Administrative Simplification and Economic Growth: A Cross Country Empirical Study

Kevin Poel[1], Professor Dr. Wim Marneffe[1], Samantha Bielen[1], Bas van Aarle[1] & Professor Dr. Lode Vereeck[1]

[1] Faculty of Applied Economics, Hasselt University, Hasselt, Belgium

Corresponding author: Kevin Poel. Kevin Poel is researcher at Hasselt University, BE. Contact: Hasselt University, Faculty of Applied Economics, Martelarenlaan 42, BE-3500 Hasselt, Belgium. Tel: 32-11-268-757 E-mail: kevin.poel@uhasselt.be

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Abstract

Administrative burdens stemming from regulations are a worldwide cause of concern for policy-makers. Reducing administrative burdens has become an important policy objective in economic growth strategies for many governments. The European Commission set out a policy goal of reducing administrative burdens by 25% by 2012, although the literature provides limited evidence of its impact. Therefore, this paper examines the impact of administrative burdens on growth by using 6 business regulation variables for a panel of 182 countries. The results from the fixed effect regression analysis suggest that reducing administrative burdens in certain policy areas spurs economic growth. In particular, reducing burdens concerning start-ups and paying taxes enhances growth significantly. Furthermore, using a panel of 26 European countries, our results suggest that reducing the administrative burdens by 25% has a positive effect on growth of 1.62 % in the European Union.

Keywords: Administrative burdens, Business regulation, Economic growth, Lisbon Strategy, Regulatory reform

JEL: L510, K200

1. Introduction

In recent years, policy makers are focussing more and more on drafting better regulation. A crucial part in the better regulation strategy is reducing administrative burdens for businesses. Reducing administrative burdens has become a policy objective aimed at enhancing economic growth. For instance, the European Commission set out the goal to reduce the administrative burdens by 25% between 2007 and 2012 (European Commission [EC], 2007). Having accomplished this goal (EC, 2012), it remains however unclear if a reduction of administrative burdens leads to economic growth and how much growth it can generate. This paper provides empirical evidence on the relationship between reducing administrative burdens and stimulating economic growth. This section gives a critical analysis of the existing literature on the impact of business regulation, and more specifically administrative burdens, on economic growth. Section 2 describes our dataset on regulatory reform indicators. Empirical evidence on the effects of regulatory reform on economic growth for our panel of 182 countries is provided by estimations of the regression model presented in section 3. This section also shows the results of our analysis and analyses the potential impact on growth in European Union countries from the 25% reduction in administrative burdens envisaged in the Lisbon Strategy to reinvigorate growth in Europe. Finally, the fourth section presents the conclusions.

In recent years, the relationship between the quality and quantity of regulation –including the administrative burden of regulation- and growth has received considerable interest from policymakers and scholars. Regulation is needed to ensure a well-functioning society -in particular to address market failures- and therefore institutions (Note 1) are needed. Empirical studies have shown that institutional quality is an important determinant for long term economic growth (Cherchye, 2003; Glaeser, La Porta, Lopez-de-Silanes, & Shleifer, 2004; North, 1990). Recently, the quality of business regulations has been introduced as a proxy of institutional quality (Büttner, 2006; Djankov, McLiesh, & Ramalho, 2006; Jalilian, Kirkpatrick, & Parker, 2007; Nicoletti & Scarpetta, 2003). At the same time, bureaucracy and other forms of government regulation itself can become real obstacles to economic growth and efficiency.

Dawson (2007) finds that both aggregate measures of regulation as well as some specific areas of regulation are related to macroeconomic performance. The empirical results indicate that regulatory activity had a significantly

negative impact on aggregate economic performance in the U.S: a 0.27% decrease in capital productivity for each percentage increase in the aggregate measure of regulation was found. (Note 2) In 22 of the 32 areas of regulation examined in this paper, a statistically significant long-run impact on the economy was found.

Djankov *et al.* (2006) also found a positive correlation between less burdensome business regulation and economic growth: improving the quality of business regulations from the set of countries from the fourth quartile to the best quartile implies a 2.3% increase in annual economic growth (Note 3). The results of their research indicated that government regulation of businesses is an important determinant of economic growth.

Jalilian *et al.* (2007) looked into the relationship between regulatory quality and growth in developing countries. Their results confirmed that regulation and economic growth have a strong causal link: regulatory quality has a positive effect on the average growth of Gross Domestic Product [GDP] per capita of 1.5%. (Note 4)

Haidar (2012) examined the link between business regulatory reforms –rather than the level of regulation as the studies above- and economic growth. In his paper he found that each reform accounts for a 0.15% increase in the growth rate of GDP.

Thus, the existing literature can be summarized as follows: a positive correlation between the quality of regulation and economic growth can be expected. However, more detailed information on the relationship between regulation and economic growth could be useful for the further policy recommendations.

Regulation induces multiple costs and benefits that can influence economic performance directly or indirectly. Marneffe and Vereeck (2011) provide an overview of the different types of costs of regulation. They distinguish 16 direct and 2 indirect costs of regulation. One of these are the administrative burdens. Administrative burdens are a direct effect of regulation and stem from an information obligation imposed by the regulator. The costs businesses, citizens and institutions endure to comply with these information obligations are administrative burdens. Administrative burdens are the costs of regulation that are measured the most in European countries and are often an important element of the impact assessments drafted when creating new regulation. Over the past years, these impact assessments are including more and more cost estimations, yet more effects should be quantified (Cecot, Hahn, Renda, & Schrefler, 2008). Since administrative burdens are the most quantified and reported cost of regulation, we will examine its relation with growth in detail in this paper.

In order to structure our society, governments often impose information obligations on businesses and citizens. These information obligations stem from a policy goal (reducing a risk, granting subsidies, etc.) and are often necessary. Most administrative burdens caused by these information obligations serve a societal goal, however, it is important that these goals are met at minimal costs and thus that the administrative procedures imposed on businesses and citizens are efficient and necessary.

Few studies have examined the macro-economic effect of administrative burdens. In 2004, the Dutch Bureau for Economic Policy Analysis concluded that a decrease of administrative burdens by 25% would increase the level of the GDP by approximately 1.4% (Dutch Bureau for Economic Policy Analysis [CPB], 2004). The European Commission has taken over these findings to estimate the effect for the European Union [EU]: "When we apply the Dutch percentage on the EU, this would mean an increase in the level of the overall European GDP by € 150 billion" (Gelauff & Lejour, 2005). However, these results are dated and in addition the country-specific Dutch data are extrapolated to the entire EU.

Overall, the limited literature on this matter shows that a negative effect of higher administrative burdens and economic growth is to be expected. On the other hand, there are authors that are more critical towards the suspected relationship between administrative burdens and economic growth. Helm (2006) questions the quality of the public debate concerning regulatory reform and administrative burdens and its effect on economic growth. He states that although there are reasons to expect that regulation is in excess supply, there is little empirical evidence to link aggregate regulation with productivity and economic growth.

In general, we expect new regulation and administrative burdens to increase the regulatory costs of citizens and businesses. Yet, regulation could also lower regulatory costs, including administrative burdens. Regulation that cuts costs for businesses can create a competitive advantage. Therefore, one should look at the net effect of these two kinds of regulations in order to determine the influence of regulation on productivity and subsequently economic growth (Helm, 2006). This means that a higher level of administrative burdens or a large number of regulations does not necessarily lead to less economic growth. For instance, it can be expected that a country with a large amount of intellectual property regulations is more likely to generate positive economic results through innovation (Hall, 2002). Of course, the question remains how this intellectual property rights protection can be organised with the most

efficient level of administrative burden. Dawson (2007) also found that several areas of regulation had a positive effect on the economy (business credit, conservation of power, drugs and food, judicial administration, etc.). These positive effects, apart from the effect of the judicial administration -if they enforce property rights and contracts- could not be explained.

Thus, some authors (Dawson, 2007; Djankov et al., 2006; etc.) found proof of a significant relationship between regulation and economic growth: more burdensome regulation results in less economic growth. However, up until now no clear estimation as to which aspects (or effects) of regulation an impact exists. Furthermore, it should be noted that administrative burdens are only one part of the regulatory costs and that in some cases they can stimulate economic activity as stated in the example above.

2. Indicators of administrative burden and regulatory reform

2.1 Indicators of administrative burdens

In our analysis we use the business regulation variables from the Doing Business database of the World Bank as indicators for administrative burdens. (Note 5) This database consists of 10 indicator sets that refer to the regulatory quality of 183 countries. The information on each Doing Business topic is acquired through several questionnaire/survey instruments and is collected pro bono from experts (more than 10 200 lawyers, accountants, judges, engineers, architects, businesspeople and public officials from 189 different countries). (Note 6) We use a panel of 182 countries for the period 2004-2011 to estimate effects from administrative burdens on growth. We have selected data on three topics which are relevant for our analysis: starting a business, dealing with construction permits and paying taxes. For each variable we use a time component –a proxy for the waiting costs associated with regulation- and the number of procedures/documents –a proxy for the costs related to the complexity of regulation. The more time a required to comply with a regulation and the larger the number of procedures, the higher the administrative burden experienced by businesses. (Note 7) Regulatory reform is measured by a change in the number of procedures or in the number of days needed to complete a procedure.

Table 1. Description of time and procedure variables included in the analysis

Topic	Variable	Description
Starting a business	Procedures required (P1) and time to start a business (T1).	The time is expressed in number of days.
Dealing with permits	Procedures required (P2) and time to get a permit (T2).	The time is expressed in number of days.
Paying taxes	Number of contacts with the administration (P3) and time per year on tax payments (T3).	The time is expressed in number of days.

Table 1 gives an overview of all the variables that are explained further in this section (World Bank, 2012c).

2.1.1 Starting a business

We use the amount of procedures legally required to start a business and the time necessary to complete them to estimate the administrative burdens of starting a business. Only procedures that are required for all businesses are counted and both pre- and post-incorporation procedures are recorded. The time to complete the procedures is counted in calendar days and captures the median duration that incorporation lawyers indicate is necessary in practice to complete a procedure with minimum follow-up with government agencies and no extra payments. The assumption is that each procedure takes at least one day and they can take place simultaneously but cannot start on the same day.

2.1.2 Dealing with construction permits

We use the amount of procedures officially required to get a permit and the time to complete them to estimate the administrative burdens of dealing with permits. All procedures required for a business in the construction industry to

build a warehouse are recorded: submitting all project-specific documents to the authorities, obtaining all necessary clearances, licenses, permits, etc. Also procedures for obtaining water, sewerage and a fixed landline are recorded. The time is counted in calendar days. The measure captures the median duration that local experts indicate is necessary to complete a procedure in practice. The assumption is that each procedure takes at least one day and they can take place simultaneously but cannot start on the same day.

2.1.3 Paying taxes

We use the total number of tax payments by businesses per year and the time to complete these payments. The tax payments are the total number of tax payments by businesses, including electronic filing. The tax is counted as paid once a year, even if payments are more frequent. This information comes from the World Bank WDI Database (World Bank, 2012d). The time is counted in calendar days. The indicator measures the time taken to prepare, file and pay three major types of taxes and contributions: corporate income tax, value added or sales tax and labour taxes.

2.2 Regulatory reform

Our definition of regulatory reform is slightly different from the definition of Haidar (2012). Earlier studies on the link between growth and regulation (Djankov et al., 2006) use the level of regulation as an explanatory variable in otherwise conventional growth regressions. We agree with Haidar that it seems more logical/useful to include the change in regulation as a growth determinant. In his study on the impact of regulatory reform on growth, Haidar also uses the Doing Business dataset and defines regulatory reforms as measures that reduce the number of procedures or the number of days to complete the full procedure. A dummy indicator is then constructed to indicate whether a regulatory reform occurred or not. According to this definition, observations where the number of procedures or the number of days increases are not considered as reforms. This implicitly assumes that regulatory reform can only take the form of less procedures and less time to complete procedures. Consequently, it ignores other cases where regulatory reform would entail more procedures and more time and cases were earlier reforms e.g. are reversed. Since the number of cases where regulatory reform would take the form of more procedures and more time is not negligible in the sample, we consider that the approach by Haidar may lead to an unwanted upward bias in the estimated impact of regulatory reform (with effect on administrative burdens) on growth. Therefore, we decided to use our - less strict- definition and also take into account reforms that result in more procedures and more time.

Figure 1 displays the regulatory variables for the 1456 observations (182 countries over 8 years). It shows, for each of the regulatory variables (with regard to administrative burdens), the number of reforms which the number of procedures and number of days increases or decreases over time. In case of no change in the regulatory variables, a zero value is shown and missing values appear in case no line is displayed.

Furthermore, we do not use the additional transformation into a dummy variable as in Haidar (2012) as this implies loosing useful information about the reform intensity and the possibility to interpret the coefficients in terms of marginal effects of reducing the number of procedures by one and reducing the number of days to complete the procedure by one day. Regulatory reforms in the form of changes in procedures and waiting times are by no means rare events, especially small reforms occur in practically every country included in the sample of 182 countries. Also regulatory changes that imply an increase in the number of procedures or an increase in waiting time are far from seldom. Excluding them from the analysis as done by Haidar, reduces the total number of observations significantly.

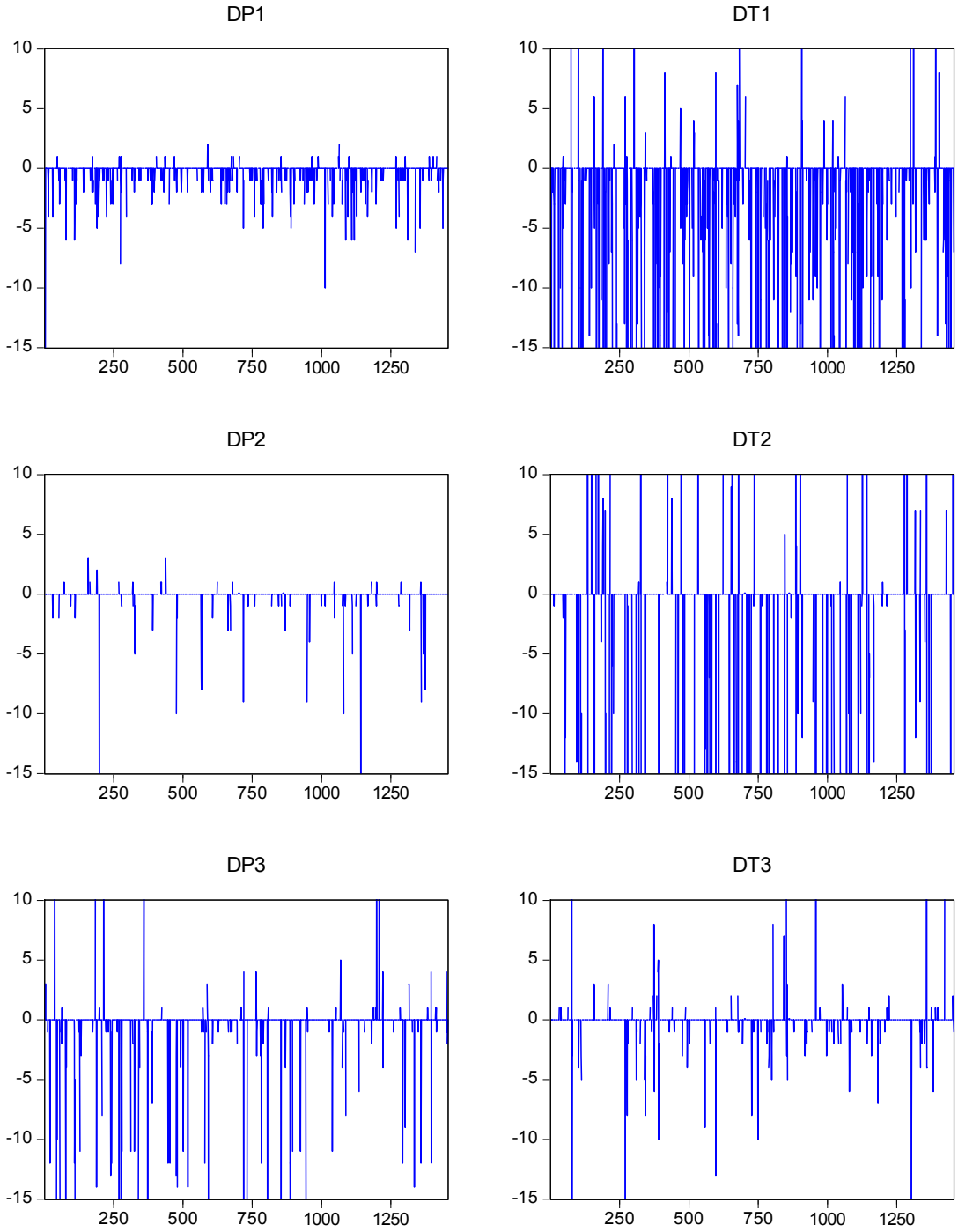

Figure 1. The occurrence of regulatory reforms (Note 8)

Table 2. Correlations between the different regulatory reform indicators

Sample: 2004 - 2011						
Included observations: 1456						
Pairwise samples (pairwise missing deletion)						
Correlation						
Probability	DP1	DP2	DP3	DT1	DT2	DT3
DP1	1.00					

DP2	0.12	1.00				
	(0.00) 882 obs	-----				
DP3	0.06	0.00	1.00			
	(0.06) 1047 obs	(0.95) 882 obs	-----			
DT1	0.44	0.04	0.06	1.00		
	(0.00) 1197 obs	(0.21) 882 obs	(0.05) 1047 obs	-----		
DT2	0.13	0.22	0.02	0.10	1.00	
	(0.00) 882 obs	(0.00) 882 obs	(0.47) 882 obs	(0.00) 882 obs	-----	
DT3	0.01	0.03	0.00	0.05	0.05	1.00
	(0.85) 891 obs	(0.37) 882 obs	(0.90) 890 obs	(0.10) 891 obs	(0.15) 882 obs	-----

Table 2 shows the correlations between the different regulatory reform indicators outlined above. It indicates that most correlations are of limited size, therefore including more than one reform indicator in regression models is possible.

3. Results

To analyse the impact from regulatory reform we used the following empirical regression model:

$$\Delta(\text{real GDP}) = \text{constant} + \delta \text{ regulatory reform variables} + \beta \text{ initial real GDP} + \gamma \text{ control variables} + \varepsilon \quad (1)$$

The regressand (economic growth) is measured by the first difference of the log of real GDP per capita. The control variables included in the regressions follow the standard theoretical and empirical growth literature: initial level of real GDP per capita (INGDPC), investment (INV), government consumption (GOV), openness to trade (OPEN), education (EDU) and broad money (M2). (E.g. Barro, 1996; Mankiw Romer, & Weil, 1992; Sala-i-Martin, Doppelhofer, & Miller, 2004). All variables were collected for the sample period 2004-2011 from the World Development Indicators database (World Bank, 2012a): economic growth; first difference of GDP per capita (constant prices, local currency), initial real GDP per capita investment; gross fixed capital formation (% of GDP), government consumption; government final consumption expenditure (% of GDP), openness to trade; merchandise trade (% of GDP), education; school enrollment, primary (% gross), broad money (M2); the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government. The model is estimated in multiple forms to address a number of statistical issues and also provide an in depth impression about the robustness of results.

3.1 Regression analysis

Table 3 summarizes the results from estimating the OLS-model for our panel of 182 countries for the 2004-2011 sample period.

Table 3. OLS panel estimates of the effects of regulatory reform on growth

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
D(P1)	0.0199		-0.106			-0.214	
	(0.162)		(0.119)			(0.166)	
D(P2)	0.00779			-0.254		-0.187	
	(0.110)			(0.185)		(0.183)	
D(P3)	-0.0298				0.000811	0.00728	
	(0.0321)				(0.0287)	(0.0289)	
D(PTOT)							-0.00707
							(0.0278)
D(T1)	-0.0297*		-0.0110			-0.0113	
	(0.0162)		(0.0137)			(0.0156)	
D(T2)	-0.00706			-0.00320		-0.000443	
	(0.00648)			(0.00863)		(0.00852)	
D(T3)	-0.123***				-0.166***	-0.173***	
	(0.0465)				(0.0416)	(0.0437)	
D(TTOT)							-0.0141**
							(0.00685)
INV		0.154***	0.149***	0.133***	0.131***	0.127***	0.129***
		(0.0188)	(0.0194)	(0.0219)	(0.0216)	(0.0217)	(0.0219)
GOV		-0.0884***	-0.0942***	-0.0683**	-0.0780***	-0.0724**	-0.0678**
		(0.0251)	(0.0255)	(0.0308)	(0.0298)	(0.0304)	(0.0308)
OPEN		0.00698*	0.00853**	0.00556	0.00792*	0.00628	0.00596
		(0.00371)	(0.00378)	(0.00448)	(0.00434)	(0.00444)	(0.00442)
M2Y		-0.000157	-0.00486	0.00119	0.000915	0.00183	0.00173
		(0.00255)	(0.00324)	(0.00361)	(0.00353)	(0.00357)	(0.00361)
D2009		-5.304***	-5.384***	-5.003***	-5.009***	-5.071***	-5.029***
		(0.393)	(0.393)	(0.393)	(0.387)	(0.390)	(0.392)
EDU		0.00132	-0.00212	0.00910	0.0101	0.00796	0.00689
		(0.0106)	(0.0110)	(0.0135)	(0.0130)	(0.0133)	(0.0134)
INGDPC		-0.568***	-0.450***	-0.715***	-0.691***	-0.716***	-0.717***
		(0.108)	(0.115)	(0.141)	(0.136)	(0.140)	(0.141)
CONSTANT	1.999***	5.185***	5.001***	5.363***	5.148***	5.489***	5.559***
	(0.167)	(-1.430)	(-1.502)	(-1.901)	(-1.821)	(-1.877)	(-1.897)
N	852	835	786	538	541	538	835

Standard errors in parentheses

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

Although the time span is rather limited, (small but significant) regulatory reforms did occur in most of the countries in our sample. The aim of this paper is to examine one time shocks in economic growth, caused by regulatory reforms. Reforms have an impact on current growth but after the reform is implemented there is no further permanent effect on growth. The one-time growth effect, however, implies a permanent level effect on GDP per

capita. In that sense regulatory reforms do have the potential to improve (or deteriorate) efficiency and social welfare in the economy. As we noted in the introduction, it is difficult to implement efficient regulation in theory and practice: regulation has the potential to increase efficiency by reducing market failures. At the same time in practice overregulation, bureaucracy and other forms of government failures are present.

Column (1) provides a baseline OLS regression that consists only of the business regulation variables (the difference in the amount of procedures (D(P)) and the difference in the amount of days (D(T)).)

Column (2) provides an OLS estimate of a basic regression model with essential control variables (investment and government consumption). It also contains additional control variables such as openness to trade, education, broad money and a crisis dummy for 2009 (D2009) (column (2)). These control variables mostly seem to have the effects on growth that have been documented in most of the growth literature, even if not all parameters (M2 and EDU) are statistically significant in our estimations. The crisis dummy appears to be very important to explain the decrease in economic growth in 2009.

Columns (3) to (7) added the variables for the difference in the amount of procedures (D(P)) and the difference in the amount of days (D(T)). There mostly appears no significant effect from the difference in amount of procedures and the difference in the amount of time. However, a reduction in the number of days necessary to pay taxes (D(T3)) does appear to have a significant effect on growth.

These results must be interpreted with caution since the pooled OLS estimation does not take into account unobserved heterogeneity. These characteristics may be correlated with the observed independent variables, which result in erroneous estimations.

In order to control for these stable and idiosyncratic differences across countries, the model was estimated using fixed effects. The Wald-test and Breusch-Pagan LM test confirm that both the fixed and random effects are jointly significant. Consequently, pooled OLS would indeed provide biased estimates. The Hausman test rejects the null hypothesis that the unobserved effect is uncorrelated with the explanatory variables, meaning the fixed effects model should be preferred.

Table 4 displays the country and year fixed effects estimations results. The results of the fixed effects estimations are quite similar to the pooled OLS estimation in Table 3. In contrast to the OLS results, two regulatory variables now become negatively significant. The change in the number of days to pay taxes (D(T3)) remains strongly significant. Furthermore, the change in the number of procedures to start a business (D(P1)) is a significant determinant of growth. The dummy for 2009 (D2009) is no longer included in the main model, since we account for year effects. The year effects for 2008 and 2009 show significant results and point out the economic crisis. Column (7) added an aggregated variable for the total amount of time and total amount of procedures of all the business regulation variables combined. The results show a significant negative effect of the aggregated total amount of time on growth.

Another estimation issue that needs to be addressed is potential endogeneity in our regulatory reform. It is quite possible that growth on its turn also affects the need for regulatory reform. To account for this endogeneity problem, we estimated the empirical model using TSLS. However, both the Wu-Hausman F and Durbin-Wu-Hausman endogeneity tests accept the null hypothesis that the regulation variables are exogenous. Consequently, the use of instrumental variables is unnecessary. The variables D(P1) and D(T1) seem to be the only endogenous regulation variables. Therefore, we performed a TSLS-regression on the model including these variables. We instrumented the regulatory reform indicators by three instruments: a legal origin dummy, a religion dummy and a dummy to indicate whether a country applies common or civil law jurisdiction. These dummies are previously applied by La Porta et al. (1997, 1998) and Djankov et al. (2006). Furthermore, the legal origin variable has been used more often in empirical models that analyze the effects of regulation. Although the Sargan statistic confirms that the first assumption of a valid instrument –no correlation with u- is satisfied, the underidentification test shows that the second assumption – a correlation with the endogenous regressors- is not. This means that these instruments are not suitable and the TSLS results are unreliable. Because our instrumental variables are all time-invariant, it is not possible to perform a TSLS-regression using fixed effects. However, as mentioned, the fixed effects themselves account for part of the endogeneity. To date, we have not found suitable time-invariant instrumental variables to include in the fixed effects models.

Table 4. Country and year fixed effect estimates of the effects of regulatory reform on growth

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
D(P1)	-0.125		-0.0267			-0.322**	
	(0.135)		(0.109)			(0.164)	
D(P2)	-0.109			-0.292		-0.221	
	(0.0915)			(0.192)		(0.189)	
D(P3)	0.0513*				0.0423	0.0389	
	(0.028)				(0.0295)	(0.0296)	
D(PTOT)							0.0252
							(0.0291)
D(T1)	-0.00427		0.00950			0.00729	
	(0.0136)		(0.0127)			(0.0155)	
D(T2)	0.000554			-0.00492		-0.00288	
	(0.00542)			(0.00850)		(0.00839)	
D(T3)	-0.0958***				-0.132***	-0.134***	
	(0.0369)				(0.0387)	(0.0392)	
D(TTOT)							-0.0119*
							(0.00673)
INV		0.288***	0.278***	0.271***	0.264***	0.254***	0.275***
		(0.0347)	(0.0345)	(0.0458)	(0.0452)	(0.0452)	(0.0456)
GOV		-0.145*	-0.313***	-0.251**	-0.264**	-0.259**	-0.255**
		(0.0773)	(0.0787)	(0.104)	(0.103)	(0.103)	(0.104)
OPEN		0.0177	0.0495**	0.0736***	0.0667**	0.0745***	0.0731***
		(0.0195)	(0.0198)	(0.0267)	(0.0262)	(0.0263)	(0.0267)
M2Y		-0.0108	-0.0360*	-0.0543*	-0.0561*	-0.0520*	-0.0506*
		(0.0154)	(0.0185)	(0.0291)	(0.0286)	(0.0287)	(0.0290)
EDU		0.0208	0.0112	0.0171	0.0174	0.0187	0.0157
		(0.0327)	(0.0326)	(0.0544)	(0.0537)	(0.0535)	(0.0544)
2006		0.0118	0.0916				
		(0.419)	(0.423)				
2007		-0.321	-0.484		-0.697		
		(0.424)	(0.431)		(2.507)		
2008	-1.491***	-2.155***	-2.273***	-1.857***	-2.473	-1.853***	-1.821***
	(0.360)	(0.438)	(0.444)	(0.407)	(2.502)	(0.402)	(0.408)
2009	-5.854***	-5.822***	-5.280***	-4.592***	-5.324**	-4.714***	-4.591***
	(0.361)	(0.499)	(0.518)	(0.529)	(2.541)	(0.523)	(0.528)
2010	-1.591***	-1.203**	-0.836	-0.247	-0.941	-0.371	-0.179
	(0.363)	(0.533)	(0.539)	(0.541)	(2.534)	(0.535)	(0.540)
2011	-1.627***	-1.765***	-1.646***	-0.999*	-1.518	-0.870	-0.850
	(0.365)	(0.575)	(0.576)	(0.571)	(2.535)	(0.565)	(0.570)
CONSTANT	4.249***	-3.050	0.307	-2.092	-0.376	-1.980	-2.268
	(0.260)	(3.652)	(3.635)	(6.172)	(6.605)	(6.076)	(6.172)
N	852	835	786	538	541	538	538

Standard errors in parentheses

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

3.2 Effects of Regulatory Reform: The EU Lisbon Strategy

In 2007 the European Commission launched an Action Programme (EC, 2007) to reduce the administrative burdens of existing regulation in the European Union. As part of this programme, the EC decided on a reduction target of 25%, to be achieved jointly by the EU and Member States by the end of 2012. This was a part of the European Commission's "Growth and Jobs" strategy, also known as the Lisbon Strategy that was relaunched in 2010 as Europe 2020. The Commission's goal of reducing administrative burdens is to make EU businesses more competitive. The EC stated:

"Unnecessary and disproportionate administrative burdens can have a real economic impact. They are also seen as an irritant and a distraction for business. The Programme will foster long term economic benefits, while delivering tangible, concrete results in the short to medium term." Further the EC stated: "Since businesses across the EU are obliged to spend considerable amounts on complying with information obligations it can be stated that administrative requirements are an important determinant of the business environment. These costs are presently estimated to amount to 3.5% of the Gross Domestic Product in the EU. By reducing unnecessary reporting, a company's employees could spend more time on core business activities which reduce production costs and allow additional investment and innovation activities to materialise, which in turn should improve productivity and overall competitiveness."

The estimations referred to by the EC originate from the Dutch CPB study (CPB, 2004) discussed above. This study has serious flaws and therefore the results have to be interpreted with the necessary precaution. In December 2012, the commission stated that it has reached the commitment to reduce the administrative burdens by 25% (EC, 2012). However, it remains unclear what the economic results will be from this reduction. To examine the effect of this reduction on growth, we simulate the impact of a decrease of 25% in all our regulation variables and compare this with predicted growth in case no such regulatory reform is implemented. (Note 9) During the sample period, the average amount of procedures equals 14.4 and the average amount of time 125.5 days for the EU countries (for the entire set of countries these numbers are 19.1 and 158.6 respectively). This reduction of administrative burden by the Lisbon Strategy would therefore amount to an average reduction in procedures with 3 to 4 and an average reduction in waiting time with 31 days.

The reduction in administrative burden/regulatory will have a one-time effect on the growth and thereby a permanent level of income. Using the estimated effects from regulatory reforms in Table 4 one can obtain estimates of the growth-effect what would have been the impact of such a measure. We assume that the Europe Lisbon strategy regulatory reform scenario would have impact in 2008. Table 5 shows the results. The estimated one-time growth effects lie between +0.71% (Denmark) and +3.59% (Czech Republic) in the OLS case. In the fixed effects case the effects are more or less comparable. The estimated minimum and maximum effects (based on the 95% confidence intervals of the parameter estimates) suggest however, that these estimated growth effects are surrounded by a considerable amount of uncertainty. In the fixed effects case, the estimations are more precise which of course also narrows the range of uncertainty of the estimated growth effects. The EU average effects amounts to 1.62%. Logically, the effects vary between countries since countries start at different levels of regulation and income. In general, these estimated one-time growth effects therefore amount to a permanent level increase in income per capita around 350 euro annually.

Table 5. Effects of regulatory reform experiment: a 25 percent decrease in regulatory burden, European Union countries

	OLS Estimates			Fixed Effects Estimates		
	Estimated Effect (%)	Minimum Effect (%)	Maximum Effect (%)	Estimated Effect (%)	Minimum Effect (%)	Maximum Effect (%)
Austria	1.37	-0.21	2.95	1.46	0.31	2.62
Belgium	1.03	-0.17	2.24	1.12	0.10	2.13
Bulgaria	2.66	0.55	4.76	2.56	0.96	4.16
Cyprus	1.05	-1.35	3.44	1.37	-0.55	3.29
Czech Republic	3.59	0.82	6.36	3.65	1.18	6.11
Denmark	0.71	0.01	1.41	0.73	0.22	1.23
Estonia	0.98	-0.17	2.13	1.15	0.15	2.15
Finland	1.39	0.08	2.71	1.28	0.36	2.20
France	1.02	-0.18	2.22	1.18	0.14	2.23
Germany	1.29	0.05	2.52	1.39	0.47	2.31
Greece	2.04	0.08	4.01	2.27	0.75	3.79
Hungary	2.32	0.10	4.53	2.43	0.52	4.33
Ireland	0.80	-0.14	1.74	0.87	0.14	1.60
Italy	1.64	-0.10	3.38	1.79	0.38	3.20
Latvia	2.01	0.00	4.02	2.16	0.37	3.96
Lithuania	1.44	-0.13	3.01	1.50	0.35	2.65
Luxembourg	1.02	-0.41	2.44	1.02	0.13	1.92
Netherlands	1.39	-0.10	2.89	1.57	0.26	2.87
Poland	2.72	-0.30	5.75	2.73	0.52	4.94
Portugal	1.82	-0.24	3.88	2.09	0.21	3.97
Romania	1.21	-1.14	3.56	0.56	-0.07	1.19
Slovakia	1.65	-0.32	3.62	1.63	0.34	2.92
Slovenia	1.76	-0.22	3.75	1.66	0.47	2.85
Spain	1.57	0.02	3.11	1.60	0.55	2.64
Sweden	0.75	-0.08	1.59	0.80	0.14	1.45
United Kingdom	1.33	-0.17	2.83	1.52	0.23	2.81
Europe	1.56	-0.14	3.26	1.62	0.33	2.90

4. Discussion

The existing literature on the effects of a reduction of administrative burden on economic growth mostly states that a negative relationship is to be expected. However, up until now no clear estimation is available as to which aspects (or effects) of regulation have an impact. Furthermore, some scholars are more critical towards the suspected relationship between administrative burdens and economic growth. It should be noted that administrative burdens are only one part of the regulatory costs and that in some cases they can even stimulate economic activity (e.g. property rights).

In our analysis we use the business regulation variables from the Doing Business database of the World Bank as indicators for administrative burdens. Our model is estimated in multiple forms to address a number of statistical issues and also provide an in depth impression about the robustness of results. However, there are still some limitations to our data and analysis:

- We have 1456 panel observations (182 countries over 8 years). The data collected from the World Bank (Doing Business and World Development Indicators) has some missing values, which result in an unbalanced panel and lower the amount of observations significantly. However, this is taken into account in our analysis and is not a major problem;

- Our dataset for 182 countries, spans only from 2004-2011, which is a rather short time period to reveal important long-term differences in growth rate. Although the time span is rather limited, (small but significant) regulatory reforms did occur in most of the countries in our sample. The aim of this paper was therefore to examine one time shocks in economic growth, caused by regulatory reforms.
- Both the Wu-Hausman F and Durbin-Wu-Hausman endogeneity tests accepted the null hypothesis that the regulation variables are exogenous. Consequently, the use of instrumental variables was unnecessary. However, the variables D(P1) and D(T1) seemed to be the only endogenous regulation variables. Therefore, we instrumented the regulatory reform indicators by three instruments: a legal origin dummy, a religion dummy and a dummy to indicate whether a country applies common or civil law jurisdiction. Because our instrumental variables were all time-invariant, it was not possible to perform a TSLS-regression using fixed effects. However, as mentioned, the fixed effects themselves account for part of the endogeneity. To date, we have not found suitable time-invariant instrumental variables to include in the fixed effects models.

In this paper, we examined the impact of reducing the number of days/procedures on economic growth. In future research, it would be interesting to investigate the optimal amount of days/procedures for the different investigated topics. Furthermore, we want to research the impact of reducing administrative burdens on unemployment and the amount of start-ups. This will give us a more detailed and complete picture about the macro economic effects of administrative burden reduction.

To conclude, this paper adds to the literature by estimating for the first time the correlation between administrative burdens and economic growth using panel data for 182 countries. It confirms the hypothesis there generally is a negative effect of higher administrative burdens on economic growth.

5. Conclusion

Previous studies have found a negative relationship between regulation and growth (Djankov 2006; Jalilian 2007; etc.). One of the aspects of regulation that policy makers are focussing on is reducing administrative burdens for businesses. Although never clearly measured, a negative correlation between administrative burdens and economic growth was also expected in existing literature (e.g. CPB, 2004). Yet, in theory it is possible that in some cases administrative burdens could lead to increased economic activity e.g. property rights regulation (Helm, 2006). This paper tries to provide further empirical insight into the precise relationship between reducing administrative burdens and economic growth.

The results of our regressions analysis for a panel of 182 countries suggest that reducing administrative burdens does seem to have an impact on growth: reducing the amount of procedures and time needed to complete them of two business regulation variables showed to have a significant positive effect on economic growth. The results from the fixed effects estimates prove to be more reliable than the OLS estimates. The regulation variables with the highest impact on growth are the time needed for paying taxes and the number of procedures to start a business. In future research, it would be interesting to investigate the optimal amount of days/procedures.

Furthermore, by using a panel of 26 countries in the European Union, the results of our regressions suggest that lowering administrative burdens by 25% (the reduction target as set out by the European Commission), has a positive effect on economic growth of 1.62%.

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Notes

Note 1. As set out in North (1990): "Institutions are the rules of the game as distinct from the players. These rules are meant to create the constraints and the space of actions for the players and thus to develop agents' behaviour."

Note 2. The measure of federal regulation in the U.S. is the number of pages in the Code of Federal Regulations.

Note 3. A quartile is a 25% interval. The fourth quartile consist the 25% countries with the worst quality of business regulation. The best quartile are the 25% countries with the highest quality of business regulation.

Note 4. As set out in Kauffman et al. (2005).

Note 5. World Bank. (2012b). World Bank Doing Business Data: Retrieved October 17, 2012, from http://www.doingbusiness.org/data.

Note 6. The number of contributors for a particular country and extra details can be found on the website of Doing Business. World Bank. (2012e). World Bank Doing Business Data: Retrieved April 03, 2014, from http://www.doingbusiness.org/contributors/doing-business

Note 7. In this paper we only look at the effect of regulatory reforms for businesses. The effects for citizens are outside the scope of this paper.

Note 8. Regulatory reforms as measured by the change in number of procedures (DP1, DP2, DP3) or number of days to complete procedures (DT1, DT2, DT3). See Table 1 for a description of these regulatory variables.

Note 9. We examine the effect of a 25% reduction in national regulation on economic growth. The 25% reduction target set by the European Commission also includes European regulation that is not included in the amount of regulation in a European country.