Are regulatory interventions seen as an obstacle or an enabler to SME performance and growth in transition economies: a study of gendered perceptions?

Dr. Natalia Vershinina[1], Dr. Yulia Rodionova[2], Prof. John Kitching[3] and Prof. Rowena Barrett[4]

[1] Leicester Business School, De Montfort University, Leicester, United Kingdom, LE1 9BH
[2] Newcastle Business School, Northumbria University, Newcastle upon Tyne, NE1 8ST
[3] Kingston University, Kingston Hill, Kingston Upon Thames, Surrey, United Kingdom, KT2 7LB
[4] QUT Business School, Queensland University of Technology, Brisbane, QLD 4001

Objectives
The aim of this paper is to empirically test the influence of the perceived regulatory burden in the context of postcommunist economies on SME performance and growth from a gender perspective.

Prior Work
The research literature largely argues that regulation is a burden, cost or constraint for SMEs, although recent work suggests regulation has a dual influence, enabling as well as constraining firms. These conflicting influences play out variably for particular firms. Most studies focus on mature market economies where regulatory frameworks are well-established. In this paper we attempt to study the impact of regulation on small enterprises within the context of transition economies from a gender perspective.

Approach
Using a panel firm-level dataset from the Business Environment and Enterprise Performance survey (BEEPS) of 27 countries in Central and Eastern Europe and Central Asia for 2005-2009, we study whether perceptions of regulatory interventions (tax, licencing and permits, court system, customs, inspections and labour regulations) are seen as obstacles or enablers by firms and whether perceptions differ by gender. We perform difference-in-means tests on various perception and "de facto" indicators of the regulatory environment and estimate a quartile regression model on the pooled-crossed section and the panel data to investigate the influence of dealing with governmental regulations on business performance. To control for reverse-causality, we merge firm-level perceptions with country-level indicators and financial parameters for similar interventions.

Results
Our preliminary findings from empirical testing suggest that there is variability in regulatory impacts by gender of business owner, firm size and firm age and ownership type. A more nuanced analysis suggests that business regulation enables growth for male-owned firms; while for female owned firms regulatory interventions are more of an obstacle.

Implications
Failure to understand how regulation affects business performance of female and male owned firms means that policy interventions are likely to produce unwanted consequences because neither the full range of mechanisms shaping small-business performance nor the conditions which support or hinder the exercise of these mechanisms are fully identified.

Value
Overall, this study seeks to contribute to existing research in the field of gender and entrepreneurship by examining the influence of regulatory burden in the context of post-communist economies rarely studied in the literature, using quantitative techniques that allow generalisation to population of entrepreneurs in transition countries.

Key Words: SME, performance, obstacles, enablers, female business owners, transition economies

Introduction

Regulation and its influence on small and medium-sized enterprises (SMEs) is an important issue for academics, practitioners and policy makers. Scholarly contributions have mainly focused on theoretical and empirical issues exploring the relationships between regulatory norms and business behaviour (Commander and Svejnar, 2010). Mainly conceptualised as a "burden", regulation is primarily perceived as a barrier to start-up, investment, innovation, employment, and business growth (Kitching, 2006; Nicoletti and Scarpetta, 2003). Small businesses in particular are argued to suffer

more from state regulation than other types of firms (Baldwin, 2004; Fletcher, 2001). On the other hand, there is a growing body of literature that views regulation as enabling, as well as constraining, small business activity and performance, for example, by providing protection for investors, employees, citizens, consumers, and the environment, as well as for business owners themselves (Kitching, 2006). Most studies have, however, been conducted in mature market economies, where institutional and regulatory environments are well-established. Fewer studies have been conducted in the newer transition economies of Central and Eastern Europe, and Central Asia.

Entrepreneurship, defined as self-employment and business ownership, is a global phenomenon, although its nature, extent and contribution to economic development varies with context. However, most of the conceptual development in the field of entrepreneurship has occurred in, or assumed, mature market conditions (Bruton et al., 2008). Although there is a growing literature on entrepreneurship in emerging market economies, much of it pays insufficient attention to contextual influences, which limits the contribution to mainstream entrepreneurship theories. In addition, recognition of the importance of context is largely missing from the policy-orientated literature; this is problematic given the potential for inappropriate policy transfer. Thus, recent debate has emphasised the need to view entrepreneurship within the wider political, economic and social contexts in which it takes place (Baker and Nelson, 2005; Davidsson, 2003; Welter, 2011; Zahra and Wright, 2011).

One of the dimensions currently debated in the entrepreneurship literature which is pertinent to this study is the role of gender. Is regulation gendered in some way? One might say regulation is gendered where it produces effects that advantage or disadvantage either men and women. But, as regulation only produces effects through the exercise of agency, i.e in terms of how agents adapt to the regulatory environment, these effects necessarily depend on how men and women act. Hence in this paper we investigate how regulation enables, motivates and constrains men and women to act in different ways.

There has been increasing interest in women entrepreneurs and the challenges they face in developed economies (Marlow 1997; Carter and Allen 1997; Berg 1997) particularly in a way they are affected by regulatory interventions. However, research on women entrepreneurs in transitional economies is less developed (Tkachev and Kolvereid 1999), and the positive impact of female entrepreneurs is not always recognized to the same degree by countries in transition (Welter and Smallbone 2010). Transition countries are those in the process of making the shift from the command economies of Central and Eastern Europe, and Central Asia to a market economy following the political transformations of 1989-91. Scholars have acknowledged that with regard to gender and entrepreneurship, policymakers and financial experts in any particular country should not uncritically rely on research results from other countries (Eriksson et al. 2009; Welter 2011). Bruton et al. (2008) pointed out a need to develop a deeper understanding of entrepreneurship in emerging economies. Furthermore, the lack of information on successful female entrepreneurs, especially running family firms, is especially apparent. For instance, Estrin and Mickiewicz (2011) find that female business owners are more affected by regulation in transition economies. Smallbone and Welter (2001) highlight the differences in terms of access to social networks that men and women have in post-communist economies, which represent additional resources having access to which improves business performance. For instance, since army is compulsory for men, serving in it allows men to develop personal networks of friends, which eventually may end up in powerful governmental positions, and hence could be called upon.

This paper investigates entrepreneurial activity in the context of regulation, and examines regulation as a constraining mechanism for SME growth. We explore the current debates on regulation being an enabler or a burden in the context of developing economies, where regulatory reforms may not have had the time to become deeply embedded in society. The research questions we attempt to answer are:

- Is regulation perceived as a constraint SMEs in transition economies?
- May the regulation be enabling SMEs, even if SME owners do not perceive it as such?
- Are there differences in perceptions of regulation by owner gender?

This paper is structured as follows. We firstly introduce the literature that informs our study. We provide working definitions of the regulatory interventions, and present debates in the extant literature

on regulation and the effect of gender with a focus on how these affect SMEs. We place our study in the context of transition economies and the current regulatory environment specific to these developing economies. We present our conceptual model and methodology which is then followed by findings and discussion which helps to view our findings in the context of the home literature. Finally, we present conclusions and policy implications.

Literature on Regulation and SMEs

Kitching et al. (2013a) propose that the conventional view of regulation is that it is a burden, cost or constraint on businesses. Small businesses are believed to suffer disproportionately from such burdens due to resource constraints and vulnerability to external shocks (Fletcher, 2001; Federation of Small Businesses, 2011). Such views, however, are based upon a partial conception of the influence of regulation as solely constraining rather than as also motivating action and enabling higher levels of performance.

Most studies adopt the one-sided conception of regulation as a business burden (Kitching, 2006, 2007, Kitching et.al., 2013b). Few studies examine whether and how regulation might facilitate, or even promote, business performance by contributing to the creation of market opportunities, or by influencing the implementation of business practices that improve efficiency or competitiveness (e.g. Edwards et al., 2003; Mayer-Schönberger, 2010). The underlying assumption that regulations do not facilitate or promote business performance pervades most research. Sometimes there is an acknowl-edgement that specific regulations facilitate economic activity – for example, property rights or competition law – but these are under-theorised as influences on business performance, and also imply that other regulations are purely a burden.

Most studies have, however, investigated the influence of regulation on SMEs in mature market economies where regulatory frameworks are well-established. It is debateable whether these research findings are accurate representations of small business/regulation connections in the transition countries. Nor should we assume that small firms in the transition countries all experience, and manage, regulatory pressures and opportunities in the same way.

Context : Transition economies and Gender

Unlike most developing countries, the transition economies did not merely strive to improve the functioning of their legal and institutional framework. They instituted from scratch a market-oriented legal and institutional system (see Svejnar, 1991). The transition economies also differ from most other developing countries because of their high level of human capital, initial lack of private wealth, and the heritage of anti-entrepreneurialism (Estrin, Meyer, Bytchkova, 2006). However, they share with many developing countries numerous characteristics associated with “weak” institutions, such as poorly conceived and/or ineffectively enforced property rights, insufficiently developed capital markets, and (to varying degrees) bureaucratic impediments (licencing and permits) , corruption.

When we explore the role of women in postcommunist countries might we argue that sex discrimination was lower in communist countries, and this legacy influences these countries today. Furthermore, regulatory mechanisms in these countries may produce uneven gender effects. Male owned and female owned firms behave differently in response to regulation, as literature presents “a law abiding female owned firms” and “law evading male owned firms” in transition economies. However, the impact of regulation on both genders of business owners might be seen as different in terms of the rent to be paid, either through time and effort put in to adhere to the regulation, or resources and cost utilised to evade the law. Hence the impact of regulation on different genders can be higher or lower in absolute terms in specific cases. In the late 1980s and early 1990s, policy makers in transition economies formulated reform strategies that focused on macroeconomic stabilization and microeconomic restructuring, along with supporting institutional and political change. Implementation varied across countries in both speed and the specifics of what occurred. Almost all transition governments plunged ahead, often in rapid ‘big bang’ style, with what Svejnar (2002a) calls *Type I* reforms, namely macro stabilization, price liberalization and dismantling of the institutions of the communist system. Svejnar’s *Type II* reforms involved the development and enforcement of laws, regulations and institutions that would intend for a successful functioning of a market-oriented economy. It was seen as important to develop and enforce a market oriented legal framework that would establish a level playing field, create well-defined property rights, permit the enforcement of contracts, and limit corruption (Estrin et.al, 2009).

According to the European Bank for Reconstruction and Development (EBRD)[i] (EBRD Transition Report, various years), progress in developing a market-supporting legal system everywhere was slow, although greater progress in limiting corruption and in establishing a functioning legal framework and institutions has been made in the Central European and Baltic countries. In recent years, an important impetus for carrying out legal and institutional reforms has been the need to develop a system that conforms to that of the European Union (EU) as a prerequisite for accession (Baldwin, Francois, and Portes, 1997*)*. In the empirical work which follows, differences in institutions and policies can be proxied by country- and time-specific fixed effects.

We feel it is appropriate to undertake a study of regulation and its specific influence on SMEs in this setting now because it has been more than twenty years since the start of transition and hence relatively robust empirical conclusions can now be drawn from the data. Though there is variation in the proportion of females undertaking entrepreneurial activity across transition countries, there have been few attempts to explain this phenomenon. Notable exceptions are Estrin and Mickiewicz (2011), Elam and Terjesen (2010) and Verheul et al. (2006), who explain differences in female and male entrepreneurship using a sample of 55, 11 and 29 countries, respectively, which included transition economies. These studies focused on differences in the levels of development and the quality and capacity of institutions. It is well established that cross-country levels of entrepreneurship vary with GDP per capita (Wennekers et al. 2005). Minniti (2010) focuses on the different impacts of level of development on male and female entrepreneurship.

Even as studies on SMEs and entrepreneurship in transition countries are increasing (e.g., Larc¸on 1998; Mugler 2000; Pfirrmann and Walter 2002; McIntyre and Dallago 2003, Aidis et.al., 2008), very little is known specifically about how female entrepreneurship is influenced by regulatory interventions. Research in mature market economies indicates that a mixture of individual, social, and cultural characteristics differentiates male and female entrepreneurs (Brush and Hisrich 1999; McManus 2001). In comparing post-Soviet countries, it is important to recognise the differing cultural and religious influences, as with the Central Asian republics, and also the varying historical and current roles of women in society (Aidis, et.al, 2008).

Welter et al. (2003) have applied institutional theory to the development of female entrepreneurship in the transition context. As Welter and Smallbone (2003) note, while formal institutions can create opportunities for entrepreneurship, informal institutions can strongly influence perceptions of entrepreneurial opportunities. With regard to women entrepreneurs, formal institutions not only influence the extent to which female entrepreneurship (and entrepreneurship more generally) is able to develop, but also affect the types of enterprises women form. (Welter et al. 2003, Aidis, et.al, 2008). The evolving institutional framework might constrain women's formal integration into the emerging market economy by redefining and changing gender roles, excluding women from participation in the formal economy, and by restricting their access to external resources needed in order to realize a venture (Welter et al. 2003; Brush 2006). Estrin, et. al. (2009) argue that due to gender-defined social positioning, men may also be more effective in dealing with government officials (Bardasi et al. 2011) and in addressing problems of corruption. Women's decisions to enter into entrepreneurship will be more sensitive to contextual factors because the perceived opportunity cost is higher for them than for men, whose first objective of self-employment or employment may be to satisfy household income needs , after which a 'household pecking order' for entrepreneurial or employment entry may become established. We also assume that the institutional environment, property rights protection and legal enforcement may be perceived differently by both men and women business owners.

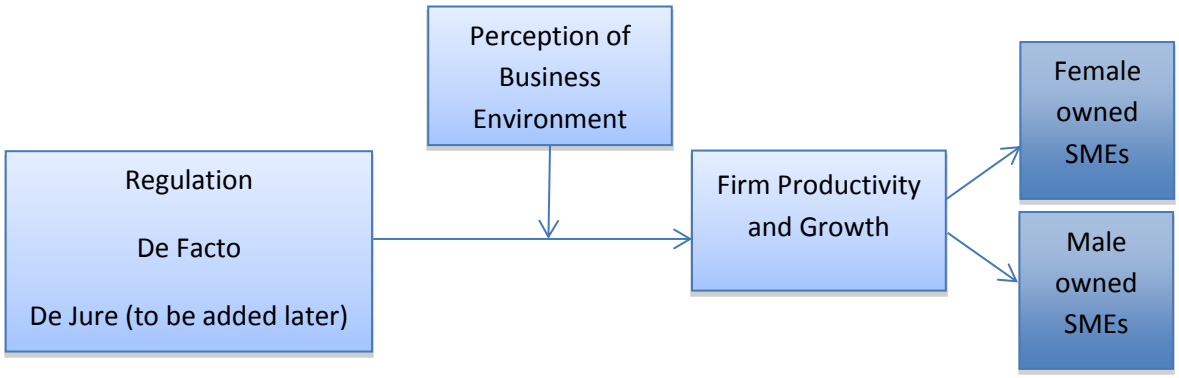
However, the lack of reliable and consistent data has impeded cross-country comparative work on female entrepreneurship in the post-Soviet era, since comprehensive databases containing information about the gender of entrepreneurs do not exist in most countries. The BEEPs dataset therefore offers a unique opportunity to examine issues of transition, regulation and gender in a comparative international framework.

Conceptual model

Our conceptual model in Figure 1 depicts the analytical framework based upon the literature on regulation and entrepreneurship. The conceptual model views regulations from various angles, including firstly the actual ("de facto") institutional measures of business environment faced by firms;

secondly, the set of legal constraints ("de jure") as measured at the country level; and finally firm level perceptions of whether particular type of regulation is viewed as an obstacle to current operations of the business. The influence of regulation on firms' ability to grow is moderated by men and women's perceptions of business environment in the country in which they operate. This work responds to the calls for more cross-country comparative studies looking at gender aspects of entrepreneurship and extends the work by Welter and Smallbone (2003) on formal and informal institutions, as well as relies on more data than studies which merely rely on perceptions of regulatory influences. The model extends the work of Estrin, et.al. (2013), Aisid et.al (2012) and Estrin and Mickiewicz (2011) on the role of institutions and government in entrepreneurial growth.

Figure 1: Conceptual Model of Regulation influencing Firms' growth



The model examines the correlations between these measures of regulation and the SME growth through the lens of gender.

Hence our main hypotheses are:

H0: There is no difference in the association of "de facto" regulation indicators with female owned vs male owned businesses

HA1: Female owned and male owned businesses perceive the regulation as an obstacle to an equal degree

H2A: Firms ability to grow is positively influenced by the actual ("de facto") institutional measures of business environment.

HA3: Firms ability to grow is negatively influenced by perceptions of whether particular type of regulation is viewed as an obstacle to current operations.

Data and Methodology

We undertake this study in a quantitative fashion, since it provides an opportunity for generalisations on the basis of large dataset, and it enables us to uncover the role of regulatory interventions in the countries that have been going through economic and political transition. We are able to explore our research questions in a more nuanced way due to the richness of the data, which provides detailed factual information on various regulatory interventions as well as SME owners' perceptions of regulatory instruments being an obstacle to their business. Table A1 in the appendix shows the most serious obstacles affecting the operation of male and female owned businesses.

We consider the data used in this empirical study, including the variables describing the institutional environment (see also Aidis et al. 2010). We utilise a set of country-level measures of the institutional environment and macroeconomic characteristics, combined with individual-level variables from the Business Environment and Enterprise Performance Survey (BEEPS). We use the 2005-2009 BEEPS data[1] on 24,215 firms covering 27 transition economies of Central and Eastern Europe and Central

[1] BEEPS is a joint project of the EBRD and World Bank. The dataset used here is an unbalanced panel covering 2002, 2005, and 2007-2009. An unbalanced dataset is one in which not all variables are observed in all time periods.

Asia (ECA)[2]. This dataset was originally designed and collected for EBRD and World Bank for the purpose of investigating the business environment in various transition economies, and appears to be used more frequently in the economics literature than in the entrepreneurship literature[3]. The survey was based on face-to-face interviews with a person who normally represented the firm for official purposes, that is, who normally dealt with banks or government agencies/institutions. Respondents provided key figures about the firms, such as ownership, competition, performance and management. The survey also collected information about the gender of the principal owner of the firm and whether the principal owner was also its manager[4].

Summary statistics with decompositions by country, industry, gender of business owner, ownership types and firm size are presented in Table A2. The sample is primarily comprised of small and medium-sized businesses[5] which account for around 90 per cent of the sample. In terms of ownership structure, shareholding companies with shares traded privately represent 31 per cent of the sample, sole proprietors 35 per cent, and partnerships 26 per cent. The remainder comprises of companies with shares traded in the stock market, limited partnerships and other establishments. The sample is representative in terms of industrial coverage, with 44 per cent of SMEs operating in manufacturing, 21 per cent in wholesale and 35 per cent in such sectors as mining, construction, transport, hotels and other services. The BEEPS dataset contains detailed information on firm characteristics, access to finance and sources of investment in fixed assets, the influence of regulatory interventions on the business, firms' perceptions of the business environment and of regulation, as well as characteristics of firm owner and senior manager, such as gender and the number of years in the current specialisation. Firms' perceptions of business environment and regulation are presented in the form of Likert scales from 0 which stands for "not representing an obstacle" to 5 which stands for "very severe obstacle".

To answer our research questions through our conceptual model which includes factual and perceptual information about regulatory interventions, it is important to provide an example of the factual question from the BEEPS survey instrument: 'In reference to that application for an electrical connection, approximately how many days did it take to obtain it from the day of the application to the day the service was received?' , and an example of the perception based question from the BEEPS survey instrument is: 'Is electricity No Obstacle, a Minor Obstacle, a Moderate Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this establishment?'

Variable Definition and Measurement

The dependent variable is Log[6] of *Sales per Worker*, where Sales are measure in US Dollars. We also consider log of *Sales per Worker Growth*. We use Logarithmic function for Sales per Worker following Sabarwal and Terrell (2009) and Commander and Svejnar (2010) to estimate the Cobb-Douglas type production function. We also estimate the productivity growth equation using the log of growth of sales per worker. Both regression equations are presented below.

Our main variables of interest include: Firm Size as measured by the number of employees, Ownership Type (Private Domestic and Private Foreign), Firm Age, and Gender of the Business Owner, as well as Firm Perception about Regulation being an Obstacle and "de facto" measures of business environment. In future work we plan to include legal constraints ("de jure") as measured at

[2] Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Tajikistan, Uzbekistan and Ukraine. We drop Turkey from the BEEPS dataset as it is not a postcommunist country.

[3] The survey samples were constructed by stratified random sampling from a national registry of firms or their equivalents. The firms covered were drawn from industry and services; the distribution between these sectors was determined according to their relative contribution to GDP in each country. Firms operating in sectors subject to government price regulation and prudential supervision (banking, electric power, rail transport, and water and waste water), enterprises with more than 10,000 employees, and firms that started their operations after 2002 were excluded from the sample. As in other countries, around three quarters of the firms sampled were small enterprises. Sample details can be found in Muravyev, et al. (2009)

[4] Muravyev, et al (2009)

[5] We use the EU employment criterion to define micro (fewer than 10employees), small (10 to 49), medium ((50 to 249), and large firms (over 250). SMEs are defined as firms employing less than 250 employees.

[6] Logarithmic calculations were used to make the production fucntion linear so that it may be estimated via the regression analysis.

the country level. We decided not to include profits data due to its poor quality and many missing observations.

Econometric Estimation Strategy

Difference-in-means tests for dependent variables

To obtain preliminary indication of possible differences between male and female SME owners in actual "de facto" regulatory interventions variables and perceptions of business environment as obstacles by gender, we run a differences-in-means test. The results of the estimation for the full sample of firms are presented in Table 1. However, since the difference-in-means tests do not account for other potential influences such as industry and country effects, firm size and ownership, we then provide a regression estimation of the impact of "de facto" and perception of regulation indicators on the Firm Productivity and Growth measures.

Regression analysis

Depending on the structure of our variables of interest (binary versus continuous percentage), we employ the Ordinary Least Squares (OLS) estimation method. We estimate the two equations on panel data.

The regression specification is following:

$$\text{Log Sales per Worker } SW_{it} = \alpha_O * \text{Ownership}_{it} + \alpha_{FA} * \text{Log of Fixed Assets} + \alpha_{EMPL} * \text{Log of Employment} + \text{Industry}_{ij} + \text{Location}_i + V_i + \lambda_{it} + \varepsilon\text{rror}_{it} \quad (1)$$

where the dependent variable, SW_{it}, is a log of firm *i*'s productivity at time *t*, and *i* and *j* index firm and industries (at two digit NACE level), respectively.

$$\text{Log Growth of Sales per Worker } GSW_{it} = \alpha_O * \text{Ownership}_{it} + \alpha_{FA} * \text{Log of Fixed Assets} + \alpha_{EMPL} * \text{Log of Employment} + \text{Industry}_{ij} + \text{Location}_i + V_i + \lambda_{it} + \varepsilon\text{rror}_{it} \quad (2)$$

where the dependent variable, GSW_{it}, is a log of firm *i*'s growth at time *t*, and *i* and *j* index firm and industries (at two digit NACE level), respectively.

Quartile regression

To allow for non-linearity of the effect of our variables of interest on Sales per Worker we use quartile regression where Sales per Worker are divided into 4 sub-sets and low productive firms can possibly be affected differently by regulation, than highly productive firms. There is a rapidly expanding empirical quartile regression literature in economics that, taken as a whole, makes a persuasive case for the value of "going beyond models for the conditional mean". By using quartile regressions, we investigate to what extent certain co-variates may affect the conditional distribution of Sales per Worker or Growth of Sale per Worker more fundamentally, by changing the location, scale end shape (Koenker and Bassett 1978; Buchinsky 1998; Koenker 2005). Hence this method allows us to investigate whether high productivity firms are influenced by regulation in the same way as low productivity firms.

Findings and Analysis

The results of the difference-in-means estimations for the factual variables measure the quality of business environment including:

- days it took the firm to receive electrical, water and telephone connection;
- whether they paid an informal gift for these connections,
- total number of inspections,
- and number of days spent dealing with inspections in the last fiscal year;
- compulsory certification,
- and the percentage of sales subject to compulsory certification,
- as well as how many certificates they have obtained in the last year;
- inspections by tax officers;
- other types of permits and how many days it took the firm to obtain these)

and perceptions of the quality of business environment variables including:

- the connection to electricity and water,
- tax rates
- business licencing and permits
- court system
- business inspections
- compulsory certification
- crime and security
- labour regulations
- transportation
- customs
- % of time senior management spends dealing with governmental regulations).

Table 1: Difference-in-means test results

Variable	N Obs[7]	Difference in means[8]	t-test[9]	P value[10]
De facto – Quality of Business Environment				
Days to receive Electrical connection	2805	**-6.970****	-2.3646	0.0091
Informal Gift for Electrical connection	7598	**-0.031*****	-3.7443	0.0001
Days to obtain Water connection	832	**-12.439***	-1.7195	0.0429
Informal Gift for Water connection	983	**-0.0328***	-1.9379	0.0265
Days to receive Telephone connection	4068	-0.298	-0.1386	0.4449
Informal Gift for Telephone connection	8382	**-0.033*****	-4.5151	0.0000
Total number of inspections in last fiscal year	14691	**0.432****	1.6360	0.0509
Number of working days spent on dealing with inspections	12247	**-3.047*****	-4.2341	0.0000
Compulsory certification	9370	**-0.016***	-1.5365	0.0622
% of Sales subject to Compulsory certification	4305	**2.071****	1.9325	0.0267
Number of compulsory certificates obtained in last fiscal year	3741	*-2.264*	-1.1747	0.1201

[7] The differences in the number of observations for variables is due different response rate for various questions.
[8] The difference in means values stand for: positive means that the mean for male owned firms is greater than female owned firms; negative –means that he mean for male owned firms is less than female owned firms.
[9] T test is used to calculate whether female owned firms and male owned firms in this dataset belong to different distributions for the variables. The higher the value (+ or -) the more different the distributions of that parameter are.
[10] The results in Bold represent statistically significant results. *** denotes statistical significance at 1%, showing the strongest relationship. ** denotes statistical significance at 5%. * denotes statistical significance at 10%. Number in Italic represent more than 10% but still borderline significant results.

Days spent on obtaining compulsory certificates in last fiscal year	2783	**-3.596****	-1.614	0.0504
Days spent on obtaining permits in the last two years	3003	**4.084***	1.313	0.0836
Did this establishment pay for security?	17947	**0.010***	1.3523	0.0882
Inspections by tax officials over last year	17885	**-0.034*****	-4.4984	0.0000
Informal gift for tax inspections	12221	**-0.0566*****	-7.4090	0.0000
Perceptions of the Quality of Business Environment				
Electricity connection as obstacle	17836	**-0.104*****	-4.6009	0.0000
Telecomms connection as obstacle	10195	**-0.114*****	-4.7658	0.0000
Tax Rates as obstacle	17779	**-0.116*****	-6.0715	0.0000
Business Licencing and permits as Obstacle	16981	**0.0783*****	4.1361	0.000
Court system as obstacle	16386	*-0.023*	-1.1113	0.1332
Business Inspections as obstacle	9345	*-0.263*	-0.9984	0.1591
Compulsory Certification as obstacle	8379	**0.0439***	1.63616	0.0514
Crime, theft and Disorder as an obstacle	17428	**-0.121*****	-5.8848	0.0000
% of senior management time spent dealing with government regulations	16379	**-0.977*****	-3.77650	0.0001
Labour regulations as obstacle	17664	**-0.055*****	-3.01905	0.0007
Inadequately educated workforce as obstacle	17616	**-0.100*****	-4.7975	0.0000
Transportation of goods, supplies and inputs as obstacle	17595	**-0.053****	-2.7050	0.0034
Customs and Trade regulations as obstacle	15603	**0.115*****	5.7693	0.0000

Both results for “de facto” data and perceptions are consistent with our intuition derived from the literature, that female owned businesses are negatively affected by regulation and the business environment. Based on the results of the t-test we can reject our null hypothesis (H0) which claims that there is no difference in the impact of “de facto” regulation indicators on Female owned vs male owned businesses. Table 1 shows a higher proportion of female-owned businesses used informal gifts for connecting to electricity (by 3.1%), water (by 3.2%) and telephone (by 3.2%), and for tax inspection (by 5.4%)., However, it took women longer to receive the connection to electricity (by 7

days) and water (by 12 days) in comparison with their male counterparts. Informal gift represents a drain on micro and small businesses already scarce resources, and foreseeing the necessity of paying a bribe may deter start-up. Even small gifts like those reported above reduces liquidity. Female-owned businesses spent 3 days longer obtaining compulsory certification, as the % of Sales subject to compulsory certification in their firms is 2% higher. This could be due to the industry and nature of the businesses females operate in transition economies. However, what was interesting is that male-owned firms were inspected slightly more often than their female counterparts, but female-owned firms spent 3 more days on average dealing with inspections.

If we compare difference-in-means test results with perceptions of the quality of business environment, we find that female owners perceive certain aspects as more of an obstacle. A higher proportion of female - owners see as obstacles electricity and telephone connections as an obstacle (by 9% and 14% respectively),tax rates (by 5%) and crime, theft and disorder (by 10%). Lower proportion of female-owners view business licencing and permits as well as customs and trade regulations as an obstacle (by 7% and 11% respectively). Higher proportion of female-owners view labour regulation and inadequately educated workforces as obstacles (by 5% and 6% respectively). Lower proportions of female-owners view compulsory certification as an obstacle by 4%, which is the opposite of the findings from de facto data. And finally female-owned firms perceive spending time on dealing with government regulations more of an obstacle by 10% on average. No effect was found for the influence of Tax Administration and Corruption. In terms of permits, we can report that male owned firms obtained more permits, but the difference was not statistically significant, and that female owned firms spent longer to obtain the permits, however, the difference was not statistically significant too.

To explore the relationships between variables further, we have devised four models which test the influence of Utility connection (1), Notion of informal gift (2), Influence of inspections (3) and Influence of compulsory certification and permits (4) on Sales per Worker (Table 2, p.11). We first perform OLS estimation on the pooled cross-sectional data. The regressions included the following explanatory variables: Firm size, Ownership Type and number of employees, and the year of establishment, as well as industry and country dummies. In another estimation equation we also controlled for log of Fixed Assets, however, the results are the same. We used robust option to account for heteroskedasticity. Due to large number of missing observations in the dataset the initial results below will be developed further by looking at panel data methods, and possibly controlling for endogeneity by using lags of our “de facto” variables.

The regression results further point to business environment being an enabler of business activity for male owned firms and having a negative or no impact for female owned firms in transition economies. Table 2 shows the main result from the regressions is linked to the issue of payment of informal gift for connection to electricity, specifically for male-owned firms who do not pay informal gifts for such connection, have 72.7% higher sales. There is no such effect identified for female-owned firms. However, for female-owned firms that spend 10 more days connecting to telecoms, receive 8% higher sales per worker. In terms of compulsory certification, male-owned firms, which spend ten more days on obtaining this certification, have 2.5% higher sales per worker. Private firms with foreign ownership are found to be more efficient. However, at this stage of analysis these are seen as correlations, and we cannot report causation.

Next we put together all measures of perception of business environment as an obstacle into one index, which averages all questions about constraints from Table A1. As a result of having missing data in each question across 3 years of 27 countries, we end up with a dramatically reduced number of observations; however, it enables us to examine the “bigger picture” in terms of the quality of business environment and its influence on those SMEs which are affected by all of these factors potentially perceived as obstacles to their business operations.

Furthermore, to reflect the non-linearity of the effect of our control variables on productivity and growth, we use quartile regression where log of Sales per Worker and log of Growth of Sales per Worker are divided into 4 sub-sets to allow us to investigate whether the low productive firms can possibly be affected differently by regulation, than highly productive firms (Table 3).

Table 2: OLS estimation - regression models[11]

Sales Per Worker	Model 1		Model 2		Model 3		Model 4	
	Male owned	Female owned	Male owned	Female owned	Male owned	Female owned	Male owned	Female owned
L1 N of Employees	-.0001 (0.210)	.00007 (0.642)	**-0.0004 ***** (0.001)	-	-	-	-	-
B5 Firm's year of establishment in this country	.0037 (0.265)	.0044 (0.467)	-	-	-	**0.0031*** (0.089)	-	-
B2a Private Domestic Firm	.0006 (0.943)	.0036 (0.513)	-	-	-0.02261 (0.141)	*.0.0029 (0.144)*	**0.0060** (0.019)**	0.0022 (0.478)
B2b Private Foreign Firm	.0082 (0.943)	.0038 (0.580)	-	-	-0.0198 (0.231)	**0.009***** (0.000)	**0.0126 *** (0.000)**	**0.0081** (0.018)**
C4 – Days to connect electricity	0.0003 (0.997)	***-0.0025*** (0.130)	-	-	-	-	-	-
C13 – Days to connect Telecoms	***0.0021*** (0.165)	**0.008**** (0.046)	-	-	-	-	-	-
C20 Days to connect Water	-	-0.0033 (0.114)	-	-	-	-	-	-
C5 – Informal Gift for Electricity connection	-	-	**0.7272**** (0.021)	-0.1346 (0.960)	-	-	-	-
C14 Informal Gift for Water connection	-	-	0.2624 (0.561)	-1.435 (0.845)	-	-	-	-
C21 Informal Gift for Telecoms connection	-	-	-0.5736 (0.225)	-2.005 (0.742)	-	-	-	-
J4 Frequency of inspections	-	-	-	-	0.7163 (0.166)	-0.0032 (0.425)	-	-
J3 Was the company inspected in the last 12 months	-	-	-	-	1.0494 (0.274)	-	-	-
ECAj5a Number of work days spent on dealing with inspections	-	-	-	-	-1.1291 (0.209)	**0.0002*** (0.020)**	-	-
ECAp2 % of sales of produces requiring compulsory certification	-	-	-	-	-	-	0.000905 (0.993)	-0.0006 (0.629)
ECAp4 Number of days spent on dealing with compulsory certification	-	-	-	-	-	-	**0.0025*** (0.000)**	0.0022 (0.002)
Industry dummies	Included	Included	Included	Included	Included	included	Included	Included

[11] The results in Bold represent statistically significant results. *** denotes statistical significance at 1%, showing the strongest relationship. ** denotes statistical significance at 5%. * denotes statistical significance at 10%. Number in Italic represent more than 10% but still borderline significant results.

Country dummies	included	included	included	included	included	included	included	included
N	297	120	257	36	83	1547	1320	949
R-squared/Chi-squared	0.8463	0.8414	0.8227	0.9574	0.9351	0.7737	0.7828	0.7743
Pr> F (Pr > Chi-sq.)	0.0000	0.0000	0.0000	0.1545	0.0000	0.0000	0.0000	0.0000

Table 3[12] [13]. Quartile regression of Sales per worker and Growth of Sales per Worker on Perceptions

Log Sales per Worker / Log Growth Sales per Worker	**Mean Perception index**		**Log Fixed Assets**		**L1 N of Employees**		**B5 Firm's year of establishment in this country**		**B2a Private Domestic Firm**		**B2b Private Foreign Firm**		**R-squared/Chi-squared**
Male owned (low 25%)	***-0.1644***	***0.4833***	**0.3300*****	0.1124	**-0.2096****	-0.3048	0.0018	-0.0212	0.0002	**-0.0280***	0.0057	-0.0179	SpW 0.5808
	0.162	0.14	0.000	0.356	0.013	0.147	0.843	0.393	0.975	0.063	0.4	0.277	GSpW 0.2666
Male owned (med 50%)	-0.0824	**0.4103****	**0.2582*****	**0.1605****	**-0.1791*****	**-0.2806****	0.0068	-0.0069	-0.0026	**-0.0162***	0.0044	-0.0061	SpW 0.6182
	0.394	0.027	0.000	0.02	0.01	0.018	0.361	0.62	0.606	0.055	0.427	0.507	GSpW 0.2846
Male owned (high 75%)	0.0591	**0.4845***	**0.2448*****	**0.2615****	**-0.1410****	-0.1981	0.0067	0.0088	**-0.0082***	0.0051	-0.0022	0.0077	SpW 0.6245
	0.535	0.1	0.000	0.018	0.039	0.294	0.363	0.695	0.097	0.706	0.683	0.6	GSpW 0.3253
Male owned (high 95%)	-0.0733	**0.2991*****	**0.2177*****	**0.1678*****	*-0.1776*	*-0.0684*	0.0106	-0.0016	**-0.0164****	**0.0079****	-0.0100	0.0045	SpW 0.6245
	0.65	0.000	0.001	0.000	0.124	0.167	0.396	0.784	0.052	0.026	0.282	0.25	GSpW 0.5049
Industry dummies	Included												
Country dummies	Included												
N	405 / 229												
Female owned (low 25%)	-0.0582	-0.0334	**0.2116*****	0.0493	*-0.128*	-0.2984	**0.0189*****	0.0103	-0.0064	-0.0022	0.0071	0.0236	SpW 0.5627
	0.627	0.921	0.000	0.756	0.157	0.258	0.004	0.564	0.258	0.897	0.34	0.283	GSpW 0.2776
Female owned (med 50%)	-0.0957	-0.313	**0.1633*****	-0.0294	*-0.1149*	-0.2396	0.0031	-0.0037	0.000	-0.0016	*0.0097*	0.0238	SpW 0.6376
	0.330	0.293	0.000	0.835	0.122	0.306	0.559	0.816	0.998	0.917	0.112	0.223	GSpW 0.2803
Female owned (high 75%)	-0.0205	*-0.4572*	**0.1811*****	0.1821	**-0.2256*****	**-0.5876****	0.0053	-0.0047	0.0062	0.0108	**0.0217*****	0.0147	SpW 0.6376
	0.837	0.174	0.000	0.252	0.003	0.027	0.322	0.79	0.189	0.524	0.001	0.504	GSpW 0.3227
Female owned (high 95%)	**-0.3256***	**-0.3619*****	**0.3204*****	**0.3391*****	*-0.2038*	**-1.1101*****	0.0126	**-0.0073*****	0.0084	**0.0177*****	0.0116	**0.0258*****	SpW 0.6382
	0.074	0.000	0.000	0.000	0.137	0.000	0.195	0.000	-0.008	0.000	0.302	0.000	GSpW 0.3227
Industry dummies	Included												
Country dummies	Included												
N	292 / 155												

[12] The results in Bold represent statistically significant results. *** denotes statistical significance at 1%, showing the strongest relationship. ** denotes statistical significance at 5%. * denotes statistical significance at 10%. Number in Italic represent more than 10% but still borderline significant results.

[13] We have also included year dummy variable for time, as well as interaction variables of country fixed effects with time, to capture variation of country level effects over time. The results are almost identical to those presented in table 3.

In our attempt to analyse the data on SMEs productivity and growth we were able to find empirical evidence to support our hypotheses that female owned and male owned businesses perceive the regulation differently, and that female-owned firms' ability to grow is negatively influenced by perceptions of quality of business environment; however, male-owned firms' productivity and growth are positively influenced by such perceptions. Hence we find support for proper enforcement of regulation as an enabler for Male owned firms but not for female owned firms. Additionally we explored our hypotheses for different levels of firms' productivity and growth, and have found striking differences between highest performers (top quartile) and the rest of the firms.

In particular, the results for quartile regression based on perception of regulation as an obstacle suggest a negative relationship for low performing firms owned by males (bottom 25% in terms of productivity), which indicates that firms which report regulation to be more of an obstacle to their business operations, have lower Sales per Worker controlling for other firm level, industry and country characteristics. This, however, could be the result of the firms trying to grow and as such facing more hurdles regarding regulation, and this requires further investigation. For female owned firms we find a similar but not statistically significant relationship across all the quartiles except the top quartile. No association is found between the perception index and the Sales per Worker of the more productive male owned firms. For female owned firms we find a negative significant relationship between the mean perception index and Sales per Worker, indicating that these high performing female owned firms that perceive the business environment as an obstacle tend to have lower productivity. We consistently find positive significant coefficient on the mean perception index in the growth of Sales per worker for male owned firms, indicating that firms that perceive regulation as more of obstacles have higher Sales growth. While they perceive business environmental and regulation as an obstacle, they are expanding, as compared to female owned firms who are found to have lower Sales Growth. Even for higher performing quartile, where the effect is significant, we see that Sales Growth in female owned firms is negatively affected by such perceptions.

We also find that for both male and female owned firms in transition economies regardless of the starting level of efficiency, higher levels of fixed assets are associated with higher levels of productivity. In terms of sales growth however, we found this effect only for male owned firms, and more over this effect increases in magnitude for faster growing quartiles. For female owned firms Sales growth is not associated with Fixed Assets for low to medium performing firms, which could be due to the more labour intensive industries in which they are located, but this requires further investigation. However, for high productivity firms (top quartile of Sales Growth) we find strong positive relationship between Fixed assets and Sales Growth, which may indicate that for these firms investment into fixed assets, is associated with expansions of their business. In similar vein, the decrease in capital / labour ratio reduces sales per worker as consistent with Cobb-Douglas production function for both male and female owned firms. The same effect is found for Sales Growth.

As part of regression equation we also included the age of the firm, and ownership types. In terms of firm age, we found that newer female owned firms tend to have higher productivity, but they grow slower for the top efficiency quartile. This echoes the literature on *de novo* private firms which seem to outperform older firms in terms of productivity (Estrin, et al, 2009). We also found that female owned foreign firms in higher quartile have higher Sales Growth, and male owned domestic firms have lower Sales per Worker, but higher Sales Growth, which is to some extent consistent with the literature, that generally finds that foreign owned firms are more efficient than domestic firms.

Discussion

We now turn to discussion of the results presented above. From our difference in means tests results we can see that regulation has a constraining effect from both factual data and in terms of perceptions the business owners have of business environment and regulation. Regarding our first research question our analysis suggested that female owned firms see regulation as more of a burden in different aspects of functioning of their enterprise. Our results are consistent with Estrin and Mickiewicz (2011). Interestingly, the literature on transition economies argues that men in these environment tend to be better off due to them being embedded within stronger informal networks either through former political ties (Smallbone and Welter, 2001) or army (based on anecdotal evidence). However measuring effect of networks was not part of this investigation.

While we have been able to find some support for the new proposals in the regulation literature that regulation has an enabling impact (Kitching, 2013b), this was confirmed for male owned firms. The latter effect maybe observed due to for instance hidden enablers, where regulation may be enabling

even though SME owners do not perceive it as such. Looking at the set of questions used within the dataset used to characterise the regulatory environment, they seem to be focused on specifying how regulation constrains SMEs, with a view to improving for instance licensing and utility connection times, enforcement action, avoiding corruption and other elements, which if these are improved upon, will become enablers of business development and growth. We find some evidence of this effect in our sample. Moreover, one may ask how SMEs can trade and grow at all if the regulation is solely a constraint on action? Clearly, SME owners would be paralysed if regulation did not enable action too.

We only found one possible element of evidence of impact of regulation, or evidence of how regulation is implemented in different countries of transition economies based on the fact that male owned firms that do not pay informally for connecting to utilities are associated with higher Sales per Worker. Such payments may be described as extra-regulatory i.e. they are not required by regulation. They are really rents that those with some regulatory authority are able to extract by means of their enforcement position and by going beyond their regulatory remit. What is unclear is why there is a gender difference. This to some extent confirms the ideas presented in Kitching (2013b) that firms might benefit from regulation but we find this is the case for male owned as compared to female owned firms. However, we find that male and female owned firms will perceive the impact of regulation differently in terms of the rent they have to pay, either through time and effort put forth by the enterprise to adhere to the regulation, or resources and cost utilised to evade the law.

Our key finding in this paper is how differently perception of regulation as an obstacle is related to Sales Growth. While for male owned firms its relation to Sales Growth is consistently positive for all levels of efficiency, for female owned firms it is either non-existent for lower levels of efficiency or strongly significant negative for higher efficiency firms. In an attempt to answer our third research question, we have found evidence that male owned firms which report the business environment and regulation as a higher obstacle achieve better economic performance in terms of larger Sales growth. This could potentially mean that either regulation is vital for expanding of their business, perhaps because they may have other informal ways of manoeuvring through the myriads of regulatory interventions, or it could mean that their perceptions do not necessarily reflect the actual state of things in business environment, and that regulation is not such a burden for these firms after all. This explanation is consistent with our results for “de facto” indicators, where such factors were not generally found to be significant in explaining the productivity of male owned firms.

The story for female owned firms, however, is drastically different. Firstly, perceiving regulation as more of an obstacle is associated with lower Sales growth especially for the most productive firms, which should be showing higher Sales Growth like male owned enterprises do. Such firms seem to be discouraged from development by business environment and regulation, and as opposed to male owned firms, female owners may not be embedded in informal networks to the same extent due to various reasons including less participation in political life, not serving in the army and breaks for maternity and taking care of family members. We find that on average female owned business “de facto” spend more time dealing with key regulatory interventions, and their perception of business environment and regulation is also more negative than that of males.

Effect of capital constraint on female owned firm is found to be not significant, which means that capacity utilisation does not constrain Sale Growth of firms except for the highest performing quartile. This is in contrast with Sabarwal and Terrell (2008), who, for a similar set of data for 2005, find that female owned firms are constrained in terms of capital and should the capital constrain be lifted they should grow to a more profitable scale. Our results for the best female owned firm performers agree with Sabarwal and Terrell (2008). We however find that this is true for male owned firms, which is interesting given that they use a cross-sectional 2005 subset of our data. So where women have resource constraint, this impedes their growth, whereas we do not see this trend amongst male owned firms, which even in the lowest proportion of productivity seem to perform better. Hence gender of the business owner matters when it comes to regulatory interventions.

Conclusion

In this paper we have investigated whether regulation constrains or enables SME growth for male and female business owners in transition economies. By analysing data from the 2005-2009 BEEPS datasets for 27 countries in Central and Eastern Europe, and Central Asia, we have attempted to answer our research questions: firstly, whether regulation is constraining SMEs in transition economies; secondly, whether regulation enables SMEs growth, even if SME owners do not perceive

it as such; and finally whether there are gender differences in perceptions of regulation. In this paper we argue that the impact of regulation is contingent upon business owners' adaptations to particular interventions within the broader social contexts within which they operate.

Our findings suggest firstly, that regulation is clearly gendered, where it produces effects that advantage or disadvantage either men or women. But these effects depend on how men and women act. We have found variability in regulatory impacts by gender, firm size, firm age and ownership type. Moreover, a more nuanced analysis provides support for the view that business regulation enables growth for male-owned firms, while for female-owned firms regulatory interventions are more of an obstacle. Secondly, we find that gender matters in terms of impact of regulation if the firms are underperforming. This is evident for the female owned firms from transition economies. Finally we find that more efficient firms are affected by regulation equally, and although perceive regulation as an obstacle, manage to achieve better performance.

It is unclear whether business owners who complain more about regulation perform better. Possible interpretations of this finding may be due to higher performing firms being more aware of the regulatory framework they need to abide by and hence they report it as a greater obstacle. Alternatively, greater awareness of regulatory obstacles amongst business owners enables and/or motivates SME owners to take action to improve performance and is as a result successful, for instance amongst our top performers in the sample for both genders. Finally, SMEs achieving high sales growth are also those seeking to grow faster and hence noticing any regulation as an obstacle to that intended growth, whereas those firms with lower sales growth are happy to operate at low levels of sales and hence do not perceive regulation as a constraint on achieving these limited aims. However, we find that these explanations might be plausible for male owned firms, but hardly help explain the findings for female owned firms.

The findings of this research echo and confirm some of the work produced by Smallbone and Welter (2001) that many enterprises in post-socialist countries are "set up, survive and sometimes even grow despite government, because of the creativity of individuals in mobilising resources and their flexibility in adapting to hostile external environments". Research on the impact of ownership type found that mass privatization which was more effective in Central and Eastern Europe, was found less effective in former Soviet Union countries (Guriev and Megginson, 2007). This is consistent with our results, where private domestic ownership is rarely associated with the increase in productivity and growth, as opposed to private foreign ownership. It has been argued that the absence of the effect of privatization is closely knit with lack of "rule of law, competition, hard budget constraints, high quality governance and effective regulation" (ibid). As the present study uses later years of data it is interesting that some issues highlighted by previous literature are still found to have negative impact on entrepreneurs in transition countries especially for female business owners. Failure to understand how regulation affects business performance of female and male owned firms means that policy interventions are likely to produce unwanted consequences because neither the full range of mechanisms shaping small-business performance nor the conditions which support or hinder the exercise of these mechanisms are fully identified.

In this paper we investigated how regulation enables, motivates and constrains men and women to act in different ways by looking at different levels of productivity of firms owned by different genders of owners. Specifically our research suggests that gender matters in terms of impact of regulation if the firms are underperforming, but more efficient firms are affected by regulation equally. By exploring the context of transition economies, this paper pays more attention to contextual influences by gender of business owner, industry and country with its unique institutional environment, which extends the contribution of this research to the mainstream entrepreneurship theories. By placing this study into policy–orientated literature, and providing evidence of regulatory impact on firms owned by men and women, the nuanced findings of this paper provide grounds for better policy transfer in countries where policy development and implementation on the ground is in its infancy

References

Aidis, R., Estrin, S., and Mickiewicz, T. (2008). Institutions and entrepreneurship development in Russia: A comparative perspective. *Journal of Business Venturing*, *23*(6), 656-672.

Aidis, R., Estrin, S., and Mickiewicz, T. M. (2012). Size matters: entrepreneurial entry and government. *Small Business Economics*, *39*(1), 119-139.

Annandale, D. and Taplin, R., 2003. Is environmental impact assessment regulation a 'burden' to private firms? *Environmental Impact Assessment Review,* **23**(3), pp. 383-397.

Baldwin R, (2004) Better Regulation: Is it better for business? *Federation of Small Businesses,* http://www/fsb.org.uk/documentstore/filedetails.asp?id=49

Baldwin, Robert (2006) Better regulation in troubled times. Health economics policy and law, 1 (3). pp. 203-207.

Baldwin, R. E., Francois, J. F., and Portes, R. (1997). The costs and benefits of eastern enlargement: the impact on the EU and central Europe. *Economic policy*, *12*(24), 125-176.

Baker, T and Nelson, RE (2005) 'Creating something from nothing: Resource construction through entrepreneurial bricolage'. *Administrative Science Quarterly* 50(3): 329–366.

Bardasi, E., Sabarwal, S., and Terrell, K. (2011). How do female entrepreneurs perform? Evidence from three developing regions. *Small Business Economics*, *37*(4), 417-441.

Bartik TJ. (1988) 'The effects of environmental regulation on business location in the United States,. *Growth and Change*;19(3):22 –44.

Berg, J. and Cazes, S. (2007). The doing business indicators: measurement issues and political implications. Working paper, *Economic and Labour Market paper*, International Labour Organisation.

Bruton, G, Ahlstrom, D and Obloj, K (2008) 'Entrepreneurship in emerging economies: Where we are today and where the research should go in the future'. E*ntrepreneurship, Theory and Practice* 32(1) pp.–13.
Brush, C. (2006). Women entrepreneurs: A research overview. In M. Casson, B. Yeung, A. Basu, and N. Wadeson (Eds.), *The Oxford handbook of entrepreneurship* (pp. 611–628). Oxford: Oxford University Press.

Brush, C. and Hisrich, R. (2000). *Women-owned businesses: An exploratory study comparing factors affecting performance* (Working Paper Series 00-02). Washington, DC: RISEbusiness.

Buchinsky, M. (1998). The dynamics of changes in the female wage distribution in the USA: a quantile regression approach. *Journal of applied econometrics*, *13*(1), 1-30.

Carter, S., and Allen, K. (1997). Size determinants of women-owned businesses: choice or barriers to resources?. *Entrepreneurship and Regional Development*, *9*(3), 211-220.

Commander, S., and J. Svejnar. 2007. "Do Institutions, Ownership, Exporting and Competition Explain Firm Performance? Evidence from 26 Transition Countries." Institute for the Study of labour (IZA) Discussion Paper 2637, Bonn

Davidsson P (2003) 'The domain of entrepreneurship research: Some suggestions'. In: Katz JA and Shepherd DA (eds) *Cognitive Approaches to Entrepreneurship Research*. Amsterdam: JAI Press, pp.265–314.

Djankov, S., LaPorta, R., Lopez-de-Silanes, F., Schleifer, A., (2002). The regulation of entry. *Quarterly Journal of Econ*omics 117 (1), 1–37.

Dyson N. (2000) 'Compliance will beggar the economy'. *WA Business News* [26 Oct].

European Bank for Reconstruction and Development (EBRD). Transition Report:

First Edition. EBRD: London. Various years

Edwards P, Ram M and Black J (2003) The impact of employment legislation on small firms: a case study analysis, DTI Employment Relations Research Series No. 20. Available at: www.bis.gov.uk/files/file11518.pdf (accessed 5 April 2013).

Elam, A., and Terjesen, S. (2010). Gendered institutions and cross-national patterns of business creation for men and women. *European Journal of Development Research*, *22*(3), 331-348.

Eriksson, P., Katila, S., and Niskanen, M. (2009). Gender and sources of finance in Finnish SMEs: a contextual view. *International Journal of Gender and Entrepreneurship*, *1*(3), 176-191.

Estrin, S., Hanousek, J., Kočenda, E., and Svejnar, J. (2009). The effects of privatization and ownership in transition economies. *Journal of Economic Literature*, 699-728.

Estrin, S., and Mickiewicz, T. (2011). Entrepreneurship in transition economies: the role of institutions and generational change. *The Dynamics of Entrepreneurship: Evidence from the Global Entrepreneurship Monitor Data*, 181-208.

Estrin, S., Meyer, K. E., and Bytchkova, M. (2006). Entrepreneurship in transition economies. *The Oxford Handbook of Entrepreneurship, Oxford University Press: Oxford*.

Estrin, S., and Mickiewicz, T. (2011). Institutions and female entrepreneurship. *Small business economics*, *37*(4), 397-415.

Estrin, S., Korosteleva, J., and Mickiewicz, T. (2013). Which institutions encourage entrepreneurial growth aspirations?. *Journal of Business Venturing*, *28*(4), 564-580.

Estrin, S., Jan Hanousek, Evzen Kocenda, and Jan Svejnar. (2009). "The Effects of Privatization and Ownership in Transition Economies." *Journal of Economic Literature*, 47(3): 699-728.

Federation of Small Businesses (2011) The burden of regulation. Available at: www.fsb.org.uk/frontpage/assets/the%20burden%20of%20regulation%20-%20may%202011.pdf (accessed 5 April 2013).

Fletcher I, (2001), ``A small business perspective on regulation in the UK'', *Economic Affairs* 21(2) pp. 17 – 22

Gunningham, N. and Kagan, R. A. (2005), Regulation and Business Behavior. Law and Policy, 27: 213–218.

Gunningham, N., R. Kagan, and D. Thornton (2003) *Shades of Green: Business, Regulation, and Environment.* Stanford, Calif.: Stanford Univ. Press

Guriev, Sergei, and William L. Megginson. (2007)"Privatization: What Have We Learned?" In *Annual World Bank Conference on Development Economics— Regional 2007: Beyond Transition*, ed. François Bourguignon and Boris Pleskovic, 249–96. Washington, D.C.: World Bank.

Hodgson, G. M. (2009). On the institutional foundations of law: the insufficiency of custom and private ordering. *Journal of Economic Issues*, *43*(1), 143-166.Kagan, R., and L. Axelrad (2000) *Regulatory Encounters: Multinational Corporations and Adversarial Legalism*. Berkeley: Univ. of California Press.

Kitching J, 2006, "A burden on business? Reviewing the evidence base on regulation and small-business performance" *Environment and Planning C: Government and Policy* **24**(6) 799 – 814

Kitching, J. (2007) 'Is Less More? Better Regulation and the Small Enterprise' in Weatherill, S. *Better Regulation*, chapter 9, Publisher: Hart, pp.155-173

Kitching,J., Hart, M. and Wilson, N. (2013a) Burden or benefit? Regulation as a dynamic influence on small business performance. *International Small Business Journal*, ISSN (print) 0266-2426 (Epub Ahead of Print)

Kitching, J., Kašperová, E., and Collis, J. (2013b). The contradictory consequences of regulation: The influence of filing abbreviated accounts on UK small company performance. *International Small Business Journal*, 0266242613503973.

Korutaro, B. and Biekpe, N., 2013. Effect of business regulation on investment in emerging market economies. *Review of Development Finance,* **3**(1), pp. 41-50.

Koenker, R., and Bassett Jr, G. (1978). Regression quantiles. *Econometrica: journal of the Econometric Society*, 33-50.

Koenker, R. (2005). *Quantile regression* (No. 38). Cambridge university press.

Larçon, Jean-Paul, ed. 1998. Entrepreneurship and Economic Transition in Central Europe Norwell, MA and Dordrecht, The Netherlands: Kluwer Academic Publishing

May, P. J. (2005) "Compliance Motivations: Perspectives of Farmers, Homebuilders, and Marine Facilities," *Law and Policy* 27: 317–47.

Mayer-Schönberger V (2010) The law as stimulus: The role of law in fostering innovative entrepreneurship. *I/S: A Journal of Law and Policy for the Information Society* 6(2): 153–188.

Marlow, S. (1997). Self-employed women—new opportunities, old challenges? *Entrepreneurship and*

Regional Development, 9, 199–210.

McIntyre, Robert and Bruno Dallago, eds. 2003. *Small and Medium Enterprises in Transitional Economies* . Hampshire, UK: Palgrave

McManus, Patricia. 2001. ''Women's Participation in Self-Employment in Western

Industrialized Nations.'' *International Journal of Sociology* 31(2): 70 – 97.

Mehta, A., and K. Hawkins (1998) "Integrated Pollution Control and its Impact," *Journal of Environmental Law* 10(1): 61–77.

Minniti, M., P. Arenius and N. Langowitz, (2005), *Global Entrepreneurship Monitor Special Topic Report: Women and Entrepreneurship*. Center for Women's Leadership at Babson College, Babson

Park, MA. and Minniti, M. (2010). Female entrepreneurship and economic activity. *European Journal of Development Research*, *22*(3), 294-312.

Mugler, J.(2000). ''The Climate for Entrepreneurship in European Countries in Transition,'' in Donald D. Sexton. and Hans H. Landstrom, eds. The Blackwell Handbook of Entrepreneurship. pp. 150 – 75. Oxford: Blackwell Publishers Ltd

Muravyev, A., Talavera, O., and Schäfer, D. (2009). Entrepreneurs' gender and financial constraints: evidence from international data. *Journal of Comparative Economics*, *37*(2), 270-286.

Nicoletti G, Scarpetta N, (2003) Regulation, Productivity and Growth: OECD Evidence , WP 2944,

World Bank Policy Research (OECD, Paris)

North, C.D., 1991. Institutions. Journal of Economic Perspectives 5 (1), 97–112.

Pigou, C., 1938. The Economics of Welfare, 4th ed. Macmillan, London.

Pfirrmann, O., and Walter, G. H. (2002). *Small Firms and Entrepreneurship in Central and Eastern Europe*. Physica-Verlag.

Porter M, van der Linde C.(1005) 'Toward a new conception of the environment– competitiveness relationship'. *Journal of Economic Perspectives* 9(4):97– 118.

Sabarwal, S., Terrell, K., and Bardasi, E. (2009). How do female entrepreneurs perform? Evidence from three developing regions. *World Bank*.

Smallbone, D., Welter, F. and Ateljevic, J., (2013). 'Entrepreneurship in emerging market economies: Contemporary issues and perspectives'. *International Small Business Journal,* 0266242613511479

Smallbone, D. and Welter, F. (2001), 'The Role of Government in SME Development in Transition Countries'. *International Small Business Journal*, 19 (4), 63-77.

Stigler, G., (1971). The theory of economic regulation. Bell Journal of Economics and Management Science 2 (1), 3–22.

Svejnar, J. (1991). Microeconomic issues in the transition to a market economy. *The Journal of Economic Perspectives*, 123-138.

Svejnar, J. (2002). Transition economies: Performance and challenges. *Journal of Economic Perspectives*, 3-28.

Tkachev, A., and Kolvereid, L. (1999). Self-employment intentions among Russian students. *Entrepreneurship and Regional Development*, *11*(3), 269-280.

Verheul, I., Stel, A. V., and Thurik, R. (2006). Explaining female and male entrepreneurship at the country level. *Entrepreneurship and regional development*, *18*(2), 151-183.Welter, F., Smallbone, D., Aculai, E., Isakova, N., and Schakirova, N. (2003). Female entrepreneurship in post Soviet countries. *New perspectives on women entrepreneurs*, 243-69.

Welter, F (2011) 'Contextualizing entrepreneurship: Conceptual challenges and ways forward'. *Entrepreneurship Theory and Practice* 35(1): 165–184.

Welter, F and Smallbone, D (2011) 'Institutional perspectives on entrepreneurial behavior in challenging environments'. *Journal of Small Business Management* 49(1): 107–125.

Wennekers, S., Van Wennekers, A., Thurik, R., and Reynolds, P. (2005). Nascent entrepreneurship and the level of economic development. *Small business economics*, *24*(3), 293-309.

Zahra SA and Wright M (2011) 'Entrepreneurship's next act'. *Academy of Management Perspectives* 25(4): 67–83

Appendix

Table A1: Most serious obstacle affecting the operation of this establishment

	Male –owned firms		Female-owned firms	
	Freq.	**Percent**	**Freq.**	**Percent**
Tax rates	1060	17.31	775	19.5
Access to finance	997	16.28	602	14.8
Practices of competitors in the informal sector	712	11.63	485	11.92
Political instability	633	10.34	450	11.06
Inadequately educated workforce	626	10.22	475	11.68
Corruption	467	7.63	263	6.47
Electricity	333	5.44	193	4.74
Tax administration	237	3.87	180	4.42
Business licensing and permits	214	3.5	131	3.22
Customs and trade regulations	178	2.91	81	1.99
Labour regulations	172	2.81	126	3.1
Access to land	167	2.73	103	2.53
Crime, theft and disorder	132	2.16	87	2.14
Courts	102	1.67	70	1.72
Transport	93	1.52	47	1.16
Total	6123	100	4068	100

Table A2 : Summary Statistics[14]

Firm Size	**Number of f/t employees**	**Frequency**	**Percent**
Micro Firm	betw een 1 and 9	7845	32.51
Small Firm	betw een 10 and 49	9961	41.29
Medium Firm	betw een 50 and 249	6318	26.19
Total		**24,124**	**100**

Gender of Owner	**2005**	**2007**	**2009**
Male	4541	1179	5177
Female	1820	605	3439
Total	**6361**	**1784**	**8616**

Firm ownership	**Frequency**	**Percent**
Private Domestic	21248	88.25
Private Foreign	2719	11.4
Government / State	1699	7.15
Total	**24,063**	**100**

Gender of Owner	**Frequency**	**Percent**
Male	10,897	65.01
Female	5,864	34.99
Total	**16,761**	**100**

Industry Sector	**Frequency**	**Percent**
Retail	3,733	15.42
Wholesale	3,231	13.34
Food	2,963	12.24
Other services	2,607	10.77
Construction	2,348	9.7
Other manufacturing	1,456	6.01
Transport	1,351	5.58
Hotels and restaurants	1,203	4.97
Garments	931	3.84
Fabricate metal products	917	3.79
Machinery and equipment	702	2.9
Textiles	282	1.16
Non metallic mineral products	265	1.09
Chemicals	240	0.99
Plastics & rubber	207	0.85
IT	194	0.8
Basic metals	98	0.4
Electronics	89	0.37
Other	1398	5.79
Total	**24,215**	**100**

[14] Country sample sizes varied from 144 cases up to 1,783 with total number of firms in the sample 24, 215