramarz & Skans 2007). However, the weak ties do not seem to carry enough new information, knowledge and resources to affect selection into entrepreneurship. This may be because such organisations are too localised.

The results indicate that transition economies are in the process of moving towards modern complex society (Cook 2005). This is manifested by, among other things, the move from close-knit communities towards networks. However, my findings suggest that the wider networks have not emerged yet or their effects are yet to be realised.

Human capital and occupational choice

The results on education and occupational choice suggest that highly educated individuals are more likely to be in any form of employment than be unemployed. It was expected that the coefficient for the higher education would be larger for the self-employed people and employers as suggested in the literature. However, the results are stronger for waged employees and employers. This may support findings of Van der Sluis et al. (2005) that highly educated people may prefer paid employment. Parker (2009) also suggested that employers are more willing to pay more for talent, which may result in preference for paid employment. Although wages are not studied here due to lack of data, previous research suggests that entrepreneurs, on average, earn less (Hamilton 2000) which may affect preferences.

Interestingly, the results are significantly different for employees and self-employed and the self-employed and employers but not between the employers and employees. This indicates that, on average, employees and employers tend to have similar levels of education while the self-employed are slightly less educated. This means that in transitional societies there is a space for the highly educated to join the business community. This is potentially positive for their economies as highly educated entrepreneurs are more likely to create enterprises that are more successful and therefore add value (Solomon & Dickson 2008; Barringer et al. 2005; Dakhli & Clercq 2004). On the other hand, the result for the self-employed indicates that they may be necessity driven.

Access to technology

Access to technology has been shown to matter across all occupational categories as compared to unemployed. Furthermore, it seems to matter equally highly for all three categories as indicated by the equality of coefficients test. The results hold even if neighbourhood wealth is controlled for (available upon request). This confirms that today technology plays a major role as it brings job seekers and employers closer as well as allows for a bigger pool of potential candidates. A larger pool, in turn, allows employers to find a candidate that better matches the requirements and therefore may have a positive effect on their businesses. This, on the other hand, introduces competition as jobs may no longer be confined to the local level. Access to technology is measured as a composite index of ownership of computer, mobile phone and access to internet at the neighbourhood level. These pretty much capture how connected the respondents' neighbourhoods are and whether they have access to information and learning. It seems like transition economies have embraced this and there are clear benefits from the access to technology.

For the self-employed and employers, technology also makes running the business much easier as many processes can be automated and programmed. This saves time put into administrative tasks and allows more effort to be put into sales and innovation. Further, some countries are moving to one-stop shop solutions and online based taxation filing systems, licence applications, registrations etc. It further eases the administrative constraints, saving time and money for businesses. However, the gains from technology are not only on the management and administrative fronts. Expanding markets, sourcing materials and hiring qualified personnel has all been made easier, particularly through the internet.

To sum up the results on resources, there seems to be a significant difference between those employed for wages and the self-employed as well as the self-employed and employers but not between the employers and wage employees. This indicates that those with high resource endowments choose higher return options and become business owners or work for others. The latter is in line with Parker's (2008) argument about employers being willing to pay more for the talent. The fact that individuals with lower resource endowments opt for self-employment points to the fact that many do so out of necessity as they are unable to find paid employment.

Recent anecdotal evidence suggests that dependent forms of self-employment also called quasi-subordinate employment are on the rise across transition economies. Research on dependent forms of self-employment indicated that firms use this form of contracting out to increase labour flexibility

and ‘evade’ employment protection legislation (Boheim & Muehlberger 2006; Román et al. 2011). It allows firms to save costs through eliminating the need to pay taxes, insurance, vacation and sick pay etc. (Parker 2009; Pedersini & Coletto 2009; Kitching 2014). These results may also indicate the existence of necessity entrepreneurship, which to some extent can be found everywhere. However, necessity entrepreneurship does not contribute to the economy so policymakers should take action to reduce it and help people achieve the resources necessary to take the venture further and become employers or gain paid employment. However, this is not to say that sole traders should not exist, and some people may prefer not to expand their business while some occupations require it, for instance, lawyers.

Other controls

At individual level, as expected, risk acceptance is significantly higher among business owners. This confirms the theory that entrepreneurs have higher tolerance to risk. Taking risks when it comes to occupational choices is inevitable as, at the very basic level, one needs to decide whether to enter the labour force at all and what occupation to select. The bigger challenge comes when faced with a business opportunity, as individual needs to decide whether the potential returns are higher than the risks and assess the magnitude of risk involved. Further, when running a business the entrepreneur is almost continuously faced with risks, which increase when he/she wants to expand, invest, hire or fire employees etc.

The results also indicate that females are less likely to be in employment or entrepreneurship, which confirms the findings of other studies on the topic. Females are not only more risk averse, but they are also more critical and hard on themselves, especially when it comes to entrepreneurship (Parker 2009), therefore a strong consistent negative effect has been found. Culturally, women have been expected to be homemakers and caregivers, which restricted employment opportunities and possibilities. During the communism, women were expected to join the labour force on similar terms as men and, although there was occupational segregation, there was little discrimination. However, during the transition, in countries where employment levels decreased dramatically, females were the first to take early retirement or drop out of the labour force (Mickiewicz & Bell 2000). In terms of female entrepreneurship in transition economies, Aidis et al. (2007) also pointed out that it is important to recognise diversity within the region. The authors studied female entrepreneurs in Lithuania and Ukraine and found that the entrepreneurship levels are affected by a combination of economic, institutional and transitional factors. They also point out a number of informal institutions including patriarchal norms and values and the Soviet legacy of gender relations that restrict access to resources and opportunities. A recent study of microcredit in Mongolia by Attanasio et al. (2015)

found that provision of joint liability microcredit targeted at women increased female entrepreneurship.

Finally, the effect of age is positive but nonlinear with little difference between employment categories. The only significant difference exists between the employees who tend to be younger than the employers. Across the world, the age profile of entrepreneurs is similar in that they tend to be older. This means that they often have more experience and made a switch from paid employment into self-employment. Also, given that pre-1990s the concept of private enterprise was almost non-existent, there was suppressed stock of entrepreneurial talent ready to take the opportunity when it arose.

I also obtained a negative and significant result for the neighbourhood-level membership in associations on all forms of employment, which suggests that in neighbourhoods where people belong to various organisations there tends to be more unemployment. This result may be endogenous as it is likely that in poorer and underdeveloped areas there are more organisations such as churches and charitable organisations. On the other hand, in neighbourhoods with more family interactions, individuals are more likely to select entrepreneurship. It may be that a lot of strong ties restrict employment opportunities as jobs are allocated to family members hence individuals are forced into self-employment out of necessity. On the other hand, in those areas, there may be more family support for individuals who want to work for themselves.

3.6 Robustness Checks

I have run several alternative specifications to check robustness of the results and add several dimensions that were often pointed out in discussions. For each new model a separate selection equation and new Inverse Mill's Ratio have been calculated.

Model with wage employment as reference category

As mentioned earlier, entrepreneurship literature is often interested in transfer from wage employment to entrepreneurship, ignoring the unemployed. This may be because the move from unemployment into any type of employment may reflect information about one's employability. However, theoretical and empirical evidence suggests that unemployment may, in fact, be a choice. Further, the move from unemployment to self-employment seems to be quite possible (Evans & Leighton 1990a) especially when one considers necessity entrepreneurship.

The results, presented in Table 8 below, reflect the main findings as captured by the test for difference in coefficients. More specifically, if the difference between coefficients for a particular variable (for instance membership in organisations) is significant between particular employment categories in the main model, the coefficients for that variable, in the model with wage employment as base category, are significant. For instance, in the main model, the difference in coefficients for membership in organisations between wage employees and self-employed is significant. Therefore, in the result shown below, the coefficient for membership for the self-employed category is significant. Further, the signs and magnitudes of variables are in line with the main findings.

Table 8. 2-level model with wage employment as reference category

	Model 8: All transition Economies Level 2: PSU Reference category: employed for wages				
	Self-employed		**Diff. SE-Emp**	**Employer**	
VARIABLES	Odds Ratio	St Err		Odds Ratio	St Err
Resources					
Member of any organisation	0.800***	(0.0630)	**	1.008	(0.0841)
Meet family often	1.011	(0.0670)		0.987	(0.0739)
Meet friends often	1.077	(0.0753)		0.931	(0.0721)
Controls – other resources					
Higher education	0.622***	(0.0674)	***	0.947	(0.111)
Access to tech (PSU av.)	0.634	(0.406)		0.477	(0.360)
Other controls					
Risk attitude	1.517***	(0.101)	***	2.233***	(0.170)
Gender	0.580***	(0.0390)		0.590***	(0.0447)
Age	1.000	(0.0166)	**	1.056***	(0.0225)
Age squared	1.000	(0.000173)	***	0.999**	(0.000234)
Member of any org. (PSU av.)	0.931	(0.570)	*	0.195**	(0.140)
Meet family (PSU av.)	2.382	(1.402)		1.533	(1.070)
Meet friends (PSU av.)	2.468	(1.598)		1.042	(0.758)
Higher edu. (PSU av.)	0.748	(0.591)		3.237	(2.781)
Risk attitude (PSU av.)	2.257	(1.366)		1.057	(0.760)
Gender (PSU av.)	0.358	(0.329)		1.270	(1.330)
Age (PSU av.)	0.986	(0.0193)		1.001	(0.0233)
IMR	2.695***	(0.900)		2.273**	(0.893)
Constant	0.104	(0.145)		0.0215**	(0.0357)
Variance (PSU)	1.169***	(0.0464)			

3-level model with Macroeconomic controls

As mentioned above, I opted for a 2-level model due to computational time. Here, I present a 3-level model with several country-level controls. The results of the estimation are presented in Table 9.

Occupational choice and particularly self-employment may vary with levels of development (Banerjee & Newman 1993; Lepoutre et al. 2013). I use the natural logarithm of the GDP per capita at purchasing power parity to control for the level of development (as in Autio & Acs 2010 and Aidis et al. 2012). The variable has been lagged by two years (2008) to reduce potential endogeneity between the level of development and occupational choices as well as to account for the feedback effect and cyclicity of the development and wealth effects on the labour market. GDP growth, normally used to control for stage of the business cycle, has been replaced by EU membership as EU members experienced lower or negative growth while countries outside of the EU have shown a degree of resilience to the recession that affected the EU. EU membership also acts as a measure of institutional development.

It appears that EU membership does not exert any influence on occupational choice. However, better developed countries provide more employment and business opportunities as indicated by positive and significant results for GDP per capita. Interestingly, GDP per capital positively affects business ownership but has no effect on self-employment. Indeed, better developed countries provide more opportunity to grow businesses and reduce the need for necessity entrepreneurship by providing paid employment opportunities.

With regards to the key results, I get stronger and more significant results with respect to membership in organisations. It appears that in the 3-level model, membership of organisations positively and strongly affects selection into each type of occupation. All other variables of interest remain in line with base results.

Table 9. 3-level model with macroeconomic controls; Model 9

	Model 9: All transition Economies Level 2: PSU; Level 3: Country								
	Employed for wages		Diff. EfW-SE	Self-employed		Diff. SE-Emp	Employer		Diff. EfW-Emp
VARIABLES	Odds Ratio	St Err		Odds Ratio	St Err		Odds Ratio	St Err	
Resources									
Member of any organisation	1.937***	(0.112)	***	1.386***	(0.126)		1.527***	(0.148)	***
Meet family often	1.021	(0.0496)		0.992	(0.0769)		0.984	(0.0841)	
Meet friends often	0.917*	(0.0458)	***	1.110	(0.0895)	*	0.923	(0.0809)	
Controls – other resources									
Access to tech (PSU av.)	8.266***	(5.128)	**	30.13***	(24.68)		18.69***	(16.56)	
Higher education	3.870***	(0.318)	***	2.176***	(0.259)	***	3.444***	(0.420)	
Other controls									
EU membership	1.032	(0.162)		0.913	(0.164)		0.833	(0.154)	
GDP p/c ppp 2008	1.967***	(0.127)	***	0.961	(0.0764)	***	1.227**	(0.106)	***
Risk attitude	1.196***	(0.0612)	***	2.010***	(0.159)	***	2.815***	(0.248)	***
Gender	0.535***	(0.0395)	***	0.282***	(0.0299)		0.297***	(0.0340)	***
Age	1.301***	(0.0351)	**	1.411***	(0.0553)		1.444***	(0.0620)	***
Age squared	0.997***	(0.000347)	**	0.996***	(0.000500)		0.996***	(0.000547)	***
Member of any org. (PSU av.)	0.143***	(0.0763)		0.292*	(0.214)	***	0.0263***	(0.0212)	***
Meet family (PSU av.)	2.023	(1.091)	**	6.963***	(5.193)		2.836	(2.336)	
Meet friends (PSU av.)	1.284	(0.729)		2.247	(1.792)		1.093	(0.942)	
Higher edu. (PSU av.)	4.952**	(3.727)		1.792	(1.865)	**	17.57***	(19.13)	
Risk attitude (PSU av.)	1.506	(0.838)		2.600	(2.001)		0.888	(0.758)	
Gender (PSU av.)	0.838	(0.677)		0.493	(0.563)		1.821	(2.269)	
Age (PSU av.)	1.023	(0.0183)		1.022	(0.0250)		1.030	(0.0280)	
IMR	3.651***	(0.676)	***	6.678***	(1.580)		5.678***	(1.554)	**
Constant	2.00e-06***	(2.99e-06)		6.17e-06***	(1.23e-05)		5.94e-07***	(1.31e-06)	
Variance (PSU)	2.087***	(0.0741)							
Variance (Country)	1.760***	(0.0515)							

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

Trust

Trust has been excluded from the main regressions due to unexpectedly high or low levels of trust in some countries (Appendix 5) as revealed by summary statistics. The figures may be biased and therefore skew the results. Trust, along with extent of an individual's network, is a common measure of social capital. It has been widely acknowledged to be a stable trait and has been used as a measure of weak ties. Given that trust and membership in organisations are only very weakly correlated, trust may add a new dimension to the analysis.

The trust variable has been modified; based on a standard question 'Do you think you can trust other people or you can never be too careful?', from originally being coded on a scale from 1 (the lowest) to 5 (the highest) into a binary variable whereby respondents indicating the level of 4 or 5 were recoded as those having trust (1) while the rest were coded 0. I have also added a variable 'trust in new people' based on LiTS' question 'To what extent do you trust following group? – People you do not know'. As with the standard trust variable, the original response scale was re-coded into a binary one. Both variables have been included due to potential of regular trust questions being misunderstood. The measures are only weakly correlated (0.3), which further justifies the inclusion of both.

Table 10. 2-level model with trust; Model 10

	Model 10: All transition Economies Level 2: PSU								
	Employed for wages		**Diff. EfW-SE**	**Self-employed**		**Diff. SE-Emp**	**Employer**		**Diff. EfW-Emp**
VARIABLES	Odds Ratio	St Err		Odds Ratio	St Err		Odds Ratio	St Err	
Resources									
Trust	1.378***	(0.0615)	**	1.174**	(0.0918)	**	1.442***	(0.123)	
Trust in new people	0.928	(0.0490)	**	1.118	(0.100)		0.975	(0.0990)	
Member of any organisation	1.133***	(0.0547)	***	0.913	(0.0797)		1.090	(0.102)	
Meet family often	0.974	(0.0421)		0.960	(0.0719)		0.963	(0.0812)	
Meet friends often	0.917**	(0.0402)		1.028	(0.0798)	*	0.853*	(0.0731)	
Controls – other resources									
Access to tech (PSU av.)	250.3***	(138.3)	*	79.73***	(61.63)		92.37***	(80.00)	
Higher education	3.533***	(0.311)	***	2.144***	(0.272)	**	3.031***	(0.413)	
Other controls									
Risk attitude	1.201***	(0.0577)	***	1.853***	(0.145)	***	2.728***	(0.244)	***
Gender	0.650***	(0.0495)		0.334***	(0.0372)		0.354***	(0.0439)	***
Age	1.214***	(0.0324)		1.268***	(0.0497)		1.315***	(0.0584)	**
Age squared	0.998***	(0.000344)		0.997***	(0.000500)		0.997***	(0.000567)	**
Trust (PSU av.)	0.974	(0.584)		0.998	(0.845)		1.363	(1.311)	
Trust in new ppl (PSU av.)	0.484	(0.300)	*	0.144**	(0.128)		0.169*	(0.174)	
Member of any org. (PSU av.)	0.231***	(0.122)		0.275*	(0.205)	**	0.0426***	(0.0359)	**
Meet family (PSU av.)	2.286	(1.188)		5.474**	(3.970)		4.042*	(3.304)	
Meet friends (PSU av.)	1.167	(0.657)		2.487	(1.986)		0.790	(0.685)	
Higher edu. (PSU av.)	0.599	(0.421)		0.415	(0.415)		1.888	(2.035)	
Risk attitude (PSU av.)	1.233	(0.658)	*	3.394	(2.561)		1.053	(0.902)	
Gender (PSU av.)	1.184	(0.927)	***	0.509	(0.568)		1.621	(2.019)	
Age (PSU av.)	1.079***	(0.0188)		1.061**	(0.0262)		1.075***	(0.0302)	
IMR	2.411***	(0.488)	***	4.140***	(1.103)		3.873***	(1.242)	*
Constant	4.27e-05***	(5.48e-05)		5.55e-06***	(1.01e-05)		1.59e-06***	(3.27e-06)	
Variance (PSU)	1.212***	(0.0449)							

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

As presented in Table 10, it appears that only generalised trust matters and it matters for all occupational categories. By trusting others, employees become better and more cooperative co-workers and ambassadors of their employers. On the other hand, the self-employed and employers have no other choice but to show a degree of trust towards their suppliers, clients and workers as it is impossible to monitor everything and everyone. Moreover, it can be argued that generalised trust indicates the general health of institutions and business environment in the country as people will only be willing to trust if they can safely assume that others are trustworthy. This means that there are effective institutions that protect victims of deception and punish dishonesty.

The magnitude of the coefficient is largest for employers which is in line with expectations as they take the biggest risks and therefore must trust more. Again, results for variables of interest are in line with original results. Furthermore, the self-employed, again, tend to be significantly different from the other two categories.

Ties to the communist party

It has been long argued that parents' or one's own communist party membership may increase chances of becoming an entrepreneur (Aidis et al. 2008; Djankov & Qian 2006; Djankov et al. 2005; Gerber 2000). Particularly, father's party membership seems to exert a high influence on the offspring's selection into entrepreneurship. Mother's or one's own membership rarely has any effect, which may be because very relatively fewer actively belonged to the party and often held lower positions than men. Respondents themselves may have been too young to have created meaningful networks with other members.

Communist party membership supplied a very powerful form of networks as party members often regarded themselves to be above the law and were 'governed' by informal rules of behaviour known and enforced by members of the network (Michailova & Worm 2003). When communism fell, it was unlikely that these strong networks would immediately cease to exist. They then became useful during the hardships of the transition period and in some countries, where the transformation has been slower or stalled, they continue to be relevant today.

I therefore included in the specification, as another type of weak tie social capital, membership in communist party of mother, father or self. As presented in the Table 11, it appears that more than 25 years after the fall of communism the advantage is still evident. However, the advantage is only present if one's father was a member of a communist party and only to business owners employing others. It is no coincidence that this kind of network helps people establish bigger ventures. A

generation later, there is still strength in those connections, however, this result may also point to the formal institutional environment which may be difficult for the entrepreneurs wishing to grow their ventures.

Table 11. 2-level model with communist party membership.

	Model 11: All transition Economies Level 2: PSU								
	Employed for wages		Diff. EfW-SE	Self-employed		Diff. SE-Emp	Employer		Diff. EfW-Emp
VARIABLES	Odds Ratio	St Err		Odds Ratio	St Err		Odds Ratio	St Err	
Resources									
Father communist	1.114	(0.0793)		1.074	(0.132)	**	1.490***	(0.186)	***
Mother communist	1.063	(0.107)		1.186	(0.207)		1.314	(0.231)	
Self communist	1.016	(0.112)		0.953	(0.172)		0.808	(0.169)	
Member of any organisation	1.127***	(0.0520)	***	0.889	(0.0754)	**	1.118	(0.0999)	
Meet family often	0.960	(0.0400)		0.953	(0.0694)		0.931	(0.0756)	
Meet friends often	0.925*	(0.0391)		1.032	(0.0778)		0.894	(0.0739)	
Controls – other resources									
Access to technology (PSU av.)	277.2***	(154.1)		118.5***	(90.92)		89.30***	(76.65)	
Higher education	3.731***	(0.316)	***	2.151***	(0.268)	***	3.380***	(0.439)	
Other controls									
Risk attitude	1.214***	(0.0567)	***	1.848***	(0.142)	***	2.767***	(0.239)	***
Gender	0.656***	(0.0481)	***	0.350***	(0.0379)		0.347***	(0.0410)	***
Age	1.223***	(0.0317)		1.265***	(0.0488)		1.348***	(0.0580)	***
Age squared	0.998***	(0.000333)		0.997***	(0.000492)		0.997***	(0.000549)	**
Father communist (PSU av.)	0.814	(1.071)		0.516	(0.907)		0.938	(1.820)	
Mother communist (PSU av.)	0.866	(1.648)		1.530	(4.035)		0.0435	(0.128)	
Self communist (PSU av.)	0.618	(1.007)		0.795	(1.833)		0.396	(1.054)	
Member of any org. (PSU av.)	0.199***	(0.107)		0.232**	(0.172)	**	0.0439***	(0.0363)	**
Meet family (PSU av.)	1.961	(1.006)	*	5.366**	(3.816)		3.655	(2.918)	
Meet friends (PSU av.)	1.432	(0.800)		2.553	(1.984)		1.148	(0.967)	
Higher edu. (PSU av.)	0.658	(0.450)		0.474	(0.457)		2.215	(2.282)	
Risk attitude (PSU av.)	1.049	(0.550)		2.007	(1.481)		0.792	(0.657)	
Gender (PSU av.)	1.159	(0.895)		0.519	(0.567)		1.631	(1.973)	
Age (PSU av.)	1.081***	(0.0189)		1.056**	(0.0256)		1.074***	(0.0295)	
IMR	2.549***	(0.503)	****	4.059***	(1.075)		4.488***	(1.393)	**
Constant	3.16e-05***	(4.01e-05)		4.95e-06***	(8.78e-06)		8.31e-07***	(1.66e-06)	
Variance (PSU)	1.233***	(0.0454)							

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

Access to banking

Financial resources are essential in order to be able to start and operate entrepreneurial venture. They are also necessary to obtain knowledge and skills to be able to take up any type of paid employment. Arguably, financial resources may also be necessary to maintain one's networks through socialisation and participation in various clubs and initiatives. Such resources can be obtained from a variety of formal and informal sources such as family, friends, one's own funds as well as bank lending, venture capital and business angels. Evidence thus far suggests that in developed economies small and medium enterprises (SMEs) rely primarily on self-funding including retained profits, their own funds as well as funding from informal sources (Hughes 1997; Parker 2009). External funding comes primarily from debt finance such as loans and overdrafts, while equity finance plays a very minor role.

Use of formal financing, in case of small and medium businesses has been demonstrated to be particularly necessary for high growth ventures as it funds large projects that would otherwise be unable to rise informal funding (Rajan & Zingales 2003; Beck 2005). However, to ensure that businesses have access to such resources, they need to have access to the banking system. It is particularly important for one to be able to build a credit history and for a country to have a reliable system to collect and store such information. Furthermore, banks should be able to facilitate trade, including across borders and through bank accounts. Nakamura's (1991) 'checking account hypothesis' stipulates that bank account activity is a valuable source of information. Short term credit, for instance facilitated by credit cards, may be particularly important for smaller businesses to maintain liquidity and build up credit history. It has been shown that younger businesses as well as those in the service sector are more likely to use credit card debt while older ones and those in more traditional industries tend to rely on retained profits and bank financing (Vos et al. 2007).

The financing of ventures in transition economies is much more complex as countries inherited a banking system that served a passive role of monetary counterpart of planning directives (Korosteleva et. al. 2012). Therefore, few financing options out of those listed above have been available to entrepreneurs during transition (Estrin & Mickiewicz 2011). Historically predetermined working practices meant that banks favoured financing large state owned enterprises as, having the backing of the government, they posed less risk of default.

Lack of experience, sound practices and managerial experience on the part of banks as well as macroeconomic instability leading to high interest rates all acted against SMEs in the early transition period (Pissarides 1999). The evidence from EBRD (Korosteleva et.al. 2012) suggests that the reform of banking processes has been slow with only several countries in Central Europe and the Baltic

being close to being at par with Western banking. A decade after transition began, the region achieved an average score of 2.4 and 2.1 in EBRD's indicators of (1) the banking reform and interest rate liberalisation and (2) the securities market and non-bank financial institutions on a scale from 1 to 4.3 (EBRD 1999). Countries such as Azerbaijan, Belarus, Kyrgyzstan, Turkmenistan, Tajikistan and Uzbekistan showed little improvement until 2009 (EBRD 2009).

Early research of Eastern European SMEs confirmed that limited access to finance may have been an impediment to growth (Pissarides 1999; Pissarides 2001; Pissarides et al. 2003; Klapper et al. 2002) and may also explain the lower number of firms in the region compared to other OECD countries (Klapper et al. 2002). However, it must be noted that vast majority of studies have been conducted in Central and Eastern Europe and Russia. There exists almost no information on the former Soviet Union members from Central Asia and Caucasus or Turkey.

Based on the asset index items available in the LiTS access to banking scale, which includes having a bank account, debit card and credit card, has been constructed. The Cronbach-Alpha test confirmed the scale reliability of banking access scale 0.66. The test is slightly lower than the threshold (0.7), however, the difference is not large therefore the indicator is used as a robustness check. In 2010 Kyrgyzstan and Tajikistan were the lowest on the financial scale and Estonia the highest.

Table 12. 2-level model with access to banking.

	Model 12: All transition Economies Level 2: PSU								
	Employed for wages		Diff. EfW-SE	Self-employed		Diff. SE-Emp	Employer		Diff. EfW-Emp
VARIABLES	Odds Ratio	St Err		Odds Ratio	St Err		Odds Ratio	St Err	
Resources									
Member of any organisation	1.129***	(0.0522)	***	0.893	(0.0757)	**	1.121	(0.100)	
Meet family often	0.957	(0.0400)		0.948	(0.0691)		0.931	(0.0756)	
Meet friends often	0.930*	(0.0393)		1.038	(0.0783)		0.896	(0.0740)	
Controls – other resources									
Access to banking (PSU av.)	31.06***	(12.92)		24.97***	(13.88)		11.31***	(7.229)	**
Higher education	3.810***	(0.329)	***	2.269***	(0.284)	***	3.483***	(0.462)	
Other controls									
Risk attitude	1.219***	(0.0572)	***	1.879***	(0.144)	***	2.767***	(0.240)	***
Gender	0.650***	(0.0480)	***	0.336***	(0.0363)		0.350***	(0.0418)	***
Age	1.229***	(0.0323)		1.290***	(0.0501)		1.353***	(0.0591)	**
Age squared	0.998***	(0.000338)		0.997***	(0.000495)		0.997***	(0.000557)	**
Member of any org. (PSU av.)	0.209**	(0.135)		0.192**	(0.158)		0.0587***	(0.0537)	*
Meet family (PSU av.)	2.911*	(1.613)		7.045***	(5.172)		5.441**	(4.491)	
Meet friends (PSU av.)	2.002	(1.234)		3.423	(2.780)		1.550	(1.385)	
Higher edu. (PSU av.)	1.597	(1.255)		1.102	(1.137)		4.392	(4.842)	
Risk attitude (PSU av.)	0.925	(0.606)		1.586	(1.317)		0.900	(0.837)	
Gender (PSU av.)	0.560	(0.494)		0.315	(0.363)		0.725	(0.937)	
Age (PSU av.)	1.032	(0.0206)		1.016	(0.0260)		1.037	(0.0296)	
IMR	2.633***	(0.525)	***	4.631***	(1.224)		4.438***	(1.406)	*
Constant	0.00184***	(0.00262)		0.000104***	(0.000188)		1.86e-05***	(3.76e-05)	
Variance (PSU)	1.348***	(0.0518)							

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

The results of the estimation are presented in Table 12. As expected, access to banking plays an important role in occupational choice. However, contrary to expectations, it seems to be most important for those employed for wages and less so for the self-employed and employers. The reason for that may be that employees need bank accounts for their salaries to be paid to them. On the other hand, business owners may have an incentive to be less connected to the banking system as they may not want their finances to be formally recorded for taxation purposes etc. Further, access to banking may play a lesser role for them due to formal financing being less preferred by business people (Korosteleva & Mickiewicz 2011). In 2010 when this survey was being conducted the financial systems in many countries were under much pressure therefore formal financing was scarce.

Further, seeing a high correlation between psu levels of access to banking and technology, the categories have been merged on the grounds that access to banking may be conditioned by general technological development which is picked up at the PSU level but not so much at the individual level. As presented in Table 13, the magnitudes of the coefficients for the combined index are much higher than just for access to banking but not as high as for access to technology alone. Again, access seems to be of higher importance for those in wage employment than those working for themselves. In both specifications, the effects of other variables are almost unchanged.

Table 13. 2-level model with access to technology and banking.

	Model 12: All transition Economies Level 2: PSU								
	Employed for wages		**Diff. EfW-SE**	**Self-employed**		**Diff. SE-Emp**	**Employer**		**Diff. EfW-Emp**
VARIABLES	Odds Ratio	St Err		Odds Ratio	St Err		Odds Ratio	St Err	
Resources									
Member of any organisation	1.129***	(0.0522)	***	0.893	(0.0757)	**	1.121	(0.100)	
Meet family often	0.957	(0.0400)		0.948	(0.0691)		0.931	(0.0756)	
Meet friends often	0.930*	(0.0393)		1.038	(0.0783)		0.896	(0.0740)	
Controls – other resources									
Access to banking (PSU av.)	31.06***	(12.92)		24.97***	(13.88)		11.31***	(7.229)	**
Higher education	3.810***	(0.329)	***	2.269***	(0.284)	***	3.483***	(0.462)	
Other controls									
Risk attitude	1.219***	(0.0572)	***	1.879***	(0.144)	***	2.767***	(0.240)	***
Gender	0.650***	(0.0480)	***	0.336***	(0.0363)		0.350***	(0.0418)	***
Age	1.229***	(0.0323)		1.290***	(0.0501)		1.353***	(0.0591)	**
Age squared	0.998***	(0.000338)		0.997***	(0.000495)		0.997***	(0.000557)	**
Member of any org. (PSU av.)	0.209**	(0.135)		0.192**	(0.158)		0.0587***	(0.0537)	*
Meet family (PSU av.)	2.911*	(1.613)		7.045***	(5.172)		5.441**	(4.491)	
Meet friends (PSU av.)	2.002	(1.234)		3.423	(2.780)		1.550	(1.385)	
Higher edu. (PSU av.)	1.597	(1.255)		1.102	(1.137)		4.392	(4.842)	
Risk attitude (PSU av.)	0.925	(0.606)		1.586	(1.317)		0.900	(0.837)	
Gender (PSU av.)	0.560	(0.494)		0.315	(0.363)		0.725	(0.937)	
Age (PSU av.)	1.032	(0.0206)		1.016	(0.0260)		1.037	(0.0296)	
IMR	2.633***	(0.525)	***	4.631***	(1.224)		4.438***	(1.406)	*
Constant	0.00184***	(0.00262)		0.000104***	(0.000188)		1.86e-05***	(3.76e-05)	
Variance (PSU)	1.348***	(0.0518)							

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

Industry controls

Following the literature, industry controls have been added. LiTS 2010 provides a description of the industry the respondent is working for, which is largely in line with SIC 2007 code (Appendix 9). The existing categories have been divided into 4 sectors: primary, secondary, tertiary and quaternary (Appendix 10) as there may not be enough observations in each of the SIC2007 categories.

As shown in Table 14, the results pertaining to the hypotheses are in line with the original results but adding industry sectors provides interesting information. For employees, all sectors seem to have positive and significant results as compared to the primary sector. This is not surprising given that the share of agriculture has been diminishing across the world and particularly in countries that aim to modernise their economies. Further, thanks to technology, agriculture requires smaller labour force involvement. On the other hand, for the self-employed and employers, only the tertiary sector seems to have significant and positive effects. As countries moved on from the communist secondary sector focus, the tertiary sector sprang up very rapidly, providing the most business opportunities. Surprisingly, the quaternary sector seems to have a negative effect on the self-employed and employers. Clearly, very few to none of the transition countries reached the knowledge and information technology stage, where the quaternary sector plays a major role.

Table 14. 2-level model with industry controls.

	Model 14: All transition Economies Level 2: PSU								
	Employed for wages		Diff. EfW-SE	Self-employed		Diff. SE-Emp	Employer		Diff. EfW-Emp
VARIABLES	Odds Ratio	St Err		Odds Ratio	St Err		Odds Ratio	St Err	
Resources									
Member of any organisation	1.275***	(0.110)	***	0.839	(0.0913)		0.981	(0.111)	***
Meet family often	1.186**	(0.0970)		1.214*	(0.122)		1.181	(0.126)	
Meet friends often	0.837**	(0.0710)		0.921	(0.0968)		0.797**	(0.0879)	
Controls – other resources									
Access to technology (PSU av.)	65.63***	(63.29)		28.89***	(31.79)		27.15***	(31.41)	
Higher education	2.271***	(0.249)	***	1.545***	(0.206)	***	2.356***	(0.313)	
Other controls									
Secondary sector	2.296***	(0.332)	***	0.837	(0.148)	***	1.175	(0.239)	***
Tertiary sector	2.987***	(0.422)	***	1.700***	(0.281)	***	2.673***	(0.506)	***
Quarternary sector	4.922***	(0.911)	***	0.442***	(0.114)	***	0.619*	(0.175)	***
Risk attitude	0.878	(0.0697)	***	1.275**	(0.125)	***	1.840***	(0.193)	***
Gender	1.083	(0.0889)	***	0.673***	(0.0679)		0.658***	(0.0700)	***
Age	1.100***	(0.0252)		1.089***	(0.0294)	**	1.156***	(0.0341)	**
Age squared	0.999***	(0.000278)		0.999**	(0.000324)	***	0.999***	(0.000355)	**
Member of any org. (PSU av.)	0.158**	(0.126)		0.274	(0.256)	***	0.0296***	(0.0295)	***
Meet family (PSU av.)	0.553	(0.452)		1.391	(1.326)		1.098	(1.120)	
Meet friends (PSU av.)	1.146	(1.013)	*	2.105	(2.187)		0.902	(0.978)	
Higher edu. (PSU av.)	0.717	(0.847)		0.626	(0.878)		2.727	(4.035)	
Risk attitude (PSU av.)	0.656	(0.562)		1.123	(1.122)		0.494	(0.530)	
Gender (PSU av.)	3.273	(4.108)		1.639	(2.443)		4.293	(6.769)	
Age (PSU av.)	1.069**	(0.0281)		1.038	(0.0320)		1.062*	(0.0352)	
Secondary sector (PSU av.)	5.200	(8.015)		3.127	(5.579)		1.991	(3.810)	
Tertiary sector (PSU av.)	1.325	(1.553)	*	0.216	(0.299)	**	1.057	(1.539)	**
Quarternary sector (PSU av.)	0.214	(0.335)		0.0980	(0.182)		0.151	(0.300)	
IMR	15.60*	(25.87)		26.84*	(45.62)		41.07**	(73.33)	
Constant	0.00207***	(0.00388)		0.00588**	(0.0129)		0.000274***	(0.000642)	
Variance (PSU)	1.171**	(0.0855)							

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

Migration

Furthermore, given the fact that transition economies experience very high economic migration levels, which is particularly true for CEE countries as well as Central Asia, I decided to control for migration as it may affect employment levels. Usually, only one member of the family, a man, goes abroad to work. Females become then household heads but often do not work. This may affect social networks as well as access to other resources.

The LiTS 2010 questionnaire does not explicitly ask about migration or whether members of the household migrated for economic reasons. However, in Section 8, the questionnaire asks whether the household has been affected by the financial crisis through reduced remittances. This captures two effects: reduced remittances as well as migration. However, only part of the migration is captured here, namely those who are away and are negatively affected, not capturing those who have migrated but are not negatively affected. Nevertheless, given that many migrants work illegally (particularly those from Central Asia working in Russia) and therefore are more likely to be employed in low skilled occupations and industries that require such labour (construction, manufacturing), this figure may represent a fair number of them. Those industries have also been most likely affected by the crisis.

The results presented in Table 15 suggest that migration of a family member affects occupational choice, at least as measured by the remittance measure. It negatively affects selection into paid employment but has no effect on both categories of entrepreneurship. This is consistent with the argument presented above, that while one family member migrates the other one usually does not work or quits wage employment. Further, the results for the key variables are largely in line with the base regressions.

Table 15. 2-level model with migration.

	Model 15: All transition Economies Level 2: PSU								
	Employed for wages		Diff. EfW-SE	Self-employed		Diff. SE-Emp	Employer		Diff. EfW-Emp
VARIABLES	Odds Ratio	St Err		Odds Ratio	St Err		Odds Ratio	St Err	
Migrant in the family	0.673***	(0.0452)	***	0.968	(0.108)		1.205	(0.140)	***
Resources									
Member of any organisation	1.127**	(0.0589)	*	0.951	(0.0950)		1.028	(0.109)	
Meet family often	0.944	(0.0449)		0.892	(0.0790)		0.936	(0.0895)	
Meet friends often	0.914*	(0.0439)		1.000	(0.0905)		0.920	(0.0895)	
Controls – other resources									
Access to technology (PSU av.)	79.94***	(49.51)		121.7***	(110.0)		115.5***	(114.0)	
Higher education	3.657***	(0.345)	***	2.209***	(0.319)	**	3.327***	(0.498)	
Other controls									
Risk attitude	1.173***	(0.0624)	***	1.827***	(0.168)	***	2.634***	(0.267)	***
Gender	0.707***	(0.0558)	***	0.356***	(0.0434)		0.383***	(0.0509)	***
Age	1.200***	(0.0353)		1.241***	(0.0562)		1.303***	(0.0658)	*
Age squared	0.998***	(0.000376)		0.998***	(0.000573)		0.997***	(0.000641)	*
Migrant in the family (PSU av.)	0.258*	(0.179)		0.991	(1.059)		1.177	(1.383)	
Member of any org. (PSU av.)	0.234***	(0.127)		0.114***	(0.0943)		0.0403***	(0.0369)	**
Meet family (PSU av.)	2.513*	(1.331)		3.866*	(3.139)		5.415*	(4.953)	
Meet friends (PSU av.)	0.834	(0.482)		2.116	(1.856)		0.765	(0.732)	
Higher edu. (PSU av.)	1.451	(1.023)		0.506	(0.560)		2.873	(3.294)	
Risk attitude (PSU av.)	1.356	(0.732)		3.243	(2.696)	*	0.444	(0.410)	
Gender (PSU av.)	0.964	(0.757)		1.453	(1.798)		1.440	(1.924)	
Age (PSU av.)	1.054***	(0.0183)		1.067**	(0.0284)		1.078**	(0.0316)	
IMR	2.372***	(0.545)	*	3.723***	(1.155)		3.939***	(1.452)	
Constant	0.000362***	(0.000499)		2.41e-06***	(5.00e-06)		1.21e-06***	(2.78e-06)	
Variance (PSU)	1.181***	(0.0473)							

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

3.7 Conclusions and Policy Recommendations

In this paper, I consider the effect of strong and weak tie social capital as well as other key resources on occupational choice in transition economies. As presented in the theoretical framework in Chapter 1, network ties constitute meso level informal institutions and represent the social context within which individuals operate. The weak and strong ties represent how strongly they are connected with their community and outside it. The unique dataset I use allows the exploration of weak ties alongside strong ties at individual and neighbourhood levels. I argue that strong and weak ties affect occupational choice and are particularly important for the self-employed and employers.

Further, I compare the relative importance of those effects between the three occupational categories.

The data used in this paper comes from the second wave of the Life in Transition data collected and published by the European Bank for Reconstruction and Development. Methodology-wise, I opted for multilevel modelling to account for the structure of the data and I also introduced a selection model to deal with potential sample selection bias.

The results indicate that the post-communist countries may have moved on from the 'transition inflicted' model of interactions in the labour markets where personal connections were necessary to succeed. However, they are not at the same stage as developed economies which seem to use social capital in a different way. It also points to the fact that the social capital infrastructure may be in the process of transition. The importance of family and friends has diminished because almost everyone has been 'displaced' in the job market and the new enterprises competing in a free economy must ensure they employ people fittest for the job. On the other hand, the importance of technology shows that modern physical infrastructure plays a large role.

I also find significant differences in results between categories. Interestingly, if all resources are considered, there exist the self-employed seem to be significantly different from the other two employment categories. Employees and employers seem to have more in common. This suggests that those with higher resource endowments select higher return options such as paid employment or business ownership. Those stuck in self-employment may be necessity entrepreneurs, whose chances of paid employment are low or who are locked in dependent forms of self-employment.

The results support arguments of Cook et al. (2005) and Stiglitz (2000) that transition economies are moving towards a modern complex society where social relations are embedded in economic system. Consequently, policy makers should support creation of weak ties through promotion and funding of non-political hobby organisations and professional associations. Moreover, they should work towards improving formal institutional environments so that social relations do not substitute formal mechanisms but act as a complement.

Further, there appears to be a need to support the self-employed. It seems that they have lower resource endowments therefore support may be needed for them to achieve the level of resources necessary to take up paid employment or expand their business. Particularly in the sphere of training and education, managerial training programmes as well as links between SMEs and universities should be promoted. Further, if the parasubordinate forms of employment are an issue, labour market regulation may be desirable. Further, general technological infrastructure improvements

such as greater availability of broadband, internet access in public places such as libraries is highly desirable.

Future research should consider other measures of occupational choice and more precise measures of entrepreneurship, such as nascent entrepreneurship. It would also be insightful to capture unemployed individuals at the time they are making decisions to take up any form of employment or remain unemployed. Moreover, focusing on particular countries and smaller groups of transition economies may further our understanding of the effect of social capital and other resources in those regions.

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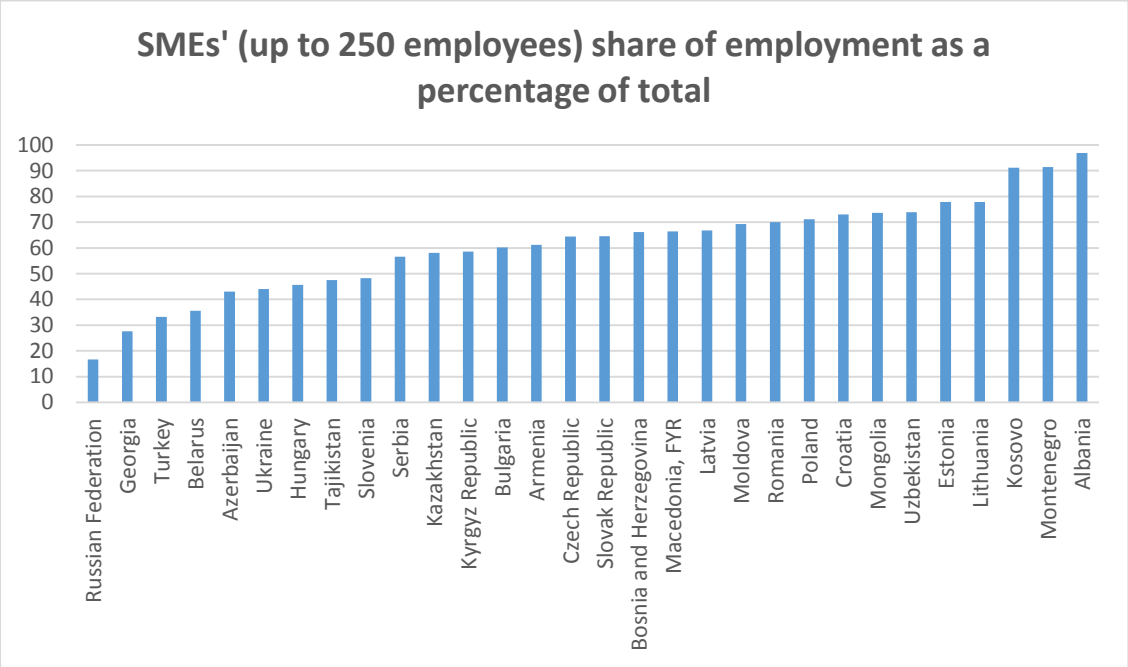
3.9 Appendices

Appendix 1. SMEs' share of employment



Appendix 2. Specification of dependent variable – employment status – based on the LiTS survey questions

Relevant survey questions

Question no.	Question	Options	Percentage	Mean	Sd
Q501	have you worked in last 12 months?	1 – yes 2 – no	1 – 49.48% 2 – 50.52% (includes unemployed and those out of labour force)	1.51	0.4999
Q503_1 – Q503_5	are you still working in this job?	1 – yes 2 – no			
Q503m (main job)	are you still working in this job?	1 – yes 2 – no	1 – 91% 2 – 9%	1.09	0.287
Q508a-Q508e	in this job did you work…	1 – for wages 2 – as self-employed 3 – as an independent farmer	1 – 81.25% 2 – 14.04% 3 – 4.71%	1.23	0.52
Q514 (if more than one job)	which one of these jobs do you consider to be your main job?	1 – job no 1 2 - job no 2 3 – job no 3 4 – job no 4 5 – job no 5	1 – 97.72% 2 – 1.98% 3 – 0.23% 4 – 0.07% 5 – 0.01%		
Q513a – Q513e (if self-employed)	how many people do you employ excluding any household members?	0 – 2009	0 - 55.2% 1-5 – 36.46% 1-10 – 40% (based on Q513a)	2.98 (based on Q513a)	40.89 (based on Q513a)
Q522	are you actively looking for a job at this moment?	1 – yes, looking for a job/better job 2 – yes, looking for additional job 3 - no	1 – 15% 2 – 4.7% 3 – 80.3%		

Appendix 3. Specification process of the dependent variable

Age restriction: 15 - 65

Not employed = not employed in the main job (Q503m=0) & not looking for a job (Q522=3)

Employed for wages in the main job = still employed in the main job (Q503m=1) & employed for wages in the main job (Q508a-e=1)

Self-employed in main job = still employed in the main job (Q503m=1) & self-employed in the main job (Q508a-e=2 & Q514=1-5)

Employer in main job = still employed in the main job (Q503m=1) & main job is self-employment (Q508a-e=2 & Q514=1-5) & employs 1 person or more (Q513a-e>=1)

Appendix 4. Occupational choice by country

Country	Unemployed	Employed for wages	Self-employed	Employer	Total	GEM TEA 2010	GEM Established business ownership
Albania	24.52	43.17	20.12	12.19	100		
Armenia	47.31	40.03	11.27	1.39	100		
Azerbaijan	42.58	46.69	7.16	3.58	100		
Belarus	8.97	86.18	0.85	3.99	100		
Bosnia	33.76	53.37	11.50	2.37	100	7.7	6.6
Bulgaria	22.74	65.62	5.55	6.10	100		
Croatia	25.44	68.16	4.47	1.94	100	5.5	2.9
Czech Republic	8.78	76.20	10.91	4.11	100		
Estonia	18.56	75.05	2.27	4.12	100		
France	11.44	80.07	5.72	2.77	100	5.8	2.4
Georgia	38.29	26.25	33.78	1.67	100		
Germany	11.44	77.12	4.94	6.50	100	4.2	5.7
Great Britain	15.99	69.42	8.88	5.71	100	6.4	6.4
Hungary	16.53	72.18	5.65	5.65	100	7.1	5.4
Italy	15.12	69.59	1.63	13.66	100	2.3	3.7
Kazakhstan	15.92	75.58	1.55	6.96	100		
Kosovo	51.95	38.24	4.91	4.91	100		
Kyrgyzstan	9.77	33.55	45.77	10.91	100		
Latvia	20.03	75.34	2.74	1.88	100	9.7	7.6
Lithuania	19.58	72.05	7.22	1.14	100		
Macedonia	38.40	49.02	8.01	4.58	100	8	7.6
Moldova	28.70	59.05	8.41	3.84	100		
Mongolia	31.06	45.05	17.75	6.14	100		
Montenegro	21.46	61.95	12.52	4.07	100	14.9	7.8
Poland	11.19	70.12	12.50	6.19	100		
Romania	24.51	67.39	6.52	1.58	100	4.3	2.1
Russia	8.87	84.69	1.16	5.28	100	3.9	2.8
Serbia	20.91	55.40	17.89	5.81	100		
Slovakia	12.81	77.58	7.66	1.95	100		
Slovenia	17.94	73.00	5.68	3.37	100	4.7	4.9
Sweden	6.58	86.84	3.29	3.29	100	4.9	6.4
Tajikistan	36.24	35.76	23.76	4.24	100		
Turkey	26.65	47.23	20.05	6.07	100	8.6	10.7
Ukraine	15.51	74.58	1.07	8.83	100		
Uzbekistan	17.14	55.42	18.88	8.57	100		
Total	**48.61**	**47.84**		**3.55**	**100**		

Appendix 5. Trust levels in transition economies

Do you think other people can be trusted?

Country	No	Yes	Total
Albania	53.54	46.46	100
Armenia	91.92	8.08	100
Azerbaijan	75.35	24.65	100
Belarus	57.92	42.08	100
Bosnia	67.32	32.68	100
Bulgaria	71.51	28.49	100
Croatia	71.99	28.01	100
Czech Republic	74.03	25.97	100
Estonia	53.22	46.78	100
France	66.04	33.96	100
Georgia	71.23	28.77	100
Germany	69.93	30.07	100
Great Britain	52.1	47.9	100
Hungary	75.5	24.5	100
Italy	73.8	26.2	100
Kazakhstan	44.11	55.89	100
Kosovo	57.07	42.93	100
Kyrgyzstan	73.15	26.85	100
Latvia	72.55	27.45	100
Lithuania	76.09	23.91	100
Macedonia	79.1	20.9	100
Moldova	58.79	41.21	100
Mongolia	57.79	42.21	100
Montenegro	60.05	39.95	100
Poland	61.14	38.86	100
Romania	73.15	26.85	100
Russia	49.29	50.71	100
Serbia	62.31	37.69	100
Slovakia	77.25	22.75	100
Slovenia	69.34	30.66	100
Sweden	26.94	73.06	100
Tajikistan	50.1	49.9	100
Turkey	82.99	17.01	100
Ukraine	51.13	48.87	100
Uzbekistan	50.95	49.05	100
Total	**63.96**	**36.04**	**100**

Appendix 6. Active and passive membership in organisations (unweighted mean percentage)

Organisation	Active Members Full sample	Active Members Transition economies	Active Members Comparator economies	Passive Members Full sample	Passive Members Transition economies	Passive Members Comparator economies
Church and religious organisations	6.04	5.5	9.32	12.7	11.72	18.59
Sport and recreational organisations and associations	5.12	2.8	19.19	4.04	3.27	8.7
Art, music or educational organisations	2.89	1.89	8.96	2.7	2.08	6.41
Labour union	2.86	2.51	4.92	5.89	4.87	12.12
Environmental organisation	0.75	0.52	2.2	2.19	1.67	5.31
Professional associations	2.24	1.58	6.25	3.14	2.43	7.49
Humanitarian or charitable organisation	2.22	1.29	7.81	3.52	2.24	11.26
Youth association	1.37	1.11	2.93	2.01	1.98	2.14

Appendix 7. Data summary

Variable	Source	Description	Mean	Sd
Resources				
Member of any organisation	LiTS 2010; Q7.13	Respondent a member of at least 1 organisation	0.281	0.45
Member of any org. (PSU average)	LiTS 2010; Q7.13	PSU averaged membership in at least 1 organisation	0.309	0.068
Meet family often	LiTS 2010; Q3.24	Respondent meets family daily or on most days	0.419	0.493
Meet family often (PSU average)	LiTS 2010; Q3.24	PSU averaged number of respondents meeting family daily or on most days	0.429	0.063
Meet friends often	LiTS 2010; Q3.25	Respondent meets friends daily or on most days	0.587	0.492
Meet friends often (PSU average)	LiTS 2010; Q3.25	PSU averaged number of respondents meeting friends daily or on most days	0.598	0.167
Access to technology (PSU average)	LiTS 2010; Q2.25	PSU averaged index of ownership of a computer, mobile phone and access to internet	0.585	0.064
Access to banking (PSU avearge)	LiTS 2010; Q2.25	PSU averaged index of ownership of a bank account, debit card and credit card	0.342	0.089
Higher education	LiTS 2010; Q5.15	Respondent has bachelor's or master's degree or PhD	0.193	0.395
Higher education (PSU average)	LiTS 2010; Q5.15	PSU averaged number of respondents who have bachelor's or master's degree or PhD	0.204	0.043
Controls				
Risk attitude	LiTS 2010; Q5.37	Equals to 1 if respondent's willingness to take risk on a scale 1-10 is 6 or above or 0 otherwise	0.362	0.48
Risk attitude (PSU average)	LiTS 2010; Q5.37	PSU average of respondents whose willingness to take risk on a scale 1-10 is 6 or above or 0 otherwise	0.366	0.054
Gender	LiTS 2010	Equal to 1 if female 0 if male	0.611	0.487
Gender (PSU average	LiTS 2010	PSU averaged number of females	0.606	0.036
Age	LiTS 2010	Respondent's age	45.17	17.41
Age squared	LiTS 2010	Squared term of respondent's age	2343	1703
Age (PSU average)	LiTS 2010	PSU averaged respondents' age	45.64	1.83
IMR	LiTS 2010	Inverse Mill's Ratio	1.076	1.29

Appendix 8. Heckman selection equation

Dependent variable: 0 – outside the labour force; 1 – in labour force

	Model 1. Selection Equation	
	Level 2: PSU	
REGION	**Post-communist states**	
VARIABLES	Odds Ratio	St Err
Regional unemployment	0.364**	(0.144)
Member of any organisation	1.028	(0.0343)
Member of any org. (PSU average)	1.342	(0.468)
Meet family often	0.889***	(0.0262)
Meet family (PSU av.)	1.754*	(0.594)
Meet friends often	1.057*	(0.0319)
Meet friends (PSU av.)	0.866	(0.309)
Access to tech (PSU av.)	6.831***	(2.519)
Risk attitude	1.358***	(0.0402)
Risk attitude (PSU av.)	0.666	(0.228)
Higher education	2.689***	(0.104)
Higher edu. (PSU av.)	0.894	(0.412)
Gender	0.470***	(0.0139)
Gender (PSU av.)	2.111	(1.047)
Age	1.259***	(0.00833)
Age squared	0.997***	(7.90e-05)
Age (PSU average)	1.003	(0.0116)
Constant	0.00971***	(0.00747)
St dev (psu)	0.130***	(0.0206)

Appendix 9. LiTS and SIC 2007 industrial classifications

LiTS 2010	SIC 2007 Code
Agriculture, hunting and forestry	A) Agriculture, Forestry and Fishing
Fishing	A) Agriculture, Forestry and Fishing
Mining and quarrying	B) Mining and quarrying
Manufacturing	C) Manufacturing
Electricity, gas and water supply	D) Electricity, Gas, Steam and air conditioning + E) Water supply, sewerage, waste management and remediation activities
Construction	F) Construction
Sale, maintenance and repair of motor vehicles	G) Wholesale and retail trade; repair of motor vehicles and motorcycles
Wholesale trade and commission trade	G) Wholesale and retail trade; repair of motor vehicles and motorcycles
Retail trade, except of motor vehicles	G) Wholesale and retail trade; repair of motor vehicles and motorcycles
Hotels and restaurants	I) Accommodation and food service activities
Transport, storage and communications	H) Transport and storage
Financial intermediation	K) Financial and insurance activities
Real estate activities	L) Real estate activities
Renting of machinery and equipment	
Computer and related activities	J) Information and communication
Research and development	M) Professional, scientific and technical activities
Other business activities	N) Administrative and support service activities
Public administration and defence	O) Public administration and defence; compulsory social security
Education	P) Education
Health and social work	Q) Human health and social work activities
Sewage and refuse disposal, sanitation	E) Water supply, sewerage, waste management and remediation activities
Activities and membership organizations	
Recreational, cultural and sporting activities	R) Arts, entertainment and recreation
Other service activities	S) Other service activities
Private households with employed person	T) Activities of households as employers, undifferentiated goods and service producing activities of households for own use
Extra-territorial organizations and bodies	U) Activities of extraterritorial organisations and bodies

Appendix 10. Sectoral classification

Sector	Industrial classification
Primary	1. Agriculture, hunting and forestry 2. Fishing
Secondary	3. Mining and quarrying 4. Manufacturing 5. Electricity, gas and water supply
Tertiary	6. Construction 7. Sale, maintenance and repair of motor vehicles 8. Wholesale trade and commission trade 9. Retail trade, except of motor vehicles 10. Hotels and restaurants 11. Financial intermediation 12. Real estate activities 13. Renting of machinery and equipment 14. Other business activities 15. Public administration and defence 16. Health and social work 17. Sewage and refuse disposal, sanitation 18. Activities and membership organizations 19. Recreational, cultural and sporting activities 20. Other service activities 21. Private households with employed person 22. Extra-territorial organizations and bodies
Quaternary	23. Transport, storage and communications 24. Financial intermediation 25. Computer and related activities 26. Research and development 27. Education

CHAPTER 4. CITIES, TECHNOLOGY AND THE INCIDENCE OF CORRUPTION.

This chapter analyses the determinants of informal institutions. Both the determinants and the informal institutions represent the meso level of the framework presented in Chapter 1. More specifically, the paper investigates the effects of the local context on the incidence of petty corruption[1] among public officials and courts in 30 transition economies. Technological access represents local infrastructure - the formal side of the framework while the city size captures formal and informal effects. Firstly, it captures the social context that is created by the intensity of interactions within small, medium or large cities. Secondly, it captures formal local institutions that may exist in cities of different sizes.

4.1 Introduction

Corruption has been recognised as a plague in developing countries and is thought to hinder development by raising transaction costs and uncertainty in the economy hence leading to inefficient economic outcomes (Gray & Kaufman 1998). Despite quite early and widespread realisation of the detrimental effects of corruption, there is no sign of it decreasing. In fact, it could be argued that in many countries it has been on the increase (European Commission 2014; Transparency International 2013). This is in spite of the best efforts of institutions such as the World Bank, United Nations, OECD and other international institutions to combat corruption world-wide. Commonly blamed factors leading to or increasing corrupt activity are natural resource endowments (Leite & Weidmann 1999; Sachs & Warner 2001; Ploeg 2011), foreign aid (Svensson 2000; Bräutigam & Knack 2004) and poor institutions (Alt & Lassen 2003; Aidt 2003; Aidt 2009; Dreher et al. 2009). Further, corruption seems to be a problem also in developed countries. The report on corruption in the EU by the European Commission revealed that three quarters (76%) of Europeans think that corruption is widespread and more than half (56%) think that the level of corruption in their country

[1] Transparency International (2016) defines petty corruption as everyday abuse of entrusted power by low- and mid-level public officials in their interactions with ordinary citizens, who often are trying to access basic goods or services in places like hospitals, schools, police departments and other agencies.

has increased over the past three years (European Commission 2014). According to the report, corruption costs the European economy 120bn euros per year.

Despite the fact that we are able to approximate how much money is lost through corruption and its perceived prevalence across countries, little is known about how corruption is distributed within countries. We cannot with certainty pinpoint who engages in corrupt activities and whether it occurs at similar levels across towns and cities or political and economic hubs see more of it. It is also uncertain whether it dominates the business sphere where it acts as 'speed money' or individuals from all walks of life equally engage in it. Equally, most of the recommended strategies to fight corruption are costly and require political will and commitment, all of which are rather scarce in countries where corruption is a problem.

Using the Life in Transition Survey data for 30 transition countries, this paper considers two vital aspects that may help to understand and fight corruption better. Firstly, it considers how the formal and informal institutional environment reflected by the size of the city affects the incidence of petty corruption. More specifically, I argue that those who live in large cities are more likely to engage in corrupt activities due to larger concentrations of economic activity and higher numbers of officials. Furthermore, larger cities are more likely to provide more anonymity to both, the payers and the takers.

Secondly, with a rapid spread of technology across the world, in particular access to computers, mobile phones and the internet, individuals have access to more people, information, markets, and services than ever. Even in poor and remote areas, communities are likely to have an access to at least one mobile phone per village. Expansion of technology is usually not a top-down measure specifically undertaken to fight corruption, rather individuals and communities choose to invest in it for their own broad benefits. The effect it may have on reducing corruption may often be a by-product of increased communication and access to information.

Therefore, this paper investigates the effect of technological access on individual propensity to engage in petty corruption. Specifically, I hypothesize that access to technology decreases incidence of corruption of public officials and courts. Corrupt officials rely on the fact that members of the public possess less information about their work and procedures guiding public use of their services. Giving customers an access to information will result in them being able to shape their behaviour and expectations. Technology may also decrease the necessity for face to face interaction with officials as individuals are able to call or email to ask for advice.

This paper contributes to the current body of literature on corruption in three ways; firstly, it investigates incidence (rather than perception) of corruption at individual level using data that has not been used before for that purpose. In addition, as opposed to other individual level studies that are mainly based on the International Crime Victims Survey, this paper investigates a much more recent time period (2010). Secondly, it sheds more light on the effects of local environment on corrupt activities. Thirdly, the data used here provides a unique opportunity to investigate corruption in the transition region. The dataset I am using is by far the most complete and detailed source of information on all transition economies with the exception of Turkmenistan. Finally, the methodology employed here has rarely been used in the context of corruption and generally. It allows to account for the structure of the data and sampling technique used to collect the data.

The rest of this paper will proceed as follows: the next section will discuss the theoretical grounds including definitions of corruption as well as economic models of it. Then, in section 4.3, I review the literature on the topic and propose hypotheses. Section 4.4 provides details of the data and methodology used while section 4.5 presents and discusses the results, limitations and policy implications. Section 4.6 concludes.

4.2 Theoretical grounds

4.2.1 Definition and Models of Corruption

Corruption is most commonly defined as 'misuse of entrusted power for private gains' (UNDP, 2008, p.18). Economists often define it using principal agent theory or game theory; Klitgaard (1988) explained corruption as a simple principal-agent-client model where principals are elected officials accountable to the citizens (clients). Principals employ public servants as agents who deliver services to the citizens on their behalf. Typically, the agents possess much more information about the administration than the clients or principals themselves. Corruption arises when the agents exploit the superior knowledge they have to their own benefit, acting against the instructions of the principals and expectations of the agents.

This paper is mainly concerned with administrative corruption in the legal system or in the process of obtaining formal documents. It therefore falls within the standard definitions of corruption in the public sector where the agents have a superior knowledge which they use for private benefit against the interests of the client and instructions of the principal. The focus here is on the individual paying a bribe and characteristics of his/her environment.

However, as Ledeneva (2009b) pointed out, corruption is a modern concept linked to the transformation of traditional patrimonial forms of government. This transformation led to emergence of modern states with rational-legal and legal systems where decisions are made on the basis of institutionalised rules. Deviation from those is defined as corruption. Ledeneva notes that not all post-communist states satisfy Weber's definition of modernity. She argues that 'the lack of a clear division between public and private in post-communist countries generates forms of expediency and rationality that are not conducive to modernity and present an obstacle to the rationality of the "rule of law"' (p. 259).

Incidence of corruption is rarely measured at individual level due to availability of data. There exist many theoretical descriptive models of corruption at national level. However, where an individual decision to engage in corruption is concerned, Becker (1974) provided a framework for analysis. He simply stipulated that if a corrupt act has higher yields, an individual will engage in it. The probability is determined by chances of being caught and convicted, the gains from corrupt acts and personal characteristics. The model is, therefore, as follows

$$p_i = \beta' X_i + v_i$$

Where: p is the probability of engaging in corruption, i denotes the individual, β is a vector of coefficients, X vector of factors and v represents the unobserved error term.

The factors denoted by X can be divided into 3 sets: individual incentives, social context and perceptions. The first set accounts for monetary and non-monetary incentives juxtaposed against the probability of being caught and punished. Social context reflects the system of norms and values in the society and prevailing behaviour. The final set of factors represents individual perceptions about self and others, which are also likely to be a product of social and cultural contexts (Searle 1995). I believe that variables used in the empirical model indirectly capture those factors, for instance, social context is reflected by city, country and neighbourhood one lives in.

4.2.2 Corruption in the Post-communist Context

Given a very unique context of the countries in this sample, namely their communist past, the analysis of corruption in the context of transition may need an additional caveat. Holmes (2006) argues that psychological, cultural and system-related factors affect corruption. Therefore, the legacy of communism and path dependency must be taken into account. The communist heritage and old habits and their impact on corruption has been thoroughly analysed by Karklins (2005). The author claims that the corrupt behaviour is shaped by institutional incentives and the structure of

the political system. The main characteristics of the Soviet regime that have been likely to affect the levels of corruption are the following: 1) monopoly of the party when it comes to decision making; 2) limited private ownership and state control of means of production; 3) extensive use of private networks at all levels of the society. Further, the state engaged in a micro-management not only of the economy but also private life of its citizens leading to an 'administered society'.

Karklins (2005) points out that although official civic activity was outlawed, informal networks flourished. As a response to scarcity, ordinary citizens were involved in everyday corruption and blat networks just to get the necessities and go around formal, often burdensome, procedures (Ledeneva 1998). Karklins further suggests that for many citizens, breaking formal rules was a daily necessity as otherwise access to goods was impossible. It has been even argued that blat and corruption had economic advantages as they made the system more responsive to household demands (Millar 1985). Similarly, at the higher levels elite networks, clientelism and patronage were just as embedded. Further, Karklins argues that one reason why corruption and blat persist is the continuing relative scarcity of goods and services such as high quality medical care, universities as well as merit-based appointments to higher level and government jobs. The practices and attitudes learnt during Soviet times contributed to a wide disregard for law and formal rules as well as the authorities. They were also carried into the transition as people often did not know or could not imagine any other way of behaving. This, in turn, had an impact on institutions and civil society building in the early stages of transition.

Further, Boisot and Child (1996) assert that culture and traditions in many transition economies may favour informal activities. They argued that establishing well-functioning formal institutions bears high infrastructural and institutional costs. Puffer et al. (2010) focused on the cultural influence as a key institutional factor affecting entrepreneurship in Russia. In the context of entrepreneurship, they claim that informal and locally understood arrangements are more likely to be preferred by local population. It has been pointed out that institutional reforms have been slow, inefficient and lacked direction (Bartlett & Rangelova 1997; Puffer et al. 2010), hence the security of the property rights, independence and effectiveness of judiciary as well as effective enforcement of laws has not been guaranteed. These institutional voids create high uncertainty and instability leading to reliance on informal institutions to facilitate transactions (Ahlstrom & Bruton 2006; McCarthy & Puffer 2008). They also create an environment where officials are able to ask for unofficial payments and gifts without fear of detection or punishment.

4.3 Literature Review and Hypotheses

Much of the extant empirical work focuses on the effects rather than determinants of corruption. Further, the majority of the evidence relies on country level data, which does not address the determinants at individual and neighbourhood level. Macro level data is more suitable for addressing questions such as effects of corruption on development and growth across countries. On the other hand, individual level data is much more appropriate for an investigation of particular contexts such as features of neighbourhoods, local norms of behaviour and individual characteristics related to attitudes and beliefs. In terms of mechanisms to fight corruption, country level measures can only assess cumulative effects rather than more nuanced effects applicable to individuals with certain characteristics and in particular local contexts.

Guerrero and Rodríguez-Oreggia (2008) analysed the determinants of the individual decision to commit corruption in Mexico. They employed two different methodologies to analyse the phenomenon: a quantitative survey complemented by qualitative interview-based analysis. The paper aimed to analyse how incentives, perceptions and social context affect the decision to engage in corruption. The results suggest that wealthier and better educated individuals are more likely to engage in corruption. This may be because people obtain wealth through corruption or may be able to afford better education due to corruption within the family and across generations. Furthermore, a proxy for being caught seems to be irrelevant, exposing disregard for the law and regulations. However, there seems to be some evidence that moral and ethical understanding of the situation seem to play a role in decision making. Finally, the quality of the state institutions seems to be highly relevant.

In the qualitative part of their study Guerrero and Rodríguez-Oreggia (2008) found that there is a persistent perception in the population of the legal and institutional framework as 'flexible, negotiable, non-legitimate and optional, and people regard it as a last resource to regulate social conduct' (p.370). The qualitative investigation was only conducted in the Mexico City, as the authors claim corruption may be most widespread there.

Belousova et al. (2011) undertook a meso level study of determinants of corruption across Russian regions. The authors used 2002 data for 40 of 89 regions from the Russian arm of Transparency International. They found Moscow and St Petersburg to have higher levels of corruption but lower perception of it. Level of urbanisation, on the other hand, was found to reduce perceptions but not the incidence. Furthermore, in general, regions with higher income per capita exhibited lower levels of actual corruption.

4.3.1 Corruption and Technology

Most of the recent studies of the effect of technology on corruption focus on two streams: the effect of access to Information Communication and Technologies (ICTs) and e-government. The first strand of research looks mainly at access to the internet among the population as a source of information as well as a forum to report and discuss corruption. There also exists a small body of literature on the effects of mobile phone penetration and corruption, particularly in rural areas of developing countries. Most studies focused on the country level effects of technology due to the data on technology being available mainly on macro level. The second strand, which is not pursued in this chapter, considers e-government solutions involve moving certain government services such as licence and documents' applications online to be executed by the applicant. The direct contact between officials and the public is reduced to a minimum, which should also reduce the level of corruption. The literature on e-government is only mentioned here to illustrate how the technology may facilitate developments such as e-government solutions to tackle corruption in a top-down manner.

The evidence on the effect of internet access on corruption and corruption perceptions across countries generally supports the view that the internet helps to reduce corruption. Goel et al. (2012) performed a unique analysis of corruption awareness across 150 countries whereby they compared a number of internet searches for keywords "corruption" and "bribery" with "country name" in Google and Yahoo search engines. Their results indicate that per capita internet hits related to corruption correlate negatively with corruption perceptions and incidence. This may be due to greater awareness of what corruption is, where one may encounter it, how to report it and where to share experiences.

Another country-level study of the effect of internet adoption (Lio et al. 2011), as measured by internet users per 100 inhabitants, from The World Telecommunication/ICT Indicators Database across 70 countries between 1998 and 2005, revealed that the effects of internet adoption on corruption reduction are positive but relatively small. The authors conclude that the internet has proven its capacity for reducing corruption but its full potential is yet to be realised. The results may be weak because corruption perception was used as a measure of corruption, while it would be interesting to see the effect it has on the incidence of corruption.

The effect of the access to mobile phones on corruption in Africa has been studied by Bailard (2009). He argued that access to mobile phones may reduce corruption by strengthening the oversight and punishment mechanisms and reducing the secrecy around corrupt practices. It also allows access to information and gives the opportunity to bypass face to face contact with officials. Cross country

regression revealed a significant negative correlation between degree of mobile phone penetration and perception of corruption. Further, across 13 Namibian provinces, phone signal coverage was shown to reduce perceptions of corruption at individual level.

Although e-government solutions are not of interest in this paper, it is important to highlight that Information Communication and Technologies (ICTs) provide opportunities not only to citizens to gain information and learn more about corruption but also for governments to intentionally reduce face to face interactions between officials and the public or change social attitudes towards transparency and corruption (Bertot et al. 2010). Reducing direct contact may be a good way to start re-writing the informal rules that corruption is embedded in. It should be remembered that existence of e-government is preconditioned by existence of internet and telephone infrastructures as well as physical hardware such as computers or telephones. Therefore, it is not surprising that just like the access to internet and mobile phones, e-government has been found to significantly reduce corruption (Andersen 2009).

This paper analyses effect of the access to technology on the incidence of corruption of government officials and courts at individual and neighbourhood level. Therefore, I postulate the following hypotheses:

Hypothesis 1a. Individual and neighbourhood level access to technology decreases the individual probability of bribing an official.

Hypothesis 1b. Individual and neighbourhood level access to technology decreases the individual probability of bribing courts.

4.3.2 Corruption and the City

The size of the city one lives in is likely to exert a significant impact on the amount of corruption one experiences and is exposed to. Most studies that differentiated between the city sizes, did not consider the differential effect that capital city may have. I postulate that larger cities and in particular capitals see more corruption for several reasons. Firstly, large cities are centres of economic and bureaucratic activity. Most of the state and provincial offices are located in larger cities, therefore higher concentration of bureaucrats can be expected, which may make them harder to monitor. In addition, most of the courts, especially higher courts tend to be located in larger cities. Secondly, large cities are more anonymous and both payers and takers may find it easier to get away with corruption. Further, unlike small towns and villages, where everyone knows each other, it is harder to influence officials in non-monetary ways, for instance, through their families or

friends. In smaller towns, the population is likely to know the officials and their families, therefore any misconduct on their part would spread within the community very quickly and could be punished informally by means of open criticism, hostility or ostracism.

Capital cities are usually a large or the largest city, where the concentration of courts and offices is highest. Capital cities are also often the main economic hubs where many businesses are based. The location of a business or its headquarters in a capital city, unless reliant on specific local resources, may make commercial sense as the proximity to various government offices is closest, making it potentially easier to interact with public offices. On the other hand, public officials may assume that businesses based in the capital city are there for a reason – they are wealthier and need to be there because of the closeness of public bodies. This is likely to fuel corruption in capital cities more than elsewhere.

Hunt (2004) was one of the first to consider city size as an important determinant of corruption in light of her quid pro quo argument. She averred that in large cities, the formation of trust networks is impaired because, especially in developing countries, cities are constantly growing, which hampers individual interactions and community spirit, encouraging corruption. The quid pro quo idea relies on the fact that in stable communities, e.g. small towns and neighbourhoods, corruption declines as people create alternative, trust-based, networks. These networks work as well as or even better than bribery and are more long lasting. In the empirical part of her paper, she was able to confirm that inhabitants of small towns are 7 percentage points less likely to bribe than those living in cities with over 1 million people. She also reported that the gap declines as the city size increases.

Mocan (2008) used the same data source as Hunt (2004) but considered a larger sample of countries. He reported similar results, at least in terms of significance and the direction of the relationship between corruption and city size. His results confirm that living in a small or medium city is associated with reduced risk of being asked for a bribe as compared to living in a large city. More precisely, his empirical results suggest that living in a medium-sized city is associated with a 0.7 percentage point reduction in the risk of being asked for a bribe as compared to a large city. As a proportion of a sample mean of bribery, this translates to a staggering 17 per cent decrease.

Finally, given that capitals are usually large cities, it is assumed that the above evidence of higher corruption levels in larger cities is true for capitals. The corruption may be even higher due to particularly large concentration of official and business activity. The evidence distinguishing between large cities and capitals is scarce; however, Belousova et al. (2011) found that corruption in Moscow, the capital of Russia, as well as St Petersburg (a large city) is higher than in other regions.

I therefore posit the following hypotheses regarding city size and corruption:

Hypothesis 2a. The larger the city the higher the probability of officials' corruption.

Hypothesis 2b. The larger the city the higher probability of court corruption.

Hypothesis 2c. There is more corruption of both courts and officials in capital cities.

4.4 Data and Methodology

4.4.1 Measurement of Corruption

There is no single or best measurement of corruption. The measurement largely depends on the definition one adopts, with most of the existing measures being most suitable for simple definitions of 'abuse of public office for private gain' as well as the purpose of the study. A World Bank Study (Kaufmann et al. 1999) lists 11 potential sources of corruption and governance data as of 1999 (Appendix 1). Available measurements of corruption can be categorised as follows: 1) representative surveys of service users, 2) expert assessments, and 3) composite indices (Ledeneva 2009a). The first category is largely based on surveys of firms and executives such as EBRD BEEPS and the Executive Opinion Survey by the World Economic Forum (WEF) or surveys of households such as the World Values Survey (WVS), International Crime Victimization Survey or EBRD Life in Transition Survey (LiTS). These surveys are very useful measures of administrative corruption but do not provide any information on state capture, the effort of firms to influence laws, policies, and regulations to their advantage (Ledeneva 2009a).

The second category of surveys includes, but is not limited to, the International Country Risk Guide (ICRG), Economist Intelligence Unit (EIU) or World Bank Country Policy and Institutional Assessment (CPIA). These offer expert assessments of corruption levels in particular countries which may be subject to experts' biases. Further, the type of information and angle of the assessment they offer may be aimed at a particular audience, for example, international investors (Ledeneva 2009). The third category, the best example of which is the Corruption Perception Index (CPI), are composite indices, which combine information from different sources to come up with a single measure of corruption. The problems with those often include lack of transparency as to how they are created including weighting of different categories and sources of information.

This paper relies on the survey data from EBRD LiTS, which includes information about the actual corruption incidence. It will focus on the corruption of courts and corruption of public officials. With the methodology used here, it will be possible to focus on the incidence of corruption among the

people who used the service rather than among the general population. The fact that this paper focuses on incidence of particular type of petty corruption at individual level means that I may be able to avoid problems associated with common measures of corruption.

4.4.2 The Data

4.4.2.1 Dependent Variables

This paper analyses incidence of corruption of officials and in courts at individual level. Two dependent variables – corruption of officials and court corruption - are derived from the Life in Transition Survey questions 6.02 and 6.04. The first question asks: 'During the past 12 months have you or any member of your household used these services?' with the two services of interest in this paper being: b) 'Requested official documents (e.g. passport, visa, birth or marriage certificate, land register, etc.) from authorities?' and c) 'Gone to courts for a civil matter'. It allows us to determine respondents that came in contact with the respective public offices. Question 6.04 asks each respondent that used officials or courts 'Did you or any member of your household make an unofficial payment or gift when using these services over the past 12 months?'

The responses to each question are coded as binary variables and the second question (6.04) is only asked if the answer to the first on (6.02) is 'Yes' (coded as 1). Both variables are used to compute the Heckaman model whereby the selection equation determines the likelihood of using officials or courts and the second equation, which is of main interest in this paper, estimates the determinants of corruption among those who used the two public services mentioned. These variables are unique in that they measure incidence, rather than perception, of corruption at individual level across 30 transition economies. Also, the data allows to measure corruption accurately where the level of corruption is a percentage of people who made an unofficial payment or gift out of those that came into contact with the officials or courts rather than among the general population.

4.4.2.2 Independent variables

In this analysis only exogenous individual level variables and their PSU averages are included. The summary table of all variables may be found in Appendix 2. The main explanatory variables relate to the hypotheses presented above.

The household roster of the LiTS survey asks household heads questions about household ownership and access to particular items that are often subsequently used in the wealth indices. These include

ownership of a car, bank account, computer, secondary residence, mobile phone and access to the internet. Out of those, three variables that reflect the level of access to technology in each household, were selected: ownership of a computer, mobile phone and access to the internet. Then, a scale including these variables was created. The Cronbach-Alpha test confirmed the reliability of the technological scale to be 0.74. In 2010 Uzbekistan, Tajikistan and Kyrgyzstan scored the lowest on the scale while Czech Republic followed by Slovenia and Slovakia the highest.

PSU-level averages of the index were included to account for the neighbourhood effect. It is expected that even if one scores low on the scale but lives in a neighbourhood that scores high, he/she would still benefit from the cumulative effect and is likely to have easier access to technology through friends and neighbours.

The city size, not originally identified in the LiTS survey, was manually added to the dataset based on the city names and regions provided in the dataset. The problems encountered during the procedure included: there was more than one village or town by the same name in the same region; village was too small therefore there was no record of it on the internet; the name of the city was modified by STATA due to the inclusion of special characters; the whole region was included as a PSU rather than particular town or village (particularly in Estonia).

Since I was particularly interested in the size of the place, the first and second problems were not too important, where no data was available, I included a low, arbitrary number usually equal to the lowest recorded population number in a village in that country. Where there was more than one village of the same name, a random one was selected. They were all likely to have a similar population; therefore, for the purpose of this study, it did not matter which one was chosen. The third problem was more serious, however STATA coded particular characters of a given language in the same way, therefore it was often possible to recognise the pattern. The final problem mainly occurs in Estonia and a handful of other very small or scarcely populated countries and regions within countries. This means that the interviewers considered entire regions as PSUs rather than a village, or part of a city. However, given that the population size of such region rarely exceeded 30,000 people, I decided to include these regions in the sample.

After collecting and cleaning the data, it was divided into three quantiles. This means that all sizes were sorted from smallest to the largest and the sample was divided into three equal portions (terciles) of about 12,800 observations each. The first tercile was labelled as a small town, second as medium and the third as large. The division is rather arbitrary; however, there does not seem to be a single recommended size of the settlement hierarchy. A commonly cited hierarchy was devised by

Doxiadis (1968), however this has been criticised especially because the settlement sizes in particular areas and countries depend on general population size as well as population density.

Finally, a dummy denoting a capital city was included as it is expected that both the usage and corruption in capital cities are higher due to the concentration of the services and bureaucrats.

4.4.2.3 Control Variables

Several standard control variables previously applied by by Hunt (2004) and Mocan (2008) have been used. Individual level as well as psu averages of all control variables were included to control for the peer effect. I included a measure of wealth, which in this case is consumption variable. LiTS provides consumption figures in local currency for following categories: a) food, beverage and tobacco; b) utilities (electricity, water, gas, heating, fixed line phone); and c) transportation (public transportation, fuel for car). The expenditure for all categories was added up and converted into dollars at an average 2010 rate. The reasoning behind use of wealth measure is that wealthier people are more likely to use the services and according to the corruption literature (Mocan 2008), are more likely to bribe.

Gender and age were also added as it has been confirmed in the literature that females as well as young and old people tend to bribe or be asked for a bribe less (Hunt 2004; Mocan 2008). Hunt (2004) further argued that older people are more likely to have more extensive networks therefore they can get things done through networks rather than bribery. The level of education was also included as it would be expected that more educated people are more aware of damaging effects of corruption, however, they may also belong to the elites or belong to the same circles as the officials. Finally, distance from the capital was controlled for. It can be argued that the further from the capital the lower the concentration of the users of government services. On the other hand, the control of officials by the centre may be weaker the further away from the capital; therefore, they may be more likely to ask for unofficial payments or gifts.

4.4.2.4 Selection Equation

According to Heckman principles, the selection equation differs from the main equation in that it includes a number of identifying (selection) variables that affect the use of courts and officials. Therefore, in the first (selection) equation, dummy variables denoting occupational categories (employed for wages, self-employed and employer with 'not in employment' being a reference

category) were added. Table 16 presents the categories considered as well as number of respondents in each category and percentage of the total number of respondents. As in chapter 3, differentiation was made between self-employed, who are, in essence, sole traders and business owners who employ at least one person, who is not a family member. The construction of occupational category variables has been presented in Section 3.9 – Appendix 2 and 3. Also, the discussion of the rationale behind creation of these is explained in section 3.4.1.1.

Aidt (2009) argued that entrepreneurs are more likely to come into contact with various officials in order to obtain necessary licences and permissions to run their business. There are relatively few empirical studies of the use of government services among businesses and non-businesses as it is often taken for granted that the nature of activities may require business persons to face the officials more often.

Entrepreneurs and business owners, because of the nature of their work, are also more likely to encounter a conflict that may require court intervention. For instance, in Romania 66 per cent of firms draft contracts with a view to taking legal action if necessary, and 89 per cent of firms would be willing to use courts against customers if necessary (Murrell 2003). In 2000, 73 per cent of the firms surveyed by Murrell (2003) were plaintiffs in a commercial lawsuit. Further, based on a survey of 500 Russian companies and their perceptions of the performance of the legal system, Frye (2002) found that the view of the effectiveness of those courts was high for cases involving private parties.

Table 16. Occupational categories

Category	Frequency	Percent
Not in employment	15,571	48.46
Employed for wages	14,047	43.72
Self-employed	1,382	4.3
Business owner	1,133	3.52
Total	**32,133**	**100**

4.4.3 Methodology

The construction of the dependent variable is two-stage. First, the respondent answers whether in the past 12 months he/she used officials or courts and then, if the answer is affirmative then he/she is asked whether he/she encountered corruption in the process. This design indicates that while the service users have been 'selected' randomly, those who experienced corruption are not a random group. They are a part of the group of service users or the 'treatment group' and not the general population. A simple example illustrates this point. In Kyrgyzstan 35 per cent of respondents (348

out of 984) used officials in past 12 months. Out of those who used officials, 75 per cent (258) admitted being asked for a bribe or a gift. If one just measures the occurrence of corruption in the population, the corruption incidence would come to 26 per cent (258/984), which does not reflect the true situation. If all survey respondents used the officials we should expect that the corruption levels would be closer to those reflected by the sample of service users.

This must be accounted for in the model and the Heckman selection model is the best tool to deal with the sample selection dilemma. It allows the specification of two equations: the first predicts the determinants of use of service and the second determines the corruption. In the first equation, it is also desirable to find a set of exogenous (identifying) variables that are correlated with the selection process yet uncorrelated with the dependent variable in the structural equation. I have selected dummy variables denoting occupational categories: employed for wages, self-employed and business owner/employer with not in employment being a reference category. PSU averages of each have also been included to control for the neighbourhood effects.

The formal Heckman selection model can be denoted as follows:

Outcome equation:

$$y_i = x_i'\beta + u$$

It is assumed that y_i is observed only if a second unobserved latent variable exceeds a particular threshold:

Selection equation:

$$z_i = w_i'\alpha + e_i$$

$$z_i = \begin{cases} 1 if z_i > 0 \\ 0 if z_i \leq 0 \end{cases}$$

Due to the nature of the variables, I use a bivariate probit model with selection, where there are two probit models with correlated error terms. There are two independent binary outcome variables y_j, j=1, 2 . These represent two interrelated decisions by the same actor. Therefore, in the following model:

$$y_1 = x_1\beta_1 + \epsilon_1$$

$$y_2 = x_2\beta_2 + \epsilon_2$$

where y_j are unobservable and related to the binary dependent variables y_j by the following rule:

$$y_j = \begin{cases} 1 if y_j & > 0 \\ 0 if y_j & \leq 0 \end{cases}$$

If the standard errors of the two probit models are uncorrelated, the models can be estimated separately. However, in this case the errors are related in the following way:

$\epsilon_{1i} = \eta_{1i} + u_{1i}$

$\epsilon_{2i} = \eta_{1i} + u_{2i}$

Therefore, the errors in each model consist of a unique part u_i and a part that is common for both η_{1i} making the error terms related to each other.

The model has been complicated further by introducing a multilevel framework whereby individuals represent level 1 and PSUs level 2. This is because the sampling technique employed in LiTS is 2-stage; first, in each country 50 PSUs are selected and then in each PSU approximately 20 households are selected. Therefore, the data has a hierarchical structure whereby individuals represent level one, PSUs level two and countries level three. Because of the design of the survey, individuals are not randomly distributed across and within countries, rather, individuals living in the same neighbourhoods are more likely to exhibit similar characteristics or patterns of behaviour. Failure to account for the structure of the data may lead to unreliable coefficients and error terms (Rabe-Hesketh et al. 2005). To best account for the multilevel structure of the data, I use STATA module to implement conditional mixed process estimator (CMP) devised by Roodman (2013).

A two-level (individuals and PSUs) model for individual *i* in area *g* is specified as (following the notation in Borgoni & Billari (2002)):

$Pr(Y_{1gi} = 1 | X_{1g}, U_{1g}, V_{1gi} = X_{1gi}\beta + U_{1g} + V_{1gi}$

Y_{1gi} is only observed if $Y_{2gi} = 1$

$Pr(Y_{2gi} = 1 | X_{2g}, U_{2g}, V_{2gi} = X_{2gi}\alpha + U_{2g} + V_{2gi}$

I assume that in both equations, $U_g = (U_{1g,} U_{2g})$ is a bivariate normal random variable with a mean 0 and standard deviations (τ_1 , τ_2) and a correlation coefficient $\theta, g = 1, \dots, G$, where G is the number of PSUs. θ is therefore PSU-level coefficient. $V_{gi} = (V_{1gi,} V_{2gi})$ is also assumed to be a 0-mean bivariate normal variable with standard deviation (σ_1 , σ_2) and an individual level correlation coefficient ρ. I have constrained individual level standard deviations at 1 due to computational time and complexity.

Selection equation:

$$Use\_of\_officials_{ij}/Use\_of\_courts_{ij} = \alpha_{0j} + \alpha_{1j}employed\_for\_wages_{ij} + \alpha_2 psu\_employed\_for\_wages_j + \alpha_{3j}self\_employed_{ij} + \alpha_4 psu\_self\_employed_j + \alpha_{5j}business\_owner_{ij} + \alpha_6 psu\_business\_owner_j + \alpha_{7j}technological\_access_{ij} + \alpha_8 psu\_technological\_access_j + \alpha_{9j}medium\_city_{ij} + \alpha_{10}psu\_medium\_city_j + \alpha_{11j}large\_city_{ij} + \alpha_{12}psu\_large\_city_j + \alpha_{13j}capital_{ij} + \alpha_{14}psu\_capital_j + \alpha_{15j}consumption_{ij} + \alpha_{16}psu\_consumption_j + \alpha_{17j}gender_{ij} + \alpha_{18}psu\_gender_j + \alpha_{19j}age_{ij} + \alpha_{20j}age\_squared_{ij} + \alpha_{21}psu\_age_j + \alpha_{22j}higher\_education_{ij} + \alpha_{23}psu\_higher\_education_j + \alpha_{24j}distance\_from\_capital_{ij} + \alpha_{25}psu\_distance\_from\_capital_j + e_{ij} + g_j$$

Outcome equation:

$$Corruption\_of\_officials_{ij}/Corruption\_of\_courts_{ij} = \beta_{0j} + \beta_{1j}technological\_access_{ij} + \beta_2 psu\_technological\_access_j + \beta_{3j}medium\_city_{ij} + \beta_4 psu\_medium\_city_j + \beta_{5j}large\_city_{ij} + \beta_6 psu\_large\_city_j + \beta_{7j}capital_{ij} + \beta_8 psu\_capital_j + \beta_{9j}consumption_{ij} + \beta_{10}psu\_consumption_j + \beta_{11j}gender_{ij} + \beta_{12}psu\_gender_j + \beta_{13j}age_{ij} + \beta_{14j}age\_squared_{ij} + \beta_{15}psu\_age_j + \beta_{16j}higher\_education_{ij} + \beta_{17}psu\_higher\_education_j + \beta_{19j}distance\_from\_capital_{ij} + \beta_{20}psu\_distance\_from\_capital_j + u_{ij} + v_j$$

4.4.4 Descriptive Statistics

Selection equation: Use of officials

The dependent variable in the first selection equation is use of officials in order to obtain documents such as licences or passports. About 23 per cent of respondents across all countries admitted that they or their household members used officials to obtain documents (Appendix 3). However, the usage varies from below 10 per cent in Turkey, Estonia and Poland to over 50 per cent in Kosovo and Macedonia. It appears that countries that would be expected to have better regulatory environment have lower levels of the use of officials (around or below 20 per cent). The measure may reflect administrative efficiency and perhaps even ease of doing business. In addition, higher levels of necessary interactions with officials may reflect state capture as regulation may be created to increase red tape.

However, it may reflect the organisation of the administration within the country as there are quite large differences even between highly developed comparator countries (Germany – 10.53 vs. Sweden – 31.69). Further, high scores for Kosovo may reflect the fact that it is a very young country

that is still in the process of establishing its administration as well as issuing documents as a sovereign entity. I have also compared GDP per capita in purchasing power parity to the average country level use of officials (Appendix 4) and there seems to be a somewhat curvilinear relationship between the two variables. This means that countries at lower levels of GDP seem to have higher levels of interactions with officials but this decreases as the GDP per capita goes up and then increases again after a certain threshold has been passed (circa $20,000).

The use of officials by occupational category has also been examined (Appendix 5). On average, across all countries, unemployed people use officials least and business owners most. In Albania, Kosovo and Macedonia businessmen have to face the officials the most (over 55 per cent used them in 2010) and relatively little in countries like Russia, Moldova and Turkey (below 14 per cent). Interestingly, in around 37 per cent of the countries in the sample, the self-employed must use officials much more than the business owners. This may suggest that the environment is made easier for larger businesses to operate and that they may have established relations with officials. It may also reflect the fact that sole traders' firms may be younger, therefore, they may need to use government services more for documents related to start-up and expansion.

Selection equation: Use of courts

The entrepreneurs and business owners may be more likely to use courts as the nature of their jobs makes disputes more likely. Similarly to the use of officials, a selection equation that determines the usage of courts among various occupational categories, is estimated. The use of courts across countries only comes to 4.3 per cent with some notable exceptions such as Kosovo (25 per cent), Albania, Macedonia and Slovenia exceeding the average almost twice and Bulgaria, Bosnia, Estonia and Hungary where the use of courts is less than 2 per cent (Appendix 3). Potential explanation for very low use of courts may be that the alternative dispute resolution system is very efficient and the regulations are so well defined that disputes are solved outside of the court. Alternatively, as may be the case in Bosnia, the court system may be inefficient and corrupt; hence people are not willing to engage in any legal battles. On the other hand, excessive use of courts may suggest that the rules are not clear so that it is not possible to resolve conflicts outside of court. However, a high usage may suggest that there is a degree of confidence in the legal system.

When disaggregated by occupational category, it is clear that business owners use courts most often (Appendix 6). There seem to be many countries where the self-employed have not used them at all but, it may be a matter of a small number of observations for that particular category in those

countries. Yet, it should be perhaps accepted that the self-employed in those countries would use the courts less often. The legal system may be biased against them, or more plausibly, it may be unaffordable for them to launch and fight a claim in court. The use of courts has also been contrasted with GDP per capita measures (Appendix 7). However, there does not seem to be much of a relationship between the two variables.

Outcome equation: Corruption of officials and courts

When looking at the corruption incidence among the cases where the service was used in the past 12 months, several countries stand out as particularly corrupt. Over 60 per cent of respondents in Azerbaijan and Kyrgyzstan, who had used courts or officials, reported that they had to make an unofficial gift or payment (Appendix 8). Further, Albania, Tajikistan and Ukraine reported figures above 30 per cent for each of the institutions. However, the relationship between corruption of officials and courts seems to be linear; in countries where there is more of one there is more of the other as shown by the scatter plot in Appendix 9.

Kosovo, a notable case, which had particularly high usage of both services, appears to have rather low corruption figures. Therefore, if it is not the case that respondents were afraid of reporting corruption, it may be assumed that perhaps the administration in this country is still being developed. The fact that it is a new country means that citizens may need new documents, which may lead higher usage of officials. High usage of courts may also be linked to the separation as property and other civil disputes may arise in such situations.

Corruption figures broken down by occupational category reveal that business owners tend to be exposed to more official corruption while the self-employed engage more in court corruption (Appendix 10 and 11). In addition, the unemployed seem to be a notable category as the corruption figures among them seem to be higher than among those in paid employment. The average figure for court corruption is particularly high among this category (17 per cent). These figures must be treated with much caution as sample sizes for business owners and the self-employed who used the services and engaged in the corruption are low. The self-employed and business owners constitute about 8 per cent of the total sample (2,517 respondents out of the total of 32,133); therefore, for many countries the corruption figures for either service are 0. In reality, few entrepreneurs and employers engaged with those services (sometimes as few as 2 or 3 in particular country sample).

On the other hand, those not in employment are very well represented in the sample (approximately 49 per cent or 15,619 respondents), which makes it more likely that the service users were captured.

Further, out of the service users it was more likely that those who experienced corruption would be captured. Finally, an interesting relationship is revealed between the GDP per capita in purchasing power parity and corruption incidence (Appendix 12 and 13). An L-shaped relationship appears to exist between the GDP and corruption. It seems like the countries at lower levels of development have large amounts of corruption but with development the corruption levels decrease. In this sample most of the countries are at the lower to middle end of income per capita scale; therefore, they are clustered in the bottom left corner of the graph.

4.5 Results and Discussion

4.5.1 Empirical Results

Table 17 presents results of the multilevel models described above. Model 14 considers the corruption among officials in a particular scenario of trying to obtain documents such as passports and licences. Model 15 considers the incidence of corruption among the users of civil courts. The results for the use of officials and courts equations are reported in Appendix 14. The selection equations, as mentioned above, contain occupational categories as the selection variables that determine the usage. The results presented in Appendix 14 confirm that business owners are more likely to use officials to obtain documents. However, the self-employed seem to be no more likely to use officials than those employed for wages or the unemployed. When it comes to the use of courts, the results suggest, again, that business owners are more likely to engage in civil disputes. However, in the neighbourhoods where there are more self-employed and more people employed for wages there seems to be significantly lower usage of courts as compared to the neighbourhoods where unemployment prevails.

Out of the users of the officials' services, who are the people that are asked for bribes? The results suggest that those who have access to technology engage in corruption of officials less than others. Furthermore, living in a neighbourhood which is more technologically connected seems to have a negative effect on the incidence of corruption. Additionally, inhabitants of capital cities are less corrupt than those living in small cities while inhabitants of other large cities seem to be more corrupt than those living in small cities. All results for the official corruption equation are highly significant ($p<0.01$). Similarly, the incidence of corruption among the court users is lower among those with better access to technology and in better connected neighbourhoods. In addition, in capital cities, as in the case of corruption among officials, the court corruption seems to be lower.

Interestingly though, in neighbourhoods, with higher numbers of highly educated people, corrupt activities are higher.

Table 17. Regression Results

	Level 1: Individual Level 2: PSU			
	Model 16		Model 17	
VARIABLES	Coef	St Err	Coef	St Err
	Officials corruption		**Court corruption**	
Technological access	-0.697***	(0.162)	-0.896***	(0.240)
Technological access (PSU average)	-2.752***	(0.738)	-2.041*	(1.169)
Medium city	0.140	(0.129)	-0.00917	(0.185)
Large city	0.498***	(0.153)	0.0543	(0.218)
Capital	-0.446**	(0.198)	-0.584*	(0.306)
Control variables				
Consumption	-5.88e-07	(4.43e-06)	-4.95e-06	(7.72e-06)
Consumption (PSU average)	-2.34e-05	(3.65e-05)	1.22e-05	(4.64e-05)
Gender	-0.0326	(0.105)	0.157	(0.158)
Gender (PSU average)	0.644	(1.321)	2.053	(1.813)
Age	0.00680	(0.0190)	0.0212	(0.0310)
Age squared	-0.000169	(0.000215)	-0.000367	(0.000351)
Age (PSU average)	-0.0411	(0.0254)	-0.0538	(0.0400)
Higher Education	0.00679	(0.130)	-0.189	(0.195)
Higher education (PSU average)	0.930	(1.103)	3.733**	(1.725)
Distance from capital	2.34e-05	(0.000145)	-0.000171	(0.000210)
Constant	1.308	(1.415)	0.594	(2.374)
Level: country-psu				
St dev (official/courts corruption)	0.414***	(0.0540)	0.0713	(0.169)
St dev (official/courts use)	-0.275***	(0.0239)	-0.471***	(0.0328)
Cross-eq corr (courts corruption & use)	0.190***	(0.0507)	-0.155	(0.106)
Level: residuals				
Cross-eq corr (courts corruption & use)	-0.00140	(0.0888)	0.0206	(0.131)
Observations	27,288		26,649	
Log Likelihood	-15476		-5053	
df	36		36	

Standard errors in parentheses ***
p<0.01, ** p<0.05, * p<0.10, +p<0.15

4.5.2 Discussion of Key Findings

In this section, I will attempt to analyse and discuss the results in the light of hypotheses as well as literature to date. First, I will discuss the results of selection equations as this may help to draw a fuller picture of who engages in corruption. Then, I will turn to the variables related to the hypotheses and control variables. I will then review the limitations of the paper and suggest several policy recommendations.

4.5.2.1 Selection Equations - Use of Officials and Courts

With respect to the results of selection equations, it appears that business owners are more likely to use both courts and official services. This may be because of the nature of their job as they are more likely to need permission and various documents related to running of their businesses. Further, as they are likely to interact a lot with other parties such as suppliers, buyers, a possibility of a dispute is also relatively high. It may even be considered a part of the business; hence, the usage of courts is more likely. This may be particularly true in the transition economies, where business relationships are a relatively new phenomenon and, in some countries, are still developing to match international standards.

These results supports observations of Murrell (2003) for Romania, where he found that in 2000, 73 per cent of the firms surveyed were engaged in a civil lawsuit. It is also encouraging to find that in transition economies business people have enough faith in the legal system to resort to it for dispute resolutions. The effectiveness of the legal system for business purposes is to some extent measured by World Bank Doing Business Indicators (2014) and, in particular, the enforcing contracts sub-index. Many transition economies made some improvements between 2004 and 2014, which may be reflected in the results. Further, as some of the transition economies joined the EU or are aspiring to join, they are naturally forced to improve their judicial systems to comply with the EU standards. Those countries that are not part of the accession process are often trading partners of the EU as well as other developed countries, which puts pressure on the legal system to accommodate legal disputes in an efficient manner.

Although larger businesses seem to feel confident about using courts, it appears that the self-employed or areas with larger concentrations of self-employed, do not share this confidence. I have obtained very strong results suggesting that in those neighbourhoods the use of courts is much lower. This may be for several reasons; firstly, it may be the case that the court system is better prepared or designed to deal with larger companies rather than sole traders. It may also suggest that

larger companies have 'captured' the system to their benefit, which means that competition and entry may be hindered. Secondly, sole entrepreneurs may be simply too small to afford legal actions. Finally, subordinate employment or dependent self-employment (as discussed in chapter 3), which is a result of an increasing trend of outsourcing and subcontracting activities performed by many larger firms (Pedersini & Coletto 2009), has become very popular. This may mean that those who are self-employed are, in fact, indirectly employed by a larger company, hence may have less need to use the court system.

Further, wealthier respondents tend to use the officials' services more. This may be due to the fact that they are likely to be able to travel more, therefore need passports; they are also more likely to be concerned about having proper documentation certifying their assets and relationships. Finally, there seems to be a very clear relationship between age and court use in that older and younger people are less likely to use them. This is rather intuitive as they have less need to use them, often being outside the labour force. Furthermore, older people are likely to have accumulated more social capital to be able to deal with problems using their networks and life experiences.

4. 5.2.2 The Effects of Technology on the Incidence of Corruption

Technological access has a strong, significant and persistent effect on corruption and use of officials and courts. Technology seems to be effectively reducing corruption at individual and neighbourhood levels. Several studies have also shown that country-level internet connectivity and mobile phone coverage may have a positive effect on reducing corruption. However, due to availability of data, very few studies looked at the access to technology at individual and neighbourhood levels.

The technological access variable combines ownership of mobile phone, computer and access to the internet. The first item allows individuals to be connected; this means increased communication, information sharing as well as the possibility to check and verify information with others on the spot. It also allows more contact, possibly with anyone who may be of help any time anywhere. In addition, as shown by Bailard (2009) in rural areas and among the poor mobile phone is a very important tool. Ownership of a computer may be helpful when it comes to accurately filling in documents and applications as well as storing files and documents that may contain essential information. Furthermore, computer and mobile phone are necessary tools to access the internet.

The internet may be the most essential tool for fighting corruption at several levels. At the micro level, there are countless benefits to having internet access for corruption fighting purposes. Firstly, it allows greater access to information including information on individual rights when faced with

corruption. Secondly, it provides information as to what document application and court processes should look like including the timelines and the duties of various parties in the process (officials, individuals, lawyers, court officials). Further, information sharing on the internet is impossible to stop with forums, blogs, social media and other mediums helping individuals communicate their experiences and ask for advice. It also provides an opportunity to name and shame. Only countries with high levels of state capture are able to counter those 'grassroots movements' by censoring entire internet activity. Finally, only those connected to the internet have an opportunity to access any e-government platforms in existence.

At the macro level, although not explicitly analysed in this paper, governments and organisations can create platforms that reduce the need for face to face contact between officials and the public. The internet, mobile phones and computers are necessary tools for facilitating such solutions. Public offices may establish telephone lines and emails to deal with enquiries as the most basic solution that does not require sophisticated e-government software. Courts may also use the internet to store and publish information about cases and the judgements, making the decision making system more transparent and allowing the use of judgements from previous cases as guidance. More sophisticated e-solutions may include the use of internet by the courts to allow parties to submit information supporting their case as well as initiate procedures. Some preliminary hearings may be executed over the phone, which further allows arms-length procedures.

The results on the neighbourhood levels of access confirm the above. In the neighbourhoods where people are able to access information, the probability of engaging in corruption of officials and courts appears to be significantly lower. This is likely to affect those who personally have an access to technology and those who do not as they may benefit from information sharing and higher awareness at the community level. Those without access may be able to use the facilities of their friends and neighbours.

4. 5.2.3 The Effects of the City Size on the Incidence of Corruption

Individuals living in larger cities are more prone to officials' corruption than medium and small ones but not the corruption of courts. The first result is in line with the hypothesis and confirms that larger concentration of officials and greater anonymity that large towns provide encourage corrupt practices. There are relatively fewer community supervision mechanisms in large cities as the number of officials is too large and communities tend not to be as tight knit as in smaller towns. On the other hand, in many countries officials do not earn well and in larger cities costs of living are

higher. This may force some to seek bribes just so that they can survive and support their families. These results confirm the findings of Mocan (2008) and Hunt (2004). They may also lend evidence to Hunt's theory that in smaller cities people know each other better and their networks allow them to obtain resources through quid pro quo rather than bribery.

However, interestingly, capital cities seem to be different in that despite usually being classified as large cities, they seem to exhibit lower corruption levels for both courts and officials. This result may seem counter-intuitive especially in the light of the results on large cities. Belousova et al. (2011) found more corruption in Moscow and St. Petersburg when looking at corruption across Russian regions. Higher levels of corruption in capital cities would be expected due to concentration of public services and business activity providing even more opportunity for rent seeking and more anonymity to those who engage in corruption. At the same time, officials (including court officers and judges) working in capitals are closer to the centre of control, which for a number of reasons may want to exercise this control and keep corruption low. This may be to develop the economy and enhance the image of the city and the country in order to attract domestic and foreign businesses and investors. For this reason, capital cities tend to be better developed, especially in poorer countries.

Another possible explanation is discussed by Hernando De Soto (Soto 1990; Trillium Productions LLC 2012; The Power of the Poor 2016) with respect to his experiences in Lima and other developing countries. He stated that there seems to exist a 'system' in Lima that does not extend beyond the boundaries of the capital. He noticed that when talking to businessmen in Lima, very few expressed any concerns about corruption and bureaucracy. However, outside the capital, the businesses seemed to have much more difficulties with officials. This may be down to the structure of connections inhabitants of capital cities may have. Being based in the capital gives businesses access to certain networks and protection that are not available outside. These include any special relationships that may be built up with officials and knowledge of other business people.

4. 5.2.4 The Effects of Control Variables on the Incidence of Corruption

In the corruption equation, not many control variables seem to be significant. It appears that in neighbourhoods where residents are better educated, there is more court corruption. Mocan (2008) achieved the opposite result when looking at education at the country level. He argued that more educated people are more likely to be less tolerant of corruption as they understand its negative impact. However, more educated people are more likely to belong to not only intellectual but also

business elites within the countries. They are likely to be a part of the establishment, where corruption is not uncommon.

4. 5.2.5 Policy Implications

The policy recommendations stemming from this study are very clear. Technology seems to be the key to lowering corruption levels, therefore governments should strive to provide the support and infrastructure for technology including legal, physical and social infrastructure. The benefits of technology should be promoted and governments should not be shy of using it via e-government platforms. Further, a legal environment promoting competition in technology markets should be established so that services become cheaper and more accessible to everyone. The physical infrastructure may also need government support and, seeing the benefits of technology, any investment is justified. Moreover, there may be resistance from civil servants as well as the public towards greater use of technology as it requires learning new ways of doing things and promotes transparency, which may not be in the interest of some individuals (Piotrowski 2008; Bertot et al. 2010). Bertot et al. (2010) also warned that any efforts to promote openness to fight corruption are likely to be shaped by the cultural milieu of the country. Therefore, it may be worth promoting technology for individual use first before attempting to apply it to the bureaucratic apparatus.

Secondly, there seems to be a very clear problem with corruption in larger cities. It may be worth reviewing the remuneration and incentive structures among civil servants. In many countries low pay and relatively low detection likelihood will encourage many to engage in corrupt activities. It may be difficult in poorer countries to justify salary increases for officials; however, at the very least, realigning the incentives may prove to be a good start. The benefits of technology, discussed above, may be most prominent in larger cities; therefore it may be worth implementing progressive technologies there first. Further, often unequal growth of capital cities and other large cities, with the majority of resources committed to developing capitals, is likely to increase corruption in large cities. Therefore, a more balanced approach may be welcome.

Finally, the results revealed that while larger businesses do not shy away from using the courts, the areas where small sole traders prevail use them less. It may therefore be necessary to revise the accessibility of the legal system including the cost and time it takes to pursue legal action. Increased accessibility of courts or alternative dispute resolution options may positively influence the competitiveness and therefore benefit consumers. In addition, the innovation rates and small

business activity, all necessary to achieve sustainable growth, are likely to improve if the environment enables all players to protect their rights.

4. 5.2.6 Limitations

This section discusses the limitations of this paper and proposes solutions that may be employed in future research. Firstly, when it comes to measuring corruption, it seems that capturing incidence rather than perception may provide more accurate data. However, data on incidence may be biased as respondents may not be willing to admit that they engage in corrupt practices. It may be useful to ask participants whether people like them usually have to pay bribes or give informal gifts. Such formulation of the question makes it less personal and is already quite widely used in business environment surveys. Further, more sophisticated forms of corruption and quid pro quo are very difficult to quantify, therefore better measures need to be devised. Some surveys, such as Life in Transition ask whether one needs connections to find a decent job. If aggregated at regional or country level it may provide valid information about less explicit form of corruption. However, the variable measures an opinion rather than incidence and only captures a relatively narrow aspect of corruption.

Secondly, the way the survey asked about respondents' involvement in petty corruption may be problematic. More specifically, respondents were asked whether anyone in their household used the service and whether they were asked for unofficial payment or gift. This may apply to the respondent himself/herself or any other member of his/her family. It may also mean that while the respondent did not use any of the services, his/her spouse or children did. This should not have any impact on the analysis, especially in light of the selection by occupational status, as respondents involved in business activity may ask family members to deal with the officials on their behalf. Additionally, if the matter was solely related to another household member, there may be a reason to believe that they may be more likely to use the service and subsequently pay a bribe if they are a household member of a business owner or a self-employed person.

4.6 Conclusion

This chapter investigated individual propensity to engage in petty corruption among individuals living in transition economies. It views corruption as an informal institution – a deeply embedded pattern of behaviour that has become institutionalised without gaining legitimacy. I focused on two

angles; first – the effect of city size, and second – the effect of technology. The findings provide interesting information about the effects of local environment on corruption. Although living in a larger city positively affects the propensity to engage in corruption, the effect of living in a capital city is negative, suggesting that the institutional and social environment in capitals somehow differs from that in large cities. In addition, I find that individuals and localities with higher access to technology are less likely to get involved in corruption.

This paper contributes to the body of literature on corruption in transition economies by showing where petty corruption is concentrated and how to fight it. The findings suggest that relatively simple solutions, such as providing access to a telephone, computer and the internet at individual and neighbourhood levels can have very powerful effects on the likelihood of engaging in petty corruption. Further advantage lies in the fact that technological solutions do not necessarily require institutional reforms and may be outsourced to the private sector. More generally, the chapter enriches our knowledge of the effects of meso level institutions on the informal institutions at the same level.

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4.8 Appendices

Appendix 1. Sources of corruption and governance data

Source	Coverage (no of countries)
Standard & Poors DRI/McGraw-Hill	n/a
Economist Intelligence Unit	114
Heritage Foundation/Wall Street Journal	161
Political Risk Services	n/a
World Bank/University of Basel	69
Business Environment Risk Intelligence	50
Wall Street Journal Central European Economic Review	27
Freedom House	28
Gallup International	44
World Economic Forum	83
Political Economic Risk Consultancy	12
Institute for Management Development	47

Source: Kaufmann et al. (1999)

Appendix 2. Summary table of variables used

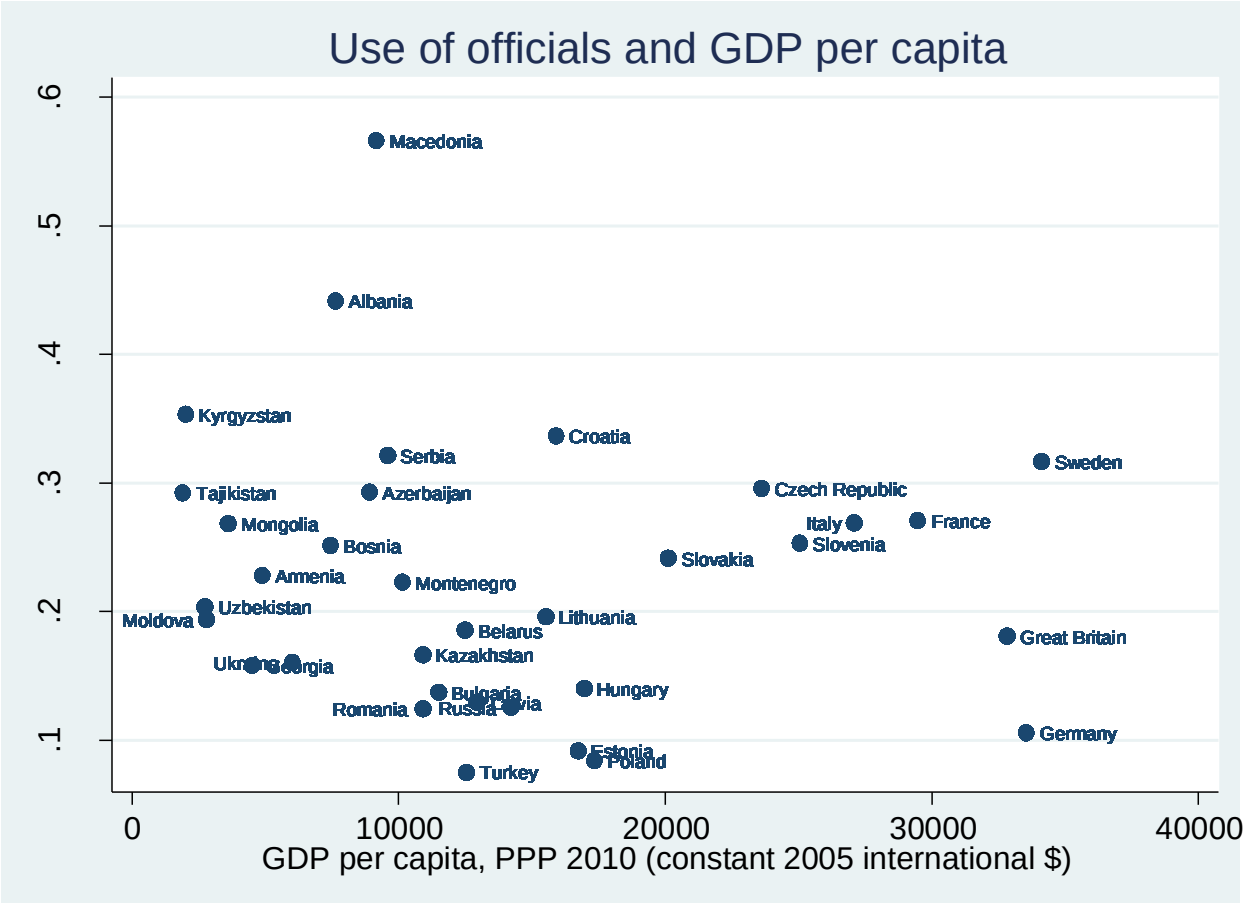
Variable	LiTS question	Obs.	Mean	Std. Dev.	Min	Max
Dependent variables						
Use of officials	Q6.02: During the past 12 months have you or any member of your household used these services? b) Request official documents (e.g. passport, visa, birth or marriage certificate, land register, etc.?) from authorities?	38118	0.231938	0.422075	0 (no)	1 (yes)
Corruption of officials	Q6.04: During the past 12 months have you or any member make an unofficial payment or gift when using these services over the past 12 months?	8560	0.166122	0.372211	0	1
Use of courts	Q6.02: During the past 12 months have you or any member of your household used these services? c) Go to courts for a civil matter	38121	0.042995	0.202848	0	1
Corruption of courts	Q6.04: During the past 12 months have you or any member make an unofficial payment or gift when using these services over the past 12 months?	1555	0.131833	0.338418	0	1
Independent variables						
Employed for wages	Q5.08: In this job, did you work…? 1) For wages 2) As self-employed 3) As independent farmer	32133	0.435596	0.495843	0	1
Employed for wages (PSU average)		38709	0.435136	0.078695	0	1
Self-employed	Q5.08: In this job, did you work…? 1) For wages 2) As self-employed 3) As independent farmer Q5.13: How many people do you employ excluding any household members?	32133	0.042853	0.202529	0	1
Self-employed (PSU average)		38709	0.042874	0.02365	0	0.5
Business owner	Q5.08: In this job, did you work…? 1) For wages 2) As self-employed 3) As independent farmer	32133	0.035478	0.184986	0	1

	Q5.13: How many people do you employ excluding any household members?					
Business owner (PSU average)		38709	0.035543	0.019912	0	0.25
Technological access	Q2.25: Do you or anyone in your household own any of the following? f) mobile phone g) a computer h) access to internet at home	38705	0.598786	0.370867	0	1
Technological access (PSU average)		38709	0.598775	0.084818	0.33	1
Medium city	Population based on data in Wikipedia	38399	0.333212	0.471368	0	1
Large city	Population based on data in Wikipedia	38399	0.332639	0.471165	0	1
Capital		38709	0.136092	0.342891	0	1
Controls						
Consumption	Q2.22: Approximately how much does your household spend on each of these items per month: a) Food, beverage, tobacco b) Utilities c) Transportation	32647	2627.145	10441.5	0	181818.2
Consumption (PSU average)		38709	2816.295	1770.72	220.78	12033.57
Gender	Q1.02: Gender of each member of the family	38665	0.603802	0.489113	0	1
Gender (PSU average)		38709	0.603597	0.046415	0	1
Age	Q1.04: How old was … at the last birthday?	38697	45.86965	17.37353	16	99
Age squared		38697	2405.857	1712.246	256	9801
Age (PSU average)		38709	45.88867	2.39373	22.75	64.71429
Higher Education	Q5.15: What is the highest level of education you already completed?	38699	0.202331	0.401743	0	1
Higher education (PSU average)		38709	0.202054	0.050747	0	1
Distance from capital	Based on geographical coordinates of cities obtained from Wikipedia.	38420	238.6345	417.6912	0	6513.066

Appendix 3. Use of officials and courts by country

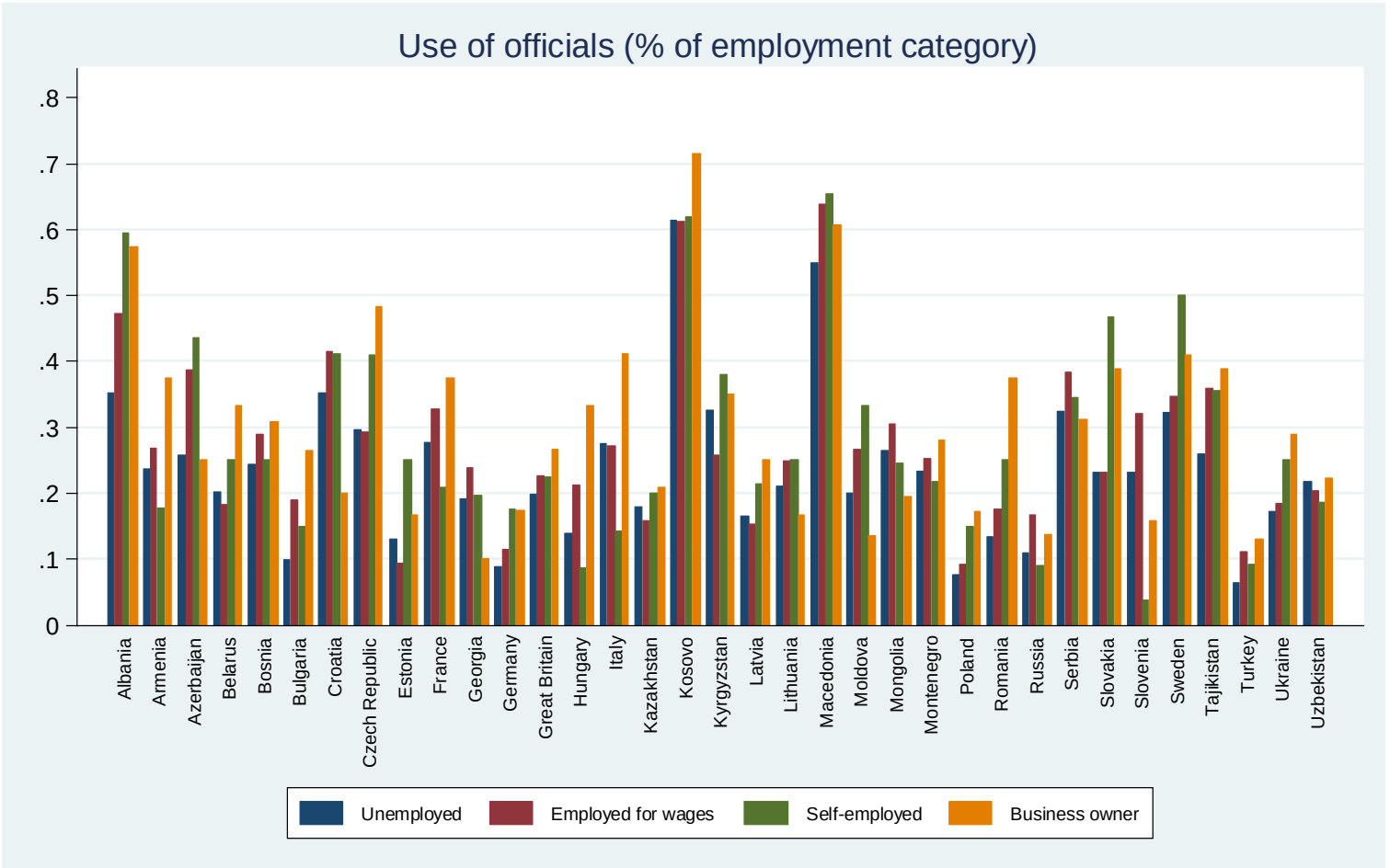
Country	Use of officials (%)	Use of courts (%)
Albania	44.15	6.88
Armenia	22.79	2.91
Azerbaijan	29.26	3.11
Belarus	18.53	5.30
Bosnia and Herzegovina	25.12	1.95
Bulgaria	13.72	1.68
Croatia	33.63	7.82
Czech Republic	29.55	5.62
Estonia	9.16	1.61
France	27.06	4.96
Georgia	15.82	2.20
Germany	10.53	3.12
Great Britain	18.05	2.20
Hungary	14.02	1.84
Italy	26.89	2.48
Kazakhstan	16.61	3.69
Kosovo	59.96	25.45
Kyrgyzstan	35.36	2.20
Latvia	12.95	2.19
Lithuania	19.62	2.65
Macedonia	56.67	8.93
Moldova	19.37	3.75
Mongolia	26.83	3.34
Montenegro	22.30	3.07
Poland	8.38	3.46
Romania	12.39	4.69
Russia	12.55	3.26
Serbia	32.13	3.32
Slovakia	24.17	2.81
Slovenia	25.33	9.94
Sweden	31.69	3.48
Tajikistan	29.20	3.51
Turkey	7.49	2.60
Ukraine	16.06	4.80
Uzbekistan	20.38	1.81
Average	**23.19**	**4.30**

Appendix 4. Use of officials and GDP per capita



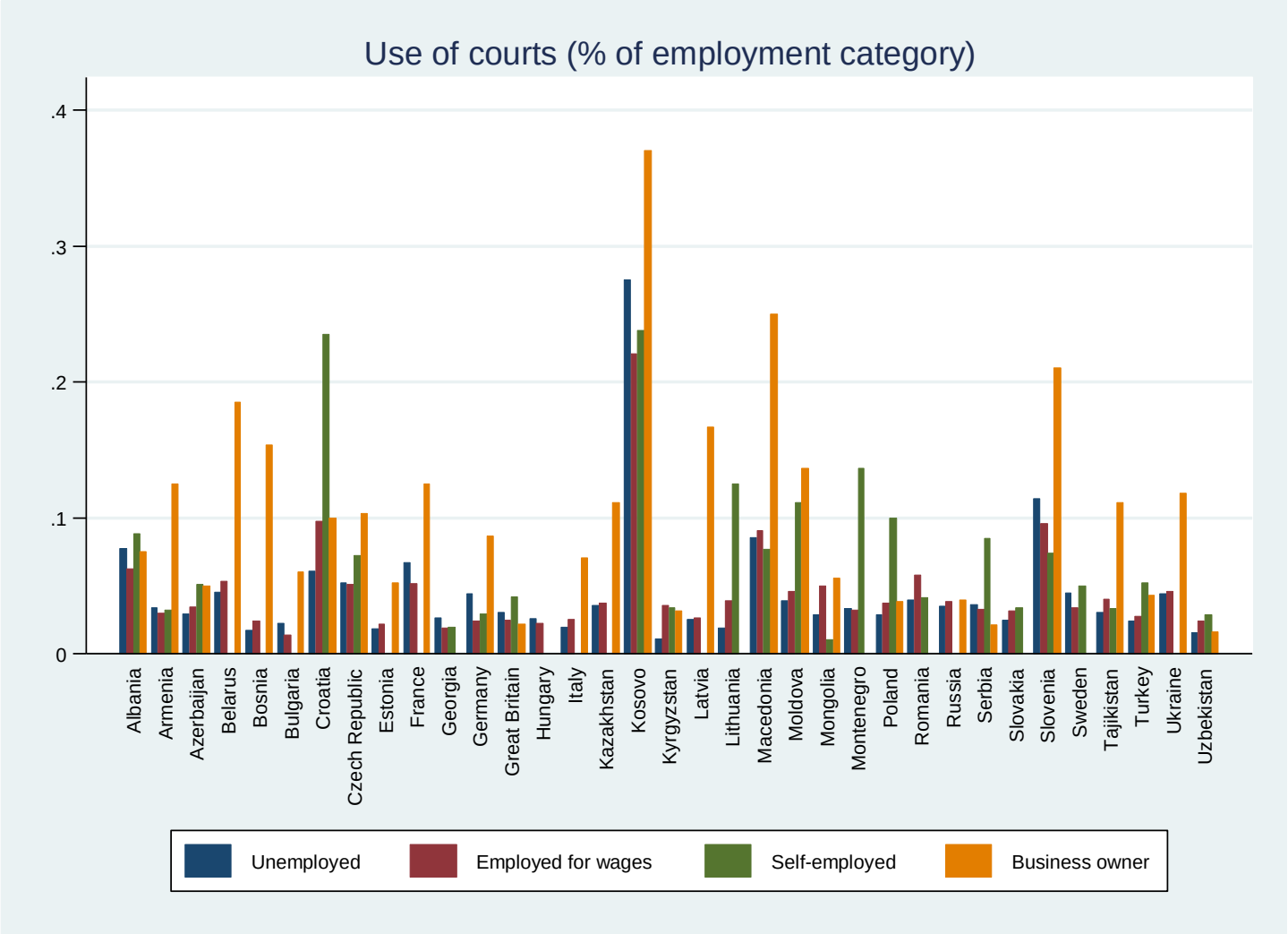
Appendix 5. Use of officials by country and occupational status

Country	Use of officials (% of the occupational category)			
	Unemployed	Employed for wages	Self-employed	Business owner
Albania	35.19	47.22	59.49	**57.32**
Armenia	23.70	26.84	17.74	37.50
Azerbaijan	25.85	38.70	43.59	25.00
Belarus	20.15	18.35	25.00	33.33
Bosnia and Herzegovina	24.44	28.92	25.00	30.77
Bulgaria	9.94	18.99	15.00	26.47
Croatia	35.19	41.43	41.18	20.00
Czech Republic	29.69	29.28	40.96	48.28
Estonia	13.08	9.32	25.00	16.67
France	27.66	32.83	20.83	37.50
Georgia	19.21	23.87	19.61	10.00
Germany	8.93	11.52	17.65	17.39
Great Britain	19.82	22.68	22.54	26.67
Hungary	14.00	21.23	8.70	33.33
Italy	27.61	27.25	14.29	41.18
Kazakhstan	17.96	15.78	20.00	20.93
Kosovo	61.30	61.26	61.90	**71.43**
Kyrgyzstan	32.58	25.76	37.93	35.00
Latvia	16.61	15.37	21.43	25.00
Lithuania	21.12	24.86	25.00	16.67
Macedonia	54.98	63.88	65.38	**60.71**
Moldova	20.05	26.69	33.33	13.64
Mongolia	26.52	30.53	24.49	19.44
Montenegro	23.30	25.27	21.74	28.00
Poland	7.56	9.20	15.00	17.31
Romania	13.44	17.49	25.00	37.50
Russia	10.86	16.65	9.09	13.73
Serbia	32.42	38.28	34.48	31.11
Slovakia	23.21	23.12	46.67	38.89
Slovenia	23.18	32.03	3.70	15.79
Sweden	32.22	34.71	50.00	40.91
Tajikistan	25.94	35.95	35.56	38.89
Turkey	6.33	11.17	9.21	13.04
Ukraine	17.20	18.49	25.00	28.95
Uzbekistan	21.76	20.29	18.57	22.22
Average	**23.51**	**27.00**	**28.00**	**30.02**

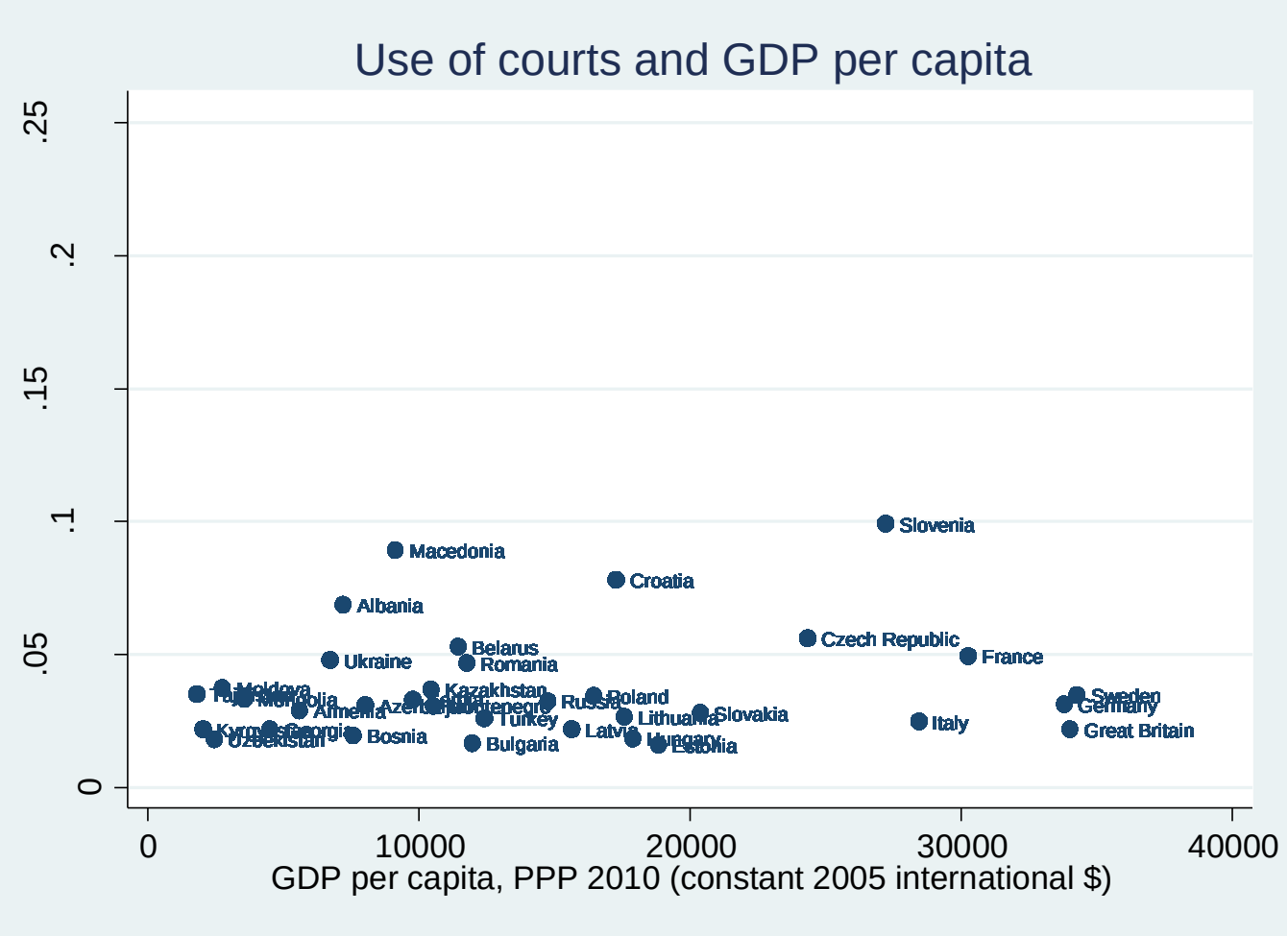

Use of officials (% of employment category)
.8
.7
.6
.5
.4
.3
.2
.1
0
Albania
Armenia
Azerbaijan
Belarus
Bosnia
Bulgaria
Croatia
Czech Republic
Estonia
France
Georgia
Germany
Great Britain
Hungary
Italy
Kazakhstan
Kosovo
Kyrgyzstan
Latvia
Lithuania
Macedonia
Moldova
Mongolia
Montenegro
Poland
Romania
Russia
Serbia
Slovakia
Slovenia
Sweden
Tajikistan
Turkey
Ukraine
Uzbekistan
Unemployed
Employed for wages
Self-employed
Business owner

Appendix 6. Use of courts by country and occupational status

Country	Use of courts (% of the occupational category)			
	Unemployed	Employed for wages	Self-employed	Business owner
Albania	7.78	6.27	8.86	7.50
Armenia	3.41	3.03	3.23	12.50
Azerbaijan	2.93	3.47	5.13	5.00
Belarus	4.56	5.36	0.00	18.52
Bosnia and Herzegovina	1.73	2.46	0.00	15.38
Bulgaria	2.27	1.40	0.00	6.06
Croatia	6.10	9.74	23.53	10.00
Czech Republic	5.22	5.11	7.23	10.34
Estonia	1.87	2.19	0.00	5.26
France	6.74	5.18	0.00	12.50
Georgia	2.64	1.94	1.96	0.00
Germany	4.46	2.42	2.94	8.70
Great Britain	3.08	2.50	4.23	2.22
Hungary	2.58	2.23	0.00	0.00
Italy	1.96	2.54	0.00	7.06
Kazakhstan	3.59	3.77	0.00	11.11
Kosovo	27.52	22.07	23.81	37.04
Kyrgyzstan	1.10	3.55	3.39	3.17
Latvia	2.52	2.67	0.00	16.67
Lithuania	1.90	3.93	12.50	0.00
Macedonia	8.53	9.06	7.69	25.00
Moldova	3.92	4.63	11.11	13.64
Mongolia	2.88	5.02	1.03	5.56
Montenegro	3.35	3.23	13.64	0.00
Poland	2.92	3.75	10.00	3.85
Romania	3.98	5.83	4.17	0.00
Russia	3.54	3.85	0.00	4.00
Serbia	3.65	3.31	8.47	2.13
Slovakia	2.47	3.19	3.39	0.00
Slovenia	11.43	9.58	7.41	21.05
Sweden	4.47	3.38	5.00	0.00
Tajikistan	3.06	4.03	3.33	11.11
Turkey	2.41	2.79	5.26	4.35
Ukraine	4.46	4.58	0.00	11.84
Uzbekistan	1.55	2.42	2.88	1.61
Average	**4.47**	**4.59**	**5.15**	**8.38**


Use of courts (% of employment category)
.4
.3
.2
.1
0
Albania
Armenia
Azerbaijan
Belarus
Bosnia
Bulgaria
Croatia
Czech Republic
Estonia
France
Georgia
Germany
Great Britain
Hungary
Italy
Kazakhstan
Kosovo
Kyrgyzstan
Latvia
Lithuania
Macedonia
Moldova
Mongolia
Montenegro
Poland
Romania
Russia
Serbia
Slovakia
Slovenia
Sweden
Tajikistan
Turkey
Ukraine
Uzbekistan
Unemployed
Employed for wages
Self-employed
Business owner

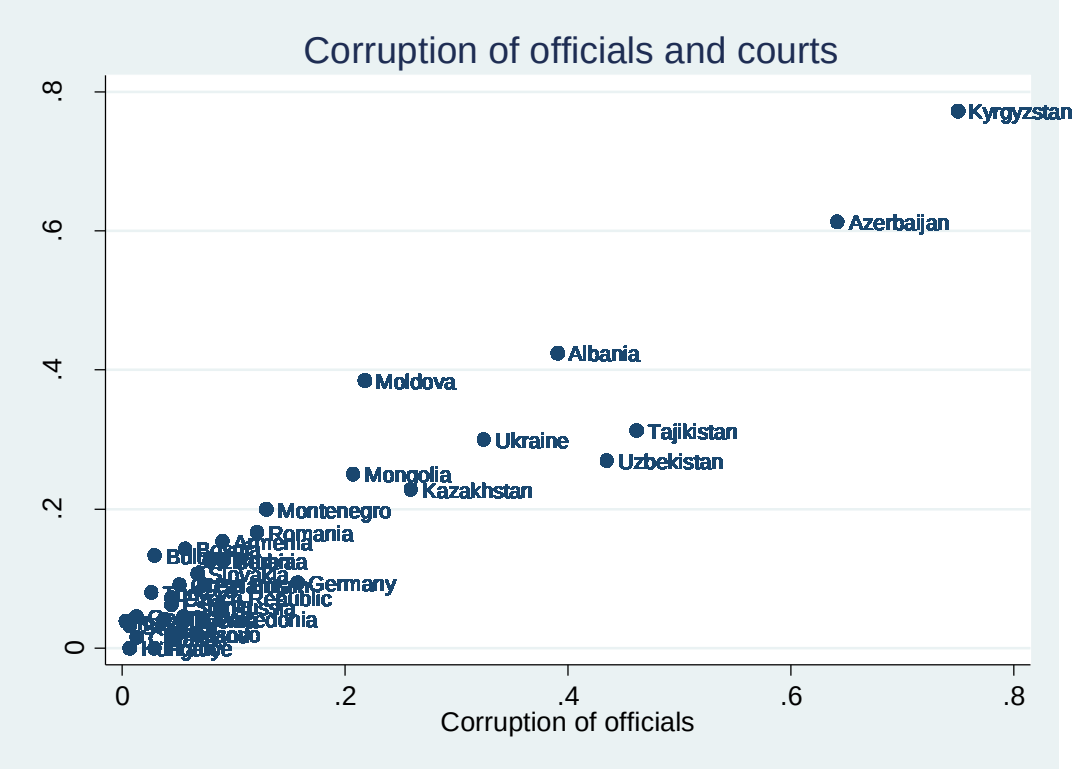
Appendix 7. Use of courts and GDP per capita



Appendix 8. Corruption of officials and courts by country (out of those who used the service in last 12 months)

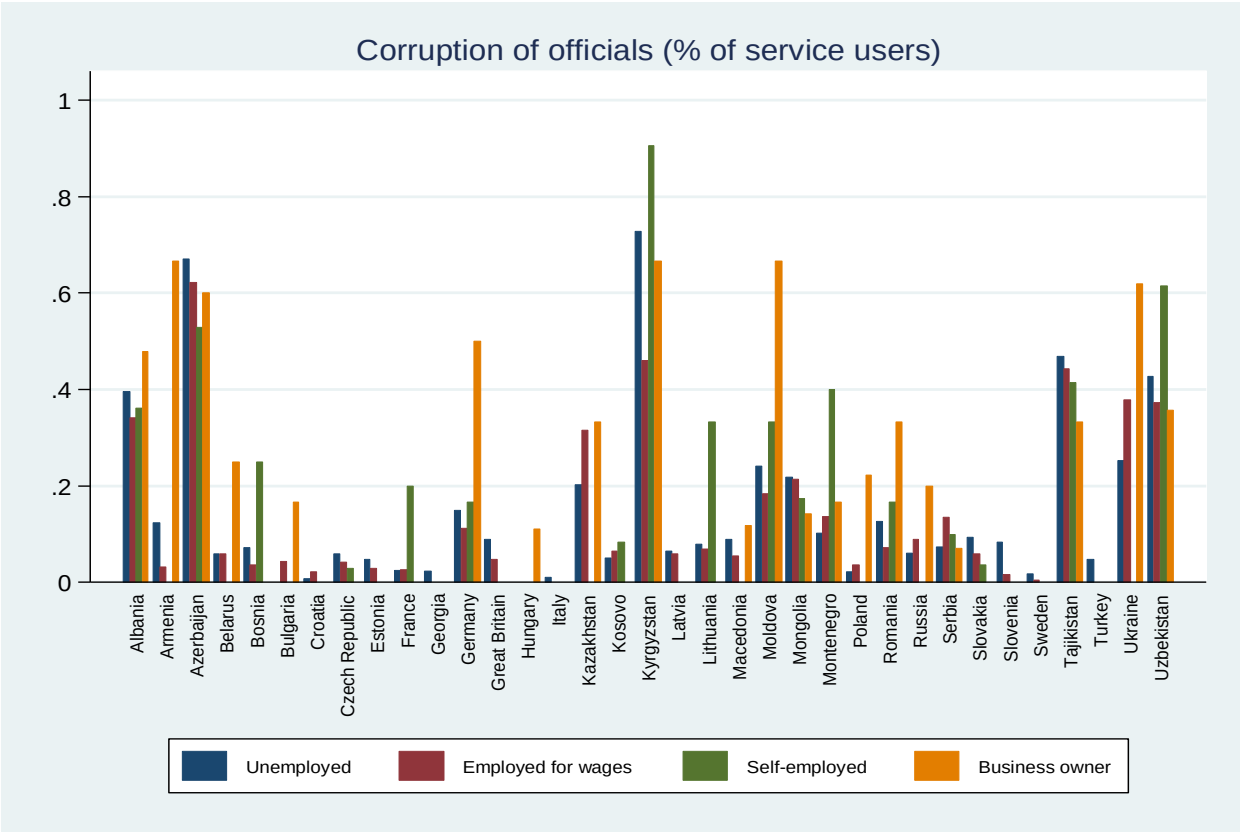
Country	Corruption of officials (%)	Corruption of courts (%)
Albania	39.09	42.42
Armenia	9.01	15.38
Azerbaijan	64.24	61.29
Belarus	7.36	9.09
Bosnia and Herzegovina	5.68	14.29
Bulgaria	2.94	13.33
Croatia	1.32	1.54
Czech Republic	4.44	7.27
Estonia	4.40	6.25
France	2.93	0.00
Georgia	1.28	4.55
Germany	17.74	9.38
Great Britain	5.17	9.09
Hungary	0.69	0.00
Italy	0.36	3.85
Kazakhstan	25.95	22.86
Kosovo	5.08	2.07
Kyrgyzstan	75.00	77.27
Latvia	5.51	4.55
Lithuania	7.87	12.50
Macedonia	7.22	4.26
Moldova	21.78	38.46
Mongolia	20.77	25.00
Montenegro	12.94	20.00
Poland	4.51	1.89
Romania	12.10	16.67
Russia	8.76	5.88
Serbia	9.07	12.5
Slovakia	6.75	10.71
Slovenia	3.80	4.17
Sweden	0.71	3.23
Tajikistan	46.18	31.25
Turkey	2.67	8.00
Ukraine	32.50	30.00
Uzbekistan	43.52	26.92
Average	**16.61**	**13.18**

Appendix 9. Corruption of officials and courts



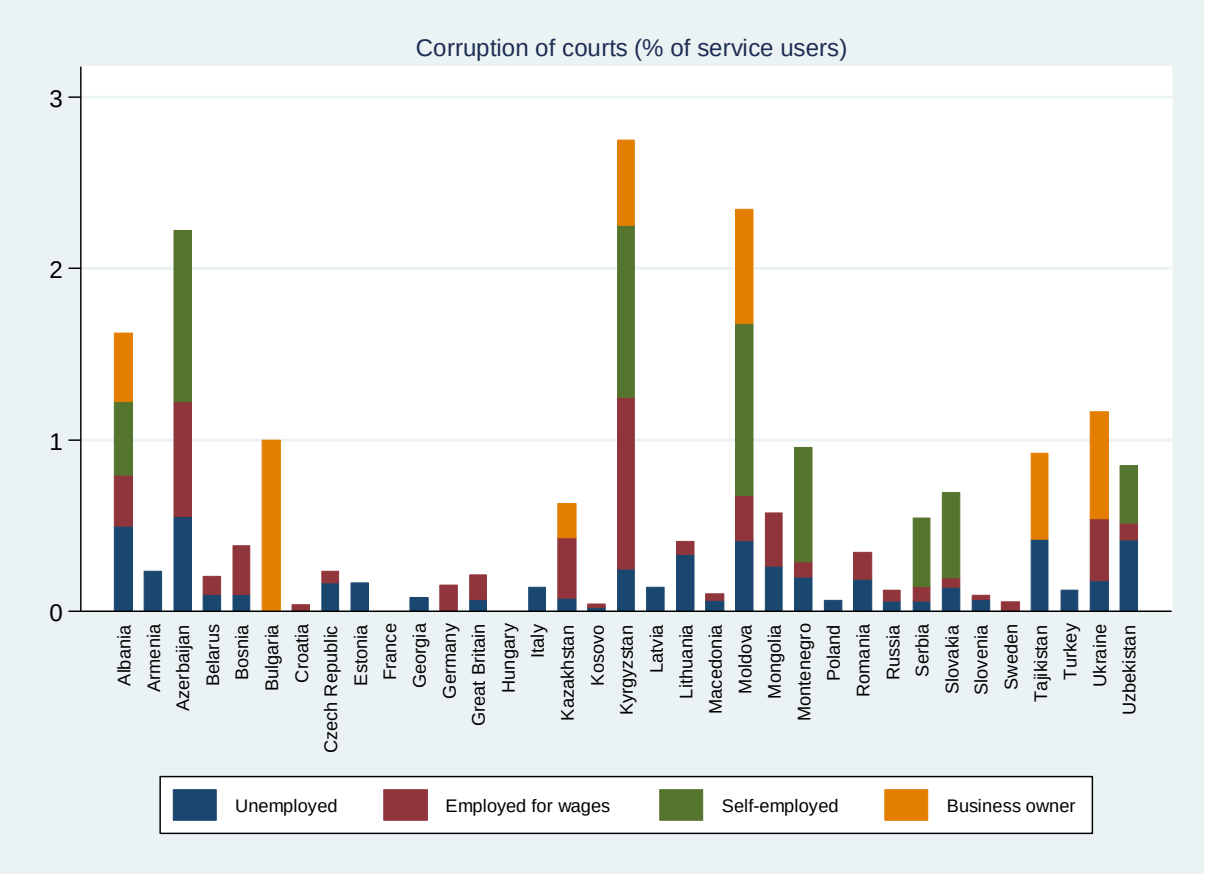
Appendix 10. Corruption of officials by country and occupational status

Country	Corruption of officials (% of the occupational category)			
	Unemployed	Employed for wages	Self-employed	Business owner
Albania	39.60	34.09	36.17	47.83
Armenia	12.40	3.28	0.00	66.67
Azerbaijan	67.09	62.24	52.94	60.00
Belarus	5.88	5.94	0.00	25.00
Bosnia and Herzegovina	7.25	3.70	25.00	0.00
Bulgaria	0.00	4.41	0.00	16.67
Croatia	0.79	2.27	0.00	0.00
Czech Republic	5.88	4.24	2.94	0.00
Estonia	4.76	2.94	0.00	0.00
France	2.56	2.63	20.00	0.00
Georgia	2.33	0.00	0.00	0.00
Germany	15.00	11.29	16.67	50.00
Great Britain	8.89	4.72	0.00	0.00
Hungary	0.00	0.00	0.00	11.11
Italy	1.02	0.00	0.00	0.00
Kazakhstan	20.31	31.51	0.00	33.33
Kosovo	5.01	6.45	8.33	0.00
Kyrgyzstan	72.81	46.00	90.48	66.67
Latvia	6.52	5.88	0.00	0.00
Lithuania	7.94	6.98	33.33	0.00
Macedonia	8.97	5.46	0.00	11.76
Moldova	24.14	18.39	33.33	66.67
Mongolia	21.77	21.33	17.39	14.29
Montenegro	10.23	13.64	40.00	16.67
Poland	2.27	3.70	0.00	22.22
Romania	12.73	7.27	16.67	33.33
Russia	6.12	8.96	0.00	20.00
Serbia	7.41	13.55	10.00	7.14
Slovakia	9.38	5.88	3.70	0.00
Slovenia	8.33	1.63	0.00	0.00
Sweden	1.72	0.54	0.00	0.00
Tajikistan	46.88	44.23	41.38	33.33
Turkey	4.76	0.00	0.00	0.00
Ukraine	25.27	37.84	0.00	61.90
Uzbekistan	42.77	37.35	61.54	35.71
Average	**14.82**	**13.10**	**14.57**	**20.01**

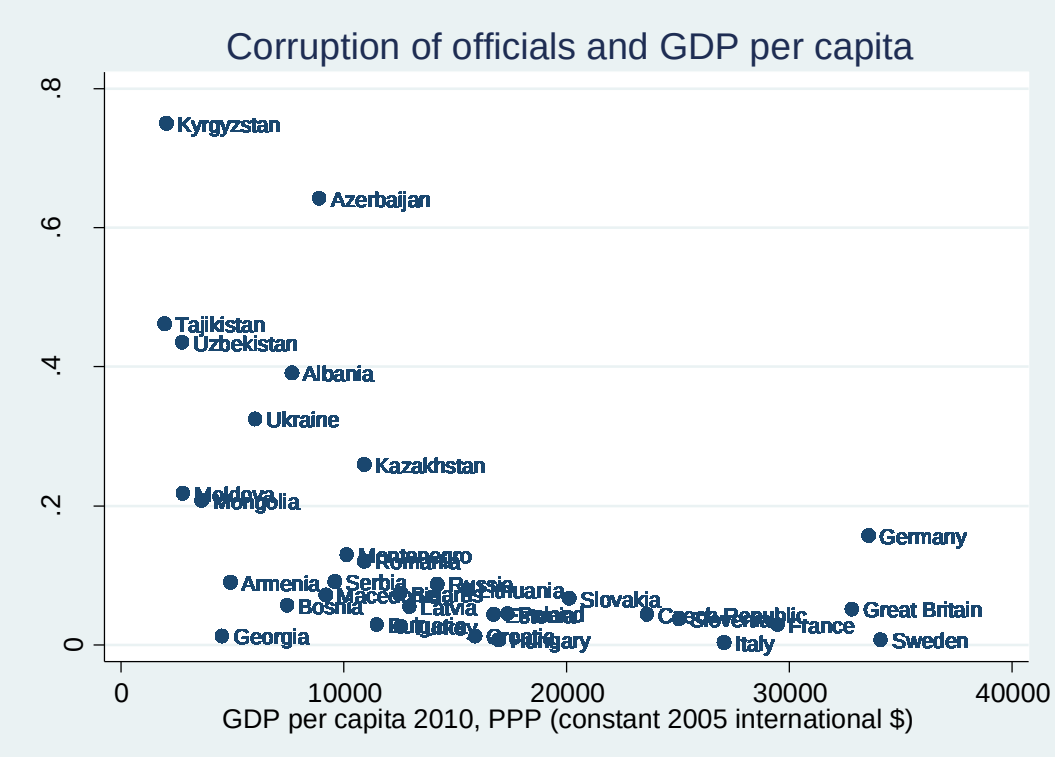

Corruption of officials (% of service users)
1
.8
.6
.4
.2
0
Albania
Armenia
Azerbaijan
Belarus
Bosnia
Bulgaria
Croatia
Czech Republic
Estonia
France
Georgia
Germany
Great Britain
Hungary
Italy
Kazakhstan
Kosovo
Kyrgyzstan
Latvia
Lithuania
Macedonia
Moldova
Mongolia
Montenegro
Poland
Romania
Russia
Serbia
Slovakia
Slovenia
Sweden
Tajikistan
Turkey
Ukraine
Uzbekistan
Unemployed
Employed for wages
Self-employed
Business owner

Appendix 11. Corruption of courts by country and occupational status

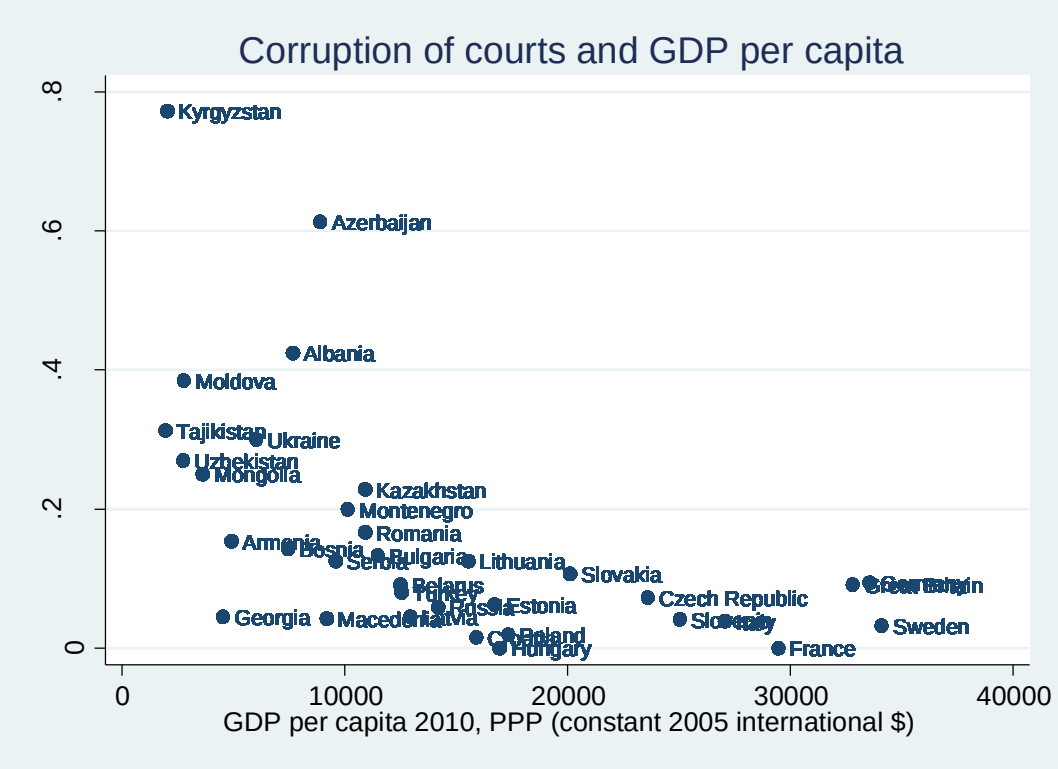
Country	Corruption of officials (% of the occupational category)			
	Unemployed	Employed for wages	Self-employed	Business owner
Albania	50.00	29.41	42.86	40.00
Armenia	23.53	0.00	0.00	0.00
Azerbaijan	55.56	66.67	100.00	0.00
Belarus	10.00	10.71		0.00
Bosnia and Herzegovina	10.00	28.57		0.00
Bulgaria	0.00	0.00		100.00
Croatia	0.00	4.17	0.00	0.00
Czech Republic	16.67	6.90	0.00	0.00
Estonia	16.67	0.00		0.00
France				
Georgia	8.33	0.00	0.00	
Germany	0.00	15.38	0.00	0.00
Great Britain	7.14	14.29	0.00	0.00
Hungary				
Italy	14.29	0.00		0.00
Kazakhstan	7.69	35.29		20.00
Kosovo	2.25	2.17	0.00	0.00
Kyrgyzstan	25.00	100.00	100.00	50.00
Latvia	14.29	0.00		0.00
Lithuania	33.33	7.69	0.00	
Macedonia	6.52	3.70	0.00	0.00
Moldova	41.18	26.67	100.00	66.67
Mongolia	26.67	30.77	0.00	0.00
Montenegro	20.00	9.09	66.67	
Poland	6.67	0.00	0.00	0.00
Romania	18.75	15.79	0.00	
Russia	6.25	6.45		0.00
Serbia	6.25	8.33	40.00	0.00
Slovakia	14.29	5.26	50.00	
Slovenia	6.98	2.63	0.00	0.00
Sweden	0.00	5.56	0.00	
Tajikistan	42.11	0.00	0.00	50.00
Turkey	12.50	0.00	0.00	0.00
Ukraine	18.18	35.71		62.50
Uzbekistan	41.67	10.00	33.33	0.00
Average	**17.05**	**14.58**	**22.20**	**14.41**



Appendix 12. Corruption of officials and GDP per capita



Appendix 13. Corruption of courts and GDP per capita



Appendix 14. Heckman selection equation

	Level 1: Individual Level 2: PSU			
	Model 18		Model 19	
VARIABLES	Coef	St Err	Coef	St Err
	Officials use		**Court use**	
Employed for wages	-0.00576	(0.0442)	-0.0313	(0.0504)
Employed for wages (PSU average)	-0.453	(0.343)	-0.705*	(0.418)
Self-employed	0.0475	(0.0988)	0.0695	(0.108)
Self-employed (PSU average)	1.012	(0.760)	-2.479**	(1.012)
Business owner	0.183*	(0.104)	0.269***	(0.104)
Business owner (PSU average)	-0.654	(0.950)	-0.628	(1.110)
Technological access	0.457***	(0.0629)	0.285***	(0.0707)
Technological access (PSU average)	-0.295	(0.307)	0.214	(0.367)
Medium city	0.0272	(0.0475)	-0.0143	(0.0540)
Large city	-0.220***	(0.0576)	0.0232	(0.0634)
Capital	0.236***	(0.0709)	-0.0627	(0.0807)
Control variables				
Consumption	6.59e-06***	(1.82e-06)	1.10e-06	(1.96e-06)
Consumption (PSU average)	-1.49e-05	(1.12e-05)	7.27e-06	(1.28e-05)
Gender	0.00114	(0.0402)	-0.0532	(0.0454)
Gender (PSU average)	-0.0672	(0.385)	0.732	(0.452)
Age	0.0102	(0.00935)	0.0262**	(0.0108)
Age squared	-0.000200*	(0.000111)	-0.000306**	(0.000127)
Age (PSU average)	-0.0128	(0.00784)	-0.0222**	(0.00970)
Higher Education	0.191***	(0.0477)	0.0495	(0.0542)
Higher education (PSU average)	0.560	(0.360)	0.496	(0.430)
Distance from capital	-0.000139***	(5.14e-05)	-3.14e-05	(5.60e-05)
Constant	-0.297	(0.471)	-1.895***	(0.571)
Level: country-psu				
St dev (official/courts corruption)	0.414***	(0.0540)	0.0713	(0.169)
St dev (official/courts use)	-0.275***	(0.0239)	-0.471***	(0.0328)
Cross-eq corr (courts corruption & use)	0.190***	(0.0507)	-0.155	(0.106)
Level: residuals				
Cross-eq corr (courts corruption & use)	-0.00140	(0.0888)	0.0206	(0.131)
Observations	27,288		26,649	
Log Likelihood	-15476		-5053	
df	36		36	

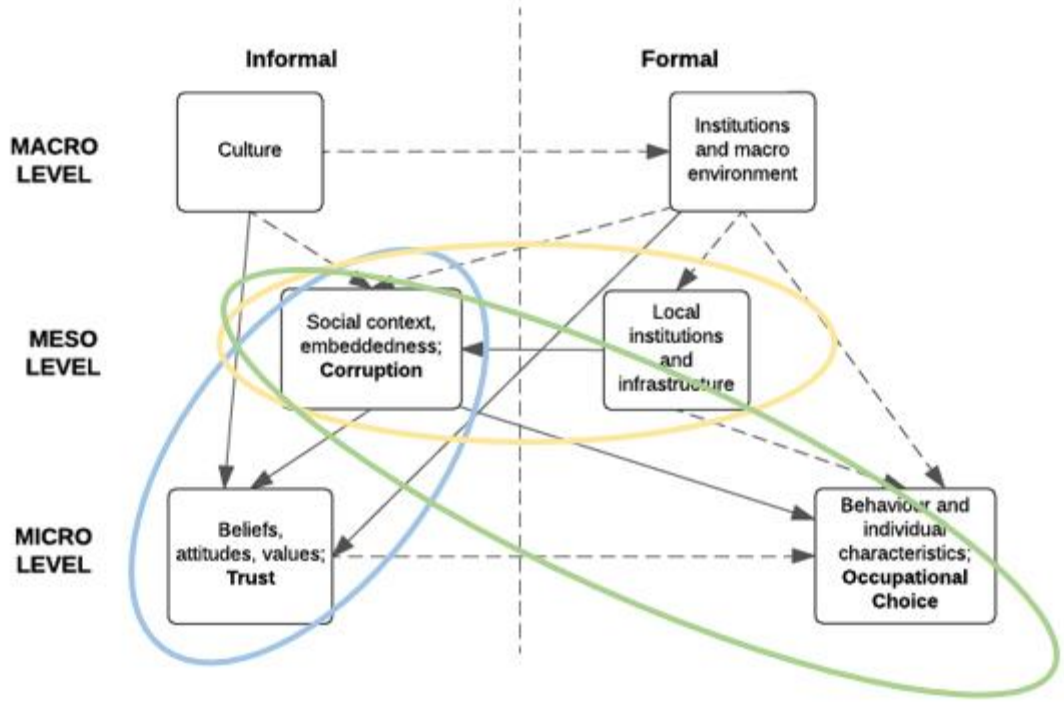
Standard errors in parentheses ***
p<0.01, ** p<0.05, * p<0.10, +p<0.15

CHAPTER 5. CONCLUSION

The ambition of this thesis has been to understand determinants and the effects of informal institutions in the context of transition. It aims to contribute to the body of research on informal institutions and area studies of transition economies. In this chapter, I present my general contributions to the respective bodies of literature as well as the contributions of particular chapters. I review and discuss my results with respect to the conceptual framework presented in Chapter 1, outline current limitations in the study of informal institutions and transition economies and propose avenues for further research.

The conceptual framework introduced in Chapter 1 has been inspired by Jepperson and Meyer's (2011) extension of Boudon-Coleman “boat” diagram. It presents the variables this thesis analyses by showing how they affect each other and where they are placed in a ‘wider analytical space’. The framework proposes that institutions are analysed at three levels: macro, meso and micro. It also differentiates between formal and informal institutions at each level. With respect to the model presented, the main questions analysed in this thesis pertain to the meso-level informal institutions (representing social context and embeddedness) and their interactions with other formal and informal institutions at the same level (Chapter 2 and 4), as well as their interaction with the micro level economic outcomes (Chapter 3). Figure 1 shows graphically the relationships analysed in particular chapters.

Figure 7. Conceptual framework and the problems analysed in particular chapters.



The first empirical study in this thesis (Chapter 2) seeks to understand determinants of generalised trust with particular focus on trust's embeddedness in the social context. In terms of the framework, trust is a micro-level belief/attitude while its determinants are meso-level informal reflecting the social context. Social embeddedness argument was introduced by Granovetter (1985) who maintained 'internalised rules of behaviour are social in origin' (p.485). Therefore, individuals are embedded in their social context which affects their behaviour. I propose and find strong support for an argument that religious affiliation and habitat size, representing the social context one is embedded in, strongly affect individual propensity to trust.

The second empirical study, presented in Chapter 3, analyses the effects of meso-level informal institutions, as reflected by the strong and weak tie social capital, on individual economic outcomes, such as occupational choice, in the context of transition. In other words, the chapter examines the effects of meso-level informal institutions on the micro-level formal outcomes. The results indicate that weak and strong tie social capital affects only selection into wage employment but not sole proprietorship or ownership of business employing others. I argue that this result suggests that social capital in transition economies is in the state of transformation itself. Therefore, the

relationship between meso-level informal institutions and this specific micro-level economic outcome has been only partly confirmed.

Chapter 4, the third empirical study presented in this thesis, looks at the effects of technology and city size on incidence of petty corruption across transition economies. Both, dependent and independent variables represent the meso level of the conceptual framework. I argue that corruption can be seen as an informal institution as it becomes institutionalised without gaining legitimacy, with individuals and businesses developing consistent expectations about it (Jepperson 1991). Further, if widespread, it becomes a norm of behaviour and responds slowly to institutional reforms (Aidis et al. 2008). On the other hand, the determinants analysed in this chapter represent more formal meso-level institutional outcomes: local technological infrastructure and institutional environment as represented by size of the city. Again, I find strong support for the hypotheses tested and confirm the relationship between formal and informal institutions at meso level as proposed in the framework.

5.1 Contribution to the body of literature on informal institutions and transition economies

This thesis contributes to the body of literature on informal institutions and studies of transition economies. With respect to the former, I show that the social context, captured at the meso level of the conceptual framework, affects economic outcomes such as career choice as well as individual beliefs and attitudes, for instance trust. It also sheds more light on the specific effects of the variables reflecting the social context such as religious affiliation, city size ale social capital. I also contribute to the literature by showing that meso-level informal institutions can be affected by formal measures such as technological infrastructure.

With respect to my contribution to the area studies on transition economies, this thesis allows to better understand the role of informal institutions today and compare it to what we know about informal institutions before and in the early years of the transition. From my investigation of the effect of the contextual level informal institutions on economic outcomes, it appears that the informal institutions, and social capital in particular, may be in a state of transformation whereby the ‘old style’ social capital temporarily decreased but as the countries move towards modern complex societies, a different type of social capital emerges – one supported by the economic system, not vice versa (Stiglitz 2000; Cook 2005).

Further, this thesis contributes to our understanding of the determinants of the incidence of petty corruption in transition economies. Understanding corruption and its determinants is exceptionally important seeing how much damage and suffering it inflicts and the relatively poor results of the efforts to fight it. Empirical studies of the incidence of petty corruption are scarce in general. Even fewer studies have looked beyond Russia and Central and Eastern European states. The study presented in Chapter 4, adds to the literature by analysing the incidence of petty corruption across all transition economies except for Turkmenistan. Importantly, the findings suggest that relatively simple measures such as technological access have powerful effects on reducing corruption.

Another contribution of this thesis is the conceptual framework that helps to understand and test the relationships between and within informal and formal institutions and at different levels of analysis. The framework is versatile enough that it can be adapted to a wider range of studies.

5.2 Limitations of this thesis

The limitations of this thesis pertain mainly to constraints of the data used in particular chapters and the general constraints of the data on informal institutions and transition economies. Also, the restrictions related to the definition of informal institutions and their components affect the quality of the data. While specific constraints have been discussed in respective chapters, here, I will attempt to outline more general limitations I faced while working on this thesis.

Chapter 3 and 4 rely on the data from Life in Transition Survey (LiTS) that European Bank for Reconstruction and Development conducts jointly with the World Bank. LiTS is probably the only complete source of information on transition economies. It provides unique and valuable information on 30 transition economies. So far, two waves of the survey have been conducted and a third one is under way. However, probably its biggest drawback lies in the fact that the questionnaires differ from wave to wave which made it impossible to construct a panel for either of the chapters. World Values Survey (used in chapter 2) is more consistent with respect to the questionnaire but its coverage of transition economies is limited and varies between waves. Both, LiTS and WVS provide a relatively good breadth of information related to opinions and attitudes which often can be linked to informal institutions. However, there is not much 'hard' evidence, such as questions about actual behaviour, which could add an angle to empirical research.

Further, with respect to the theory of informal institutions, the fact that there is no single definition of informal institutions or even the 'components' of informal institutions such as social capital, makes it very difficult to measure precisely. However, since informal institutions are ubiquitous and

all-encompassing there may never be a single definition or measure capturing the phenomenon. Hence, there is a great need for an interdisciplinary approach to the topic, which may require use of various measurement approaches including quantitative and qualitative data, laboratory experiment as well as novel methodologies.

5.3 Directions for future research

My investigation of informal institutions focused mainly on the meso level of the framework. Since the research of the informal institutions from socio-economic perspective is still in its infancy there is plenty of scope for the future research along several dimensions.

As mentioned above and in particular chapters, good measures of informal institutions are the key to development of future research and our understanding of the origins and effects of informal institutions. As discussed, survey questions about beliefs and attitudes should be supported by further probing questions. Also, questions about actual behaviour or likely choices in a given scenario as well as lab experiments may provide more detailed information. They would also allow researchers to compare and contrast responses to different types of questions to understand the real drivers of behaviour.

With respect to the conceptual framework introduced in this thesis, measures appropriately reflecting institutions at each level of analysis are necessary to understand the interactions between and within levels. Also, further testing of the relationships between formal and informal institutions as well as informal institutions within and between levels is necessary. This thesis provides only a snapshot of possible interactions and effects with relation to specific variables of interest.

I also acknowledge that the relationships between the levels and institutions may be more complex than what the graph proposes and the relationships may run both ways. As pointed out in Chapter 1, formal and informal institutions reinforce each other and provide feedback. Therefore, informal institutions may lead to the change of formal institutions while the change of formal institutions may, in turn, alter informal institutions and so forth. Further research is needed to test the feedback effect at all levels of analysis.

Additionally, with respect to the area studies of transition economies, more research is needed to understand the process of transition across the region. Most of the research and data focuses on the Central-Eastern Europe and the Baltics as well as Russia. Where the research is lacking is Central Asia, Southern and South-eastern Europe and Eastern Europe and Caucasus. EBRD's data for the entire region provides enormous opportunity to understand the under-researched countries and

regions better as well as understand the transition trajectory across the region. The transition region is not homogenous as evidenced by varied experience of transition as well as particular countries' and regions' culture and history. Therefore, when researching the region, it may be worth splitting the sample along the regional divides introduced by EBRD[1] or into CIS[2] and non-CIS countries to understand better institutional dynamics within smaller regional units.

Finally, with respect to the framework, it should be further developed to reflect the fact that there is no hard boundary between formal and informal institutions as well as between the levels. Although some variables clearly lie within devised boundaries, others capture situations in the middle - between the levels or mixture of formal and informal institutions – like in the case of city size. Further effort within the theoretical and applied literature is needed to disentangle these relationships or propose measures that would be more specific.

5.4 Policy recommendations

The policy recommendations pertaining to the results obtained within the particular chapters are discussed within the chapters. Here, I present more general policy recommendations based on what I have learnt throughout this thesis. Seeing that phenomena researched here are fundamental, wide ranging and grand in scale, influencing them may require considerable policy effort, strong political will and commitment. Further, seeing that informal institutions are embedded and slow changing (Williamson 2000), there may be relatively few quick solutions or the interventions may have to be repeated over time and the results may be slow to emerge. Influencing informal norms and practices requires recognition of the issues on the part of the policy makers and sincere commitment and willingness to take an action. I begin with more general and deeper policy recommendations and go on to discussing more specific smaller interventions.

In this thesis, I focused on social context as demonstrated by the meso-level informal institutions. Therefore, my policy recommendations focus on actions aimed at improving the social context or making the social context an environment conducive to trust, cooperation and development of social ties. At the same time, strong formal institutions are necessary to guard the development of cooperative norms. They should provide an environment where individuals are not afraid to place

[1] EBRD has divided transition economies into following regions: South-eastern Europe, Central Europe and Baltic States, Eastern Europe and the Caucasus, Central Asia, Russia and Turkey are considered separately.
[2] The Commonwealth of Independent States (CIS) formed when the former Soviet Union dissolved in 1991. It is comprised of: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Ukraine, and Uzbekistan. Turkmenistan is an associate member.

trust in others knowing that the legal system will effectively punish traitors, restore order and compensate the victims of any wrongdoing. To achieve this, strong property rights systems, contract enforcement laws and criminal justice system are necessary.

Equally, for the quality social capital to develop, particularly weak tie social capital (with generalised trust being one of its manifestations), formal institutions described above are necessary. Weak tie social capital includes also organisations and institutions independent of the government that manifest interests and the will of the citizens. Therefore, formal institutional framework enabling these kind of associations to emerge and thrive is necessary. This comprises of general freedom of association and freedom of expression, clear and easy to follow laws guiding establishment and running of such organisations as well as their responsibilities and freedoms.

Among more specific interventions, I would advocate for strengthening of the communities at the neighbourhood and city levels. Through strengthening I mean enabling and encouraging interactions of individuals within their neighbourhoods, cities and wider boundaries. Stronger interactions within neighbourhoods and cities may be achieved through promotion of neighbourhood and city wide associations and clubs. Many such initiatives would require local authority funding and support, however, some could be community led by local leaders and activists. Therefore, support and encouragement given to local leaders is of great significance. This is particularly important in case of transition economies where associations and local leadership were suppressed by the communist regime and in many countries local activism is still not supported by the authorities.

Neighbourhood and city level initiatives may include organising events such as ‘get to know your neighbours’ whereby local community is encouraged to introduce themselves to their neighbours or speak to them. Organising local markets and fests may be another way to gather local communities. Further, local libraries and schools may organise interest clubs for children and adults as well as encourage interactions between the parents during school events and pick up times. To encourage city-wide community spirit some of the activities could be rotated across the city, for instance hobby clubs and societies could rotate meetings across the schools or libraries within reasonable travel distance. Also, events such as Halloween or similar local celebrations could be endorsed by the authorities to encourage community spirit. Authorities should further ensure health and safety of any wider events.

Such attitudes and behaviours may not come naturally particularly to citizens of transition economies; therefore, the authorities and local leaders may seek to popularise them through TV, radio, celebrity endorsement and social media. The use of TV and radio for such purposes may need to take a more sophisticated form than simple advertising. More specifically, following an example

of some developing countries, promotion of certain norms and attitudes may be incorporated in the plot of radio and TV series, shows, programmes as well as reality shows.

These initiatives are particularly applicable with respect to the results obtained in Chapter 2 and 3 which suggest that social context and at the neighbourhood and city level as well as networks significantly affect behaviour. Also, some of the negative effects of religious affiliation, such as Orthodox Christianity, may be offset by norms and attitudes operating within local and wider community.

Finally, harnessing the power of technology has been shown to have positive effect on the less welcome forms of informal institutions such as corruption. Technology may provide access to information that individuals may not otherwise be able to obtain. It also provides an opportunity to connect and interact with others; it may extend weak ties as well as help to maintain the connections. Therefore, the government should consider investing in the local technology infrastructure including broadband access, mobile phone signal and provision of mobile internet by mobile phone operators. However, solutions such as provision of internet at local libraries and schools and wi-fi in public spaces may also bring benefits not only with respect to corruption but also social capital development and general education.

Given relatively wide samples of countries used in particular studies within this thesis, not all solutions and ideas will be equally effective and appropriate in every country, region or city. Therefore, they may be modified to fit existing local context. Also, it must be acknowledged that more specific projects proposed above may have only limited effectiveness if the wider formal institutional context is poor. However, they may aid transformation of informal norms and attitudes that, in turn, may force formal institutions to change.

5.6 References

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