Business regulation and red tape in the entrepreneurial economy

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Abstract

This paper discusses the interrelationship between business regulations and entrepreneurial activities. Most empirical studies find that business regulations have a negative effect on the amount of entrepreneurial activities in an economy. In addition, we argue that the regulatory quality and amount of business regulation may also be influenced by the amount of entrepreneurial activities in the society since policymakers and bureaucrats tend to respond to changing conditions in the society. In the empirical part of the paper, data for 23 OECD countries for the period 1972-2002 in order to elaborate on the interrelationship between entrepreneurship and the quality of business regulations. The empirical findings indicate that there is a positive relationship between entrepreneurship, and the quality of business regulations**.**

Keywords: entrepreneurship, red tape, business regulation

Introduction

High quality institutions[1] are fundamental for firms and individuals making good decisions. The decision to become an entrepreneur is no exception. One aspect, which is of interest for both incumbent firms and potential entrants, is regulations associated with starting and running a business. Many business regulations are necessary for securing a safe and well- functioning market. In other cases, the benefits of upholding these regulations are more questionable if the costs of complying with these regulations to the benefits are considered. What are the costs for the society associated with too extensive business regulation? The potential welfare loss in the society occurs at three levels. Firstly, the government has to bear costs associated with creating, upholding and controlling business regulations. Secondly, there are direct compliance costs for incumbent firms, which need to spend resources on, for example, administration. Djankov et. al (2002) try to measure and compare the official requirements in terms of time and cost spent for starting a business across 85 countries. For the case of Sweden 6 procedures, 13 days and a cost of $641 are required. Finally, there are indirect costs associated with business regulation and red tape. Resources spent on complying with business regulations may have alternative and more efficient uses. Alternative and more efficient uses may, for example, investments or innovative activities. Among the indirect costs, we also have to consider that extensive business regulations may inhibit potential entrepreneurs from starting their business. This indirect cost associated with business regulation and in particular, the effect on entrepreneurship is the focus in this paper.

During recent decades developed countries has undergone a fundamental shift from what Audretsch and Thurik (2000) denote the "managed economy" towards the "entrepreneurial economy". In brief,large firms creating the bulk of new job opportunities characterized the managed economy. Large-scale production and wage competition characterized the competitive environment. On contrary, the development towards an entrepreneurial economy, spurred by innovation in information technology, is characterized by knowledge- intensive competition. In entrepreneurial economy, it is claimed that the bulk of new jobs are created in small and new businesses. These changes have not gone unnoticed by policymakers. Alongside this development, we can observe a policy shift away from business regulation and antitrust policies towards policies aiming at stimulation the diffusion and commercialization of new knowledge (Audretsch and Thurik, 2000). Furthermore, there has been increased interest in the importance of the conditions for running and starting a business. In particular, the administrative burden, sometimes referred to as "red tape", associated with running a business has received increasing interest. In the OECD the administrative burden for businesses are estimated to correspond to on average three per cent of total GDP (OECD 2001). Hence, lowering these costs has a potentially substantial effect on growth. In the European Union, the aim is to decrease the administrative burden by 25 per cent by 2012.

This paper aims to provide an overview of the empirical literature on the effect of business regulation

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and red tape on entrepreneurial activities. Furthermore, it is argued that policymakers are sensitive to responding to the transformation from the managed to the entrepreneurial economy. Hence, they react to the emerging entrepreneurial economy by improving the conditions for entrepreneurship by means of changing the regulatory environment and trying to decrease business regulation and cut red tape.

The paper is organised as follows: Section two provides an attempt to define what we mean with business regulation and red tape. Furthermore, theoretical arguments for a interrelationship between the level of business regulation and entrepreneurial activities are put forward. Section three provides a summary of previous empirical findings on business regulation and entrepreneurial activities. Section four provides a description of the data used in the empirical analysis. In section five, the empirical results are presented. Finally, conclusions and suggestions for future research are presented.

2. Business regulation and red tape and the interrelation with entrepreneurship policy

Regulation is a concept that is imprecisely defined in the literature. Hence, some authors deliberately prefer to use a quite vague definition of regulations (see e.g. Hägg, 1998). Nevertheless, we try to at least provide an idea about what we mean with regulation and distinguish it from red tape. A frequently used definition of regulation is the definition formulated by OECD (1997). They define regulation by:

"regulation refers to the diverse set of instruments that governments use to impose requirements on enterprises and citizens. Regulations includes laws, formal and informal orders and subordinate rules issued by all levels of government, and rules issued by non- governmental or self-regulatory bodies to which government have delegated regulatory power"

"Red tape" refers more explicitly to the administrative work associated with regulations. The notion of red tape originates from the 19th century when official documents associated with regulations issued by the British government were tied together with red tape. What is then the difference between regulation and red tape? Pandey and Scott (2002) provide an overview of how red tape is defined by different authors. Some attributes, which are usually associated with red tape, are: extensive and meaningless paper work, unnecessary delays is administrative processes, and inefficiency. Bozeman (2000) proposes the following definition of red tape:

"A rule that remains in force and entails a compliance burden for the organization but makes no contribution to achieving the rule's functional object."(Bozeman, 2000 p.82)

Hence, red tape by definition is regarded as something bad, which does not contribute to the fulfillment of the regulation. However, as noted by Kaufman (1977) it is important to remember that something that is regarded as red tape for one individual, firm or organization might not be regarded as red tape for others. Regarding red tape Bozeman (2000) argues that there are two main reasons for why they occur. Firstly, they can be "red tape" already from the beginning i.e. they are created by policymakers or in processes that fail to have an overall perspective. Hence, they are badly adjusted to the society already from the beginning. Secondly, regulations turn into red tape when they are worn out with time, for instance, when new regulations are added to already existing regulations. Hence, they might be incompatible with each other.

It is often assumed that there is a tendency of over regulation in the society (Helm, 2006). Why do regulations and in particular red tape occur? Economic theory provides us with a number of explanations. One reason for this assumption is that there are certain incentive structures in the society that tend to create too extensive regulation.

Public interest theory, which originates in the writings of Pigou (1938), explains how regulations can be motivated. The existence of natural monopolies, negative externalities or information asymmetries will result in market failures, which may be corrected by market interventions. Hence, regulations can improve the efficiency and welfare in a society.

In the entrepreneurial economy an explicit example would be to implement regulations that make sure that firms producing goods or services with unfavorable environmental or dangerous effects will not

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be started (Djankov et.al. 2002).

However, public interest theory came to be criticized since they in many cases turned out to be less   efficient   than   was   expected. Furthermore,   theoretical arguments were proposed which rendered new solutions to the existence of market failures. According to Coase (1960) negative externalities can be compensated by those who benefit from the externality. Hence, there is no need   of government regulation. However, this conclusion is conditional on property rights being well defined.

Special interest theory criticizes the public interest theory based on the observation that it does not consider the political process and interests (see e.g. Tullock, 1967; Stigler, 1971 and Peltzman (1976). According to Stigler (1971), incumbent firms have more incentives and more information than, for example, consumers. Hence, special interest groups have more incentives and more possibilities exercise pressure in order to try to decrease competition and increase profitability. According to the "tollbooth"   theory it can even be argued that some regulations emerge in order to benefit policymakers and bureaucrats (see e.g. De Soto, 1990; Shleifer and Vishny, 1998). In exchange of implementation of certain regulation policymakers expect to gain votes. Applying this strand of literature to regulatory reform regarding business regulations implies that we can expect a dynamic response to the change toward an entrepreneurial economy from policymakers and bureaucrats. Since each additional entrepreneur represent one vote the there might be political gains from improve the conditions for entrepreneurship. In summary, there is a complex interrelationship taking place in the regulatory process between the actions taken by rent-seeking entrepreneurs, vote seeking policy makers and bureaucrats (Lee, 1991). The empirical part of this paper will test if we can   find a positive relationship between the level of entrepreneurship and business regulation.

3. Red tape, regulation and entrepreneurial activities— a survey of previous studies
This section provides an overview of empirical studies on the relationship between regulation and entrepreneurial activities. Table 1 provides an overview of the content and main results of the empirical studies reviewed in this section.

Van Stel, Storey and Thurik (2006) use data from the World Bank and study the relationship between business regulations and nascent and young entrepreneurship using the Global Entrepreneurship Monitor (GEM) indices as measures of entrepreneurship. They find that the minimum amount of capital required starting a business and labor market regulations tend to decrease entrepreneurship. Nevertheless, the administrative costs in terms of time, money or number of procedures required do not affect the number of nascent entrepreneurs and recently started firms in the economy. Hence, van Stel, Storey and Thurik (2006) are not convinced that policy measures aimed at decreeing entry barriers are important for stimulating entrepreneurship.   In line with Baumol (1990), they argue that entry regulations primarily influence the distribution between entrepreneurship in the informal and formal sector and not the level of entrepreneurial activity

In a cross-country-study covering 29 countries Bjørnskov and Foss (2008) use the GEM- index as a measure of entrepreneurship and study how institutional conditions influence entrepreneurship. The

Economic Freedom of the World Index (EFW)^{2} is used to measure the institutional conditions in terms of, for example, institutional quality, access to sound money, the conditions for international trade, and the quality of regulation of credit, labour and business.   The measure of quality regulatory includes, for example, the amount of time spent on bureaucracy and the ease of starting a business. According to the findings by Bjørnskov and Foss (2008) there is no significant correlation between regulatory quality and

entrepreneurship. However, in a panel data study, Nyström (2008), finds a positive relationship between regulatory quality as defined by the EFW index and entrepreneurship, using self-employment as a measure of entrepreneurship. Alfaro and Charlton (2006) find in a industry-level study covering 98 countries that the higher number of days required to start a new business tend to decrease new firm formation.   Furthermore, they find that worse bureaucratic quality tends to decrease new firm formation.

Klapper, Laeven and Rajan (2006) focus on the industries that have many new firms entering the market. They find that entry regulations in terms of time, cost and number of procedures associated with starting a new firm, are associated with a decrease in the number of start-ups,in particular small start-

ups. Consequently, entry regulation cause new firms to be larger. Scarpetta et al. (2002) distinguish between product- and labour market regulations and find that both are negatively related to the number of new small and medium sized- companies. A more detailed analysis shows that in particular entry regulations are negatively correlated to new firm formation.   Furthermore, Desai, Gompers and Lerner (2003) show that entry regulation in terms of the number of procedures required to start a new firm is negatively correlated to new firm formation. Looking specifically at industries with fast technological change and growing global demand, Ciccone and Papaioannou (2006) show that the longer a firm has to spend starting a business the lower the number of firm starting in these industries. All studies mentioned above rely on register data at different levels of aggregation. In addition, this issue can be studied directly by asking the companies how different types of business regulation influence them. Capelleras et al (2005) conduct interviews in about 400 firms in Great Britain (characterized as a country with lower level of regulation) and Spain (comparatively higher level of regulation). According to this study, the level of regulation does not influence new firm formation or growth of incumbent firms. In summary, while the majority of the studies reviewed here find a negative relationship between the amount of business regulation and different measures of entrepreneurial activities some research finds a positive relationship or no relationship at all.

Table 1: Summary of empirical studies on the role of red tape and regulation on entrepreneurship.

Author(s)	Type of study and coverage	Measures and sources	Results
Van Stel,, Storey and Thurik (2006)	39 countries	Measure of entrepreneurship from GEM. Measure of administrative cost from	The administrative costs associated with starting a new firm do not influence the number of nascent and newly started firms.
Bjornskov and Foss (2008)	Cross-country study 29 countries	Measure of Entrepreneurship from GEM Measure of regulation of credit, business and labor from EFW	Regulation of credit, business and labor do not influence entrepreneurship
Nyström (2008)	Panel data for 23 OECD countries 1972-2002	Measure of self-employment from COMPENDIA Measure of regulation of credit, business and labor from EFW	Lower quality of regulation of credit, business and labor implies lower level of self-employment.
Alfaro and Charlton (2006)	98 countries at the industry level	New firm formation from Dun and Bradstreet The number of days needed to start a new business from the World Bank. Measure of quality of bureaucracy from ICRG[3] .	The number of days needed to start a business decreases the number of new firms. [4] Low bureaucratic quality decreases the number of new firms.

[3] International Country Risk Guide

[4] It should be noted that this conclusion refers to statistically insignificant results.

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Klapper, Laeven and Rajan, (2006)	Micro-level (firm level) study covering 3 million firms from 21 countries	New firm formation from the Amadeus database. Measure of time, cost and number of procedures associated with starting a new firm from Djankov et. al. (2002)	Entry regulations decrease the new firms formation and growth in incumbent firms
Desai, Gompers and Lerner (2003)	Micro-level (firm level) study covering 400 000 firms from 33	New firm formation from the Amadeus database. Measure of procedures associated with starting a new firm from Djankov et. al. (2002)	Entry regulations decrease new firm formation
Scarpetta et al (2002)	Firms from 9 OECD countries	New firm formation from OECD. Measures of product and labor market regulations from OECD.	Product and labor market regulations decrease the number of small and medium-sized firms.
Ciccone and Papaioannou (2006)	Industry level study for 45 countries	Change in number of firms from UNIDO[5] Time associated with starting a new business from Djankov et al. (2002)	Longer time to start a new firm decrease the number of firms in industries with fast technological change and expanding global demand.
Cappelleras et al. 2005	Comparative study of two countries (Spain and Great Britain)	Interviews with about 400 companies.	The different levels of regulation in the two countries do not influence the number of new firms and

[5] United Nations Industrial Development association

[6] See Wennekers and Thurik (1999) for an extensive discussion on definition of entrepreneurship and the self- employment proxy.

4. Data and method

The empirical part of this paper will use data on self-employment from the COMPENDIA database and a measure of the quality of regulation obtained from The Economic freedom of the world index (EFW). These measures are described below.

Self-employment rate from the COMPENDIA database

Entrepreneurship is a multidimensional concept, which makes it particularly difficult to measure. Self-employment rates, new firm formation or entrepreneurship indices from the Global Entrepreneurship Monitor (GEM) are frequently used measures in the empirical literature. In this paper, we use self-employment as a measure of entrepreneurship. It should be emphasized that this is not the ideal measure. This measure does cover the aspect that deciding to be self-employed involves risk-taking. However, self-employment is a static measure compared to, for example, the new firm formation (Wennekers et al. 2002). Furthermore, it should be acknowledged that self-employment is a "natural" choice in many occupations such as, for example agriculture and hence reflect the prevailing industrial structure in a country.[6] Nevertheless, self-employment can be considered to be a well- established proxy for entrepreneurial activity (see e.g., Blau 1987; Storey 1991; van Stel 2005). For our purposes, the main advantage of the self-employment measure is that this measure is available for many countries over a long period.

The self-employment rates in the empirical analysis are harmonized self-employment rates for OECD countries obtained from the COMPENDIA database.[7] The reason for using harmonized self-employment rates is that non-harmonized OECD statistics on self- employment are not comparable across countries. This is due to that the inclusion of owners/managers of incorporated businesses and how to treat unpaid family workers in the statistics is not consistent across countries. The harmonized COMPENDIA database includes owners/managers of both unincorporated and incorporated businesses, but excludes unpaid family workers and those that have self-employment as a secondary activity. (van Stel 2005). Furthermore, the COMPENDIA database distinguishes between total self-employment rates and self-employment rates excluding agricultural sectors. The inclusion of the agricultural sector may be highly influential for self-employment rates in some countries. Therefore, we perform the analysis with total self-employment rates, as well as with self-employment rates excluding the agricultural sector. The self-employment rates in COMPENDIA are reported biennial and covers the period 1972 to 2002. Further details on the COMPENDIA dataset are available in van Stel (2005).

Measure of business regulation
As our measure of the quality of regulation we use one of the sub indices published in the economic freedom of the world index (EFW), compiled by the Fraser Institute. This index consists of five main components: size of government, legal structure and security of property rights, access to sound money, freedom to trade internationally and regulation of credit, labor and business. It is the fifth subcomponent of this index we are focusing on in this study. It should be emphasized that there are other potential measures of regulatory quality available. (e.g. indices from the

International Country Risk Guide(ICRG) or World Bank "doing business" , However, the EFW is regarded as the most ambitious index in terms of coverage. It includes data from as far back as 1970 and includes 123 countries. During 1970-2000, the index was published every fifth year but has been published annually since 2000. Hence, the EFW is measure of regulatory quality was interpolated in order to match the self-employment rates. For further information about this index, see Gwartney, Lawson and Easterly (2006).

The measure of regulatory quality ranges from zero to ten. Zero corresponds to low regulatory quality and ten corresponds to the best possible regulatory quality. It should be mentioned that the index has additional subcomponents, but these components are not complete for several countries. Furthermore, they were not available during the first years these data were published. Hence, a further decomposition of the measure of regulatory quality would considerably decrease the number of observations. Appendix A provides information about the subcomponents of the index.

Our main hypothesis is that the level of entrepreneurial activity will be related to the regulatory quality. Additionally we expect that the level of economic development may affect the regulatory quality. We control for this by including a GDP per capita measure. The GDP per capita measure comes from the COMPENDIA database.[8] In summary, the dataset is a panel dataset including 23 countries and 16 biennial observations.

Table 2 present the descriptive statistics for all variables in the empirical analysis. If the explanatory variables are correlated with each other, the inclusion of the variables may cause problems with multicollinearity. However, in this case the correlation between the explanatory do not indicate that we should expect any severe problems with multicollinearity. A correlation table is reported in Appendix B. Furthermore, it should be mentioned that endogeneity obviously could be an issue in our model. An alternative approach would be to use IV methods. However, such as specification is clearly dependent on finding good instrumental variables. In the absence of suitable instruments[9] , we choose to be careful in interpreting the causal relationship in our analysis.

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[8] The GDP measure was adjusted using purchasing power parity as of 1990. Furthermore, the GDP per capita variable is used in logarithmic. form. This transformation will reduce problems with non-normality.

[9] The author is very grateful for suggestions on suitable instruments.

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Table 2. Descriptive statistics

	Mean	Std. Dev.	Minimum	Maximum	N
Total self-employment	0.147	0.059	0.063	0.384	362
Self-employment excluding agriculture	0.104	0.034	0.054	0.202	362
GDP per capita	9.584	0.318	8.583	10.306	362
Regulation	6.086	0.865	4.308	8.582	362

Figure 1 illustrates average self- employment rates for the 23 OECD together with the measure of regulation. The figure shows an apparent improvement in regulatory conditions since the 1990s. The figure also illustrates the structural change process that these countries have undergone during this period.   If we use self-employment rates as a measure of entrepreneurship, we can see no trace of the transformation from the managed to the entrepreneurial economy. In fact, self-employment rates have decreased.If we instead consider self-employment rates excluding agriculture this transformation is more apparent.

Figure 1.   Regulation   of   credit   labour   and   business   and   self-employment rates   1972-2002.
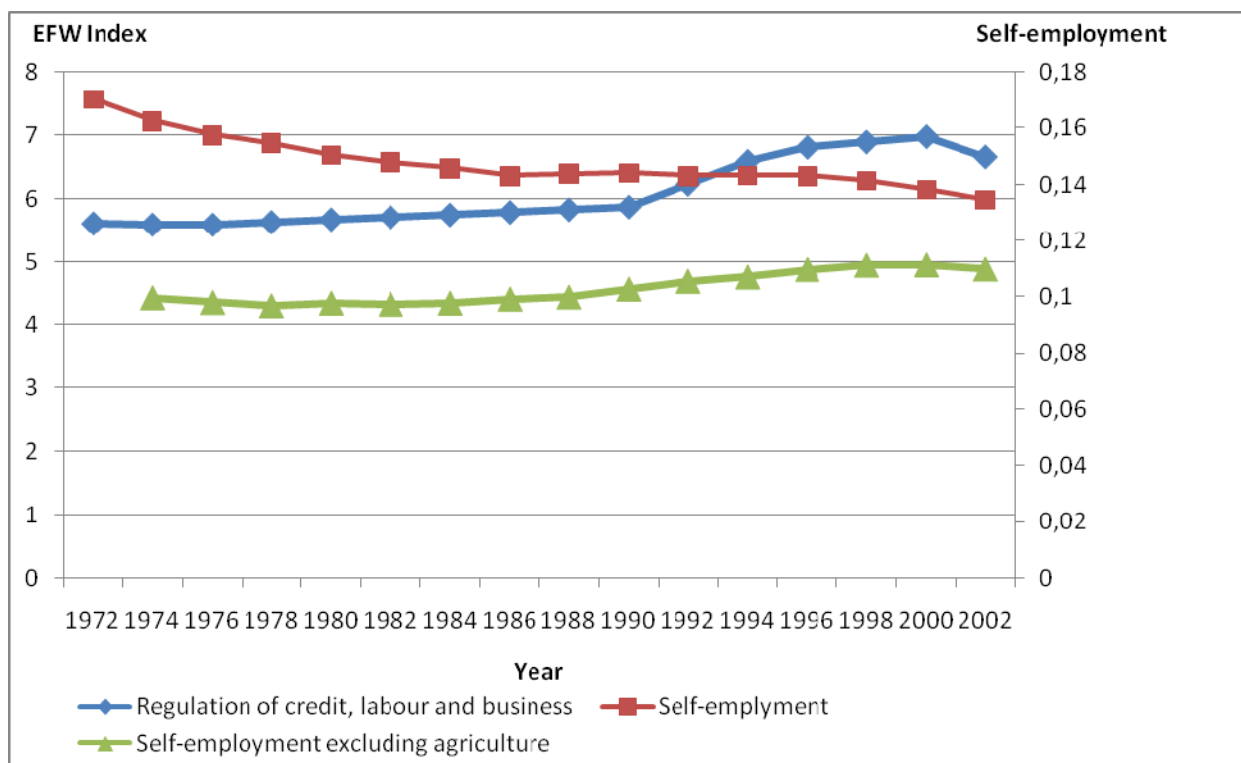
5. Empirical findings

The econometric model is specified as a fixed effect panel data model with the regulation variable as dependent variable and self-employment rates and GDP per capita as explanatory variables. Three alternative specifications were estimated; no country or year effect, country effects and including both country and year effects. Our focus in the analysis is the third speciation i.e. the specification including both time and country specific effects. However, we choose to report all specifications since they provide indications regarding the robustness of the results. We use either total self-employment rates or self-employment rates excluding agriculture in our regressions. The results are presented in tables 3 and 4. The results presented in table 3 refer to the case when self-employment rates excluding agriculture is used as

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explanatory variable. All specifications show a statistically significant positive relationship between self-employment and our measure of regulatory quality.

Table 3: Regression results self-employment rate excluding agriculture as explanatory ariable

	(i)	(ii)	(iii)
Constant	3.78* (0.22)	2.25* (0.23)	-96.45 (9.89)
GDP per capita	$1.35*10^{-4}$* $(8.00*10^{-6})$	$1.15*10^{-4}$* $(9.56*10^{-6})$	$-2.70*10^{-5}$** $(1.57*10^{-5})$
Self-employment (excluding agriculture)	2.54** (1.30)	20.11* (1.84)	13.20* (1,76)
Country effects	No	Yes	Yes
Year effects	No	No	Yes
R^2	0.42	0.60	0.67
Obs	362	362	362

*significant at the 5% level. ** significant at the 10% level. Robust standard errors in parenthesis.

Table 4 report the results when using total self-employment rates as explanatory variable. In this case, self-employment rates also are found to be positively related to regulatory quality for all three specifications. The level of economic development is found to positively related to regulatory quality. Comparing the results presented in tables, 3 and 4 indicate that the size of the effect might be larger if we use self-employment rates excluding agriculture as explanatory variable.

Table 4. Regression results total self-employment rates as explanatory variable

	(i)	(i)	(iii)
Constant	3.76* (0.25)	1.85* (0.34)	-130.93 (8.74)
GDP per capita	$1.40*10^{-4}$* $(1.01*10^{-5})$	$1.71*10^{-4}$* $(1.13*10^{-5})$	$-2.95*10^{-5}$* $(1.14*10^{-5})$
Self-employment (total)	1.34** (0.82)	11.05* (1.62)	10.90* (1.11)
Country effects	No	Yes	Yes
Year effects	No	No	Yes
R^2	0.42	0.53	0.71

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Obs	362	362	362

*significant at the 5% level. ** significant at the 10% level. Robust standard errors in parenthesis.

6. Conclusions and suggestions for future research

This paper has discussed to interrelationship between business regulations and entrepreneurial activities. We conclude that most empirical studies find that a better business regulation and red tape negative increase entrepreneurial activities. We argue that the regulatory quality and amount of business regulation may also be related to the extent of entrepreneurial activities in the society i.e. that there are an interrelationship between the two of them. Hence, policymakers have responded to the transformation from the managed to the entrepreneurial economy by adjusting regulatory conditions for starting and running a business.

In the empirical part of the paper, we test whether a positive relationship exists between the level of entrepreneurship and the level of business regulation. We use self-employment rates as a proxy for entrepreneurship and the subcomponent measuring quality if regulation of business from the Economic freedom of the world. (EFW). Our empirical findings support our hypothesis. Suggestions for future research include applying alternative and more dynamic measures of entrepreneurship such as the GEM index or new firm formation rates. Furthermore, alternative measures such as, for example, measures from the World Bank on the ease of starting and running a business can be used in order to check the robustness of our results.

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Appendix A. The subcomponents of the regulation of credit, labour, and

business subcomponents

Area 5: Regulation of Credit, Labor, and Business	
	Credit market regulations
	Ownership of banks
	Foreign bank competition
	Private sector credit
	Interest rate controls/negative real interest rates
	Labour market regulations
	Minimum wage
	Hiring and firing regulations
	Centralized collective bargaining
	Mandated cost of hiring
	Mandated cost of worker dismissal
	Conscription
	Business Regulations
	Price controls
	Administrative requirements
	Bureaucracy costs
	Starting a business
	Extra payments/bribes

	Licensing restrictions
	Cost of tax compliance

Source: Gwartney, Lawson and Easterly (2006)

Appendix B. Correlation table

	Total self-employment	Self-employment excluding agriculture	GDP per capita	Regulation
Total self-employment	1			
Self-employment excluding agriculture	0.82	1		
GDP per capita	-0.66	-0.32	1	
Regulation	-0.37	-0.12	0.64	1

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