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On a comparative analysis of the impact of democracy on regulatory reform

Christian-Lambert Nguena * **

Abstract

This paper questions the effect of democracy on regulatory reforms by mainly checking whether the observed differences between the transition economies and the rest of the economies in terms of engaged reforms are related to the level of democracy. Our results, based primarily on the Oaxaca - Blinder decomposition approach, suggest that democracy is not the basis of these observed differences. This calls into question the importance of democracy when it comes to unleashing the potential reform of the economies concerned. Moreover, the estimation using the fixed-effect Poisson model and marginal effect analysis method was conclusive with the previous result. Evidence is therefore in favour of the fact that democratic political systems do not increase the probability of regulatory reforms. Indeed, during the study period, several regulatory reforms which have improved efficiency and growth were applied by weak democracies (i.e., Israel) and authoritarian regimes (i.e., China). A formal robustness check confirmed the validity of our estimation and highlighted some other determinants of reforms. Education and ethnic diversity positively affect reforms while inflation presents a negative impact. Investing in human capital improvement through education appear therefore to be important for the implementation of reforms; the diversity of ethnic presentation is also good for the same objective. This paper, which is part of the very young literature on the determinants of reforms, is original in the sense that for questions of reform, the democracy factor had not yet been investigated using the same approach.

JEL classification: P11, P16, P21, P26, K20, L51

Keywords: Democracy, Regulation reforms, Transition economies, Oaxaca-Blinder decomposition, Poisson model

1. Introduction

Institutional factors are increasingly presented as fundamental factors in the economic performance of countries (Rodrik, 1999, Acemoglu et al., 2001), even if others such as geography or climate are put forward by some (Sachs, 2003). Economic policies now take the place of intermediary variables, or “transmission channels” at best, but empirical work sometimes even rejects this role (Easterly and Levine, 2003). “Institutions” or “governance” are however very broad concepts mixing heterogeneous elements, sometimes even including economic policies, which does not shed light on the question of specific impacts.

The world has undergone a mutation and evolution in terms of heterogeneous democracy¹ both in space and time. As for the specific case of Africa, between 1885

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(Berlin conference) and 1990, it underwent significant changes². In the United States, the revolution of 1776 led to the establishment, until the beginning of the 19th century, of an original democracy³. The French Revolution (1789) concerned, in turn, the formation of a National Constituent Assembly, the vote on the Declaration of human rights and the adoption of the new Constitution establishing central suffrage. Finally, the English “revolution” of 1649 and 1688 with the signature of a law (the Bill of Rights)⁴. In the 1960s, regimes that present themselves as democracies but which are in reality dictatorships are set up in Latin America⁵.

This democratic renewal responds to the failures of autocratic regimes to achieve the goals of building national unity and economic development that they were thought better suited to achieve. If external shocks and variables linked to geography has been put forward to explain the deterioration of the economic conditions of the economies concerned, more voices have instead thought that the way of managing, has certainly been very determining (Sachs and Warner, 1997; Ndulu and O'Connell, 1999; Collier and Gunning, 1999). Poor governance in practice would thus be the main reason for the inability to formulate and implement regulatory reforms.

The empirical determinants of regulatory reforms remain an understudied field with more focus on the effects of democracy on reforms (Persson and Tabellini, 2006; Persson, 2009; Grosjean and Senik, 2011; Olper and Raimondi, 2013; Giuliano et al, 2013; Tresiman, 2014). Most of the work has focused on the issue of democracy and

¹ The term democracy refers to a political regime in which power is held collectively by the people and is exercised on the basis of a system of representation that emanates from the people; this definition is based on the role of electing leaders through elective competition by the people they are called to govern (Barro, 1999). Further, Schumpeter (1947) defined democracy as institutional arrangements for achieving political decisions in which individuals gain the power to decide through voting.

² During the 1960s, autocratic national leaders quickly took the place of colonial leaders; We had to wait for a second national leap to witness the reaffirmation of the populations' deep aspirations for more freedom and more democracy. Thus, the democratization movements which became widespread and crystallized especially at the beginning of the 1990s mark a rebirth of these countries.

³ The first amendments to the Constitution of 1787 guaranteed the separation of powers and public freedoms (religious, expression).

⁴ Text that prefigures modern democracy: the doctrine of popular sovereignty replaces that of divine right. This is the true birth of British parliamentarism.

⁵ This is the case in Nicaragua (where the Somoza family reigns) or Paraguay (Alfredo Stroessner). Freedoms are restricted, opposition prohibited, social policies limited. Chile, Uruguay, Costa Rica and Puerto Rico are then democratic exceptions. Chile, plagued by inflation and social hardship in the late 1960s, proved to be one of the few states that did not come under pressure from the army, which is powerful everywhere on the continent.

economic growth⁶. An in-depth review of empirical studies shows that two approaches have been used to examine the link between democracy and reform / economic growth. These are cross-sectional econometric studies on the one hand, and comparative-historical approaches on the other. These two types of work produce opposite results in several cases (Huber et al., 1993). Overall, the questions of whether the two processes are complementary, the impact of one on the other, the causality direction have been addressed in the literature. Going beyond, and in the view to contribute to the existing literature, the question of the importance of democracy in the implementation of regulatory reforms with a comparative approach based on the Oaxaca - Blinder decomposition technics can be legitimated.

Thus, this literature has limitations at least for the following two reasons: Firstly, it is more dedicated to the effects of democracy on macro regulatory reforms. Amin and Djankov (2014) are, to our knowledge, those who were interested in micro regulatory reforms to facilitate business for the first time. Secondly, and beyond the limit presented above, the empirical literature on the subject did not take into account the heterogeneity of their study sample; in fact, the specific characteristics of each region cannot only bias the results but also, cannot lead to specific recommendations. By focusing on a set of countries that have much in common like transition economies, we expect to make more useful generalizations about the impact of democracy on regulatory reforms. The present work can therefore claim to contribute to the literature by focusing on the impact of democracy on regulatory reforms and distinguishing itself from previous empirical studies which rather focus on the direct effects of democracy on reform without considering the heterogeneity of the sample.

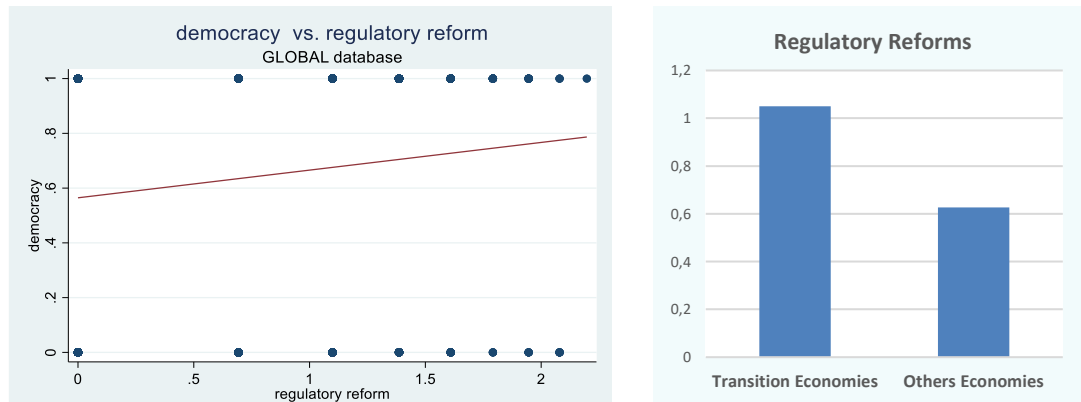
In addition, one limitation of the literature and especially the seminal empirical research of Amin and Djankov (2014) is that it is pure cross-country. However, it is well-known that cross-country regressions are much more prone to omitted variable

⁶ The question of the effect of democracy on economic growth has been a major concern for scholars since World War II. On the theoretical level, the existing work concludes with a positive or negative relation, or even not significant. Empirically, econometric research produces equally mixed results. Some studies show a positive and significant impact of democracy on growth (Rodrik and Wacziarg, 2005; Papaioannou and Siourounis, 2008; Persson and Tabellini, 2009), others deny such a relationship (Alesina and Rodrik, 1994; Helliwell, 1994; Borner and Weder, 1995; Barro, 1996 and 1997; Mining, 1998; Rodrik, 1999; Przeworski et al. 2000; Tavares and Wacziarg, 2001; Besley and Kudamatsu, 2008; De Haan. 2007). In their review of 84 studies between 1983 and 2005, Doucouliagos and Ulubasoglu (2008) conclude that democracy has no direct effect on economic growth.

bias problems than regressions based on change over time in the variables (Arellano & Bond, 1991). This is mainly why we move forward with panel data (Nguena et al., 2014, 2021).

We build on existing literature with a claim of contribution by considering the transition economies on one hand and the rest of the world on the other, but also by taking more attention to micro reforms like Amin and Djankov (2014) did in their work. Figure 1 below presents the global correlation between both phenomena along with the diversification of the number of regulatory reforms between these two blocks. It appears that even if there is a positive correlation, the number of reforms for transition economies is superior to the one of the other economies. Moreover, figure A1 in annex shows an overwhelmingly opposite performance of democracy between both blocks. Until today, this statistical difference did not attract attention as explained above, since research investigation on this subject did not take into account regional specificities in general.

Figure 1 : Level of regulatory reforms in transition economies and other economies



Source: Author's computation.

Thus, why is there a difference in the level of regulatory reforms between these two blocks? Moreover, given that there is a significant difference of democracy in these two blocks and considering the literature on the importance of democracy for the economic development dynamic, can we explain this difference in terms of reforms implementation with the country level of democracy? The objective of this paper is to analyze the impact of democracy on regulatory reforms with a comparative approach between transition economies and the rest of the world. It is also a way of checking

whether there is a convergence between this type of economy and the other economies in the world in terms of regulatory reforms.

The main idea is that democracy would have been an advantage for transition economies in the facilitation of the implementation of regulatory reforms. Indeed, transition economies have received particular attention, especially after the fall of the Berlin Wall (Roland, 2012, 2014). This attention has been at least on two levels: it was necessary that these economies, which were for the most part communist, become market economies (Tresiman, 2014). This implies that reforms had to be undertaken to support the expansion of the market on one hand; also, it was necessary to help these economies, especially from a geopolitical point of view, to come towards the reputed democratic Western bloc on the other hand. However, one of the major postulates is that democracy is pro-market (Senik and Grosjean, 2007, 2008, 2011; EBRD, 1999; Aslund, 2013). One should therefore hypothetically expect a positive effect of democratization on pro-market reforms (Tresiman, 2014).

Such an investigation has at least the following threefold interest: Firstly, it contributes to the literature filling the gap on the understanding of the determinants of regulatory reforms; secondly, the convocation in the literature for the first time on this types of problematics of the Oaxaca - Blinder decomposition technic which is widely used to identify and quantify the separate contributions of group differences in measurable characteristics and thirdly, it offer the possibility for developing countries to capitalize from transition economies experience depending to the results of the analysis.

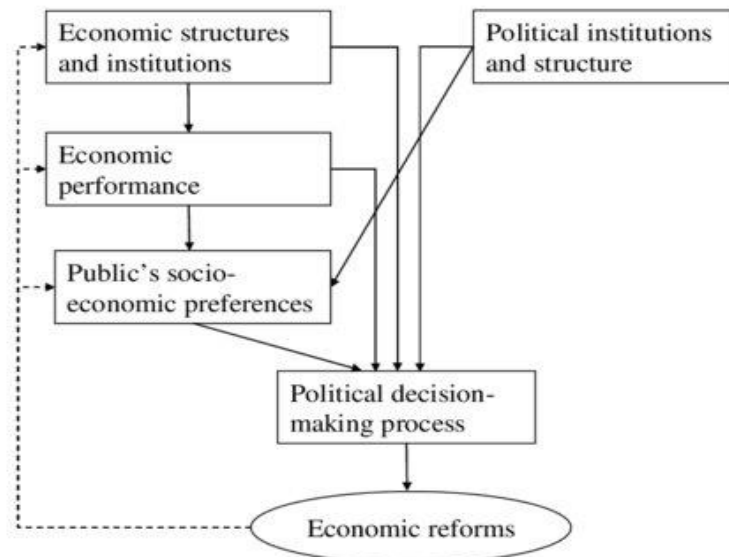
The baseline analysis using OLS, demonstrated that regulatory reforms are sensitive to an economy being in transition or not. Going further, to control the possibility of the individual constant error term to be dependent on the explanatory variables with OLS tehcnics, we have estimated a Poisson model. At this level, democracy presented a non-significant impact for transition economies and a positively significant impact irrespective of the reform indicator type for other economies. Moreover, to provide a final answer to the main question which is to know if the country level of democracy determines the difference in terms of reforms implementation, we have applied the Blinder-Oaxaca decomposition method. We mainly concluded that democracy is not the basis of these observed differences.

The rest of the study is organized as follows: Section 2 presents the theoretical framework; section 3 highlights the model and methodology; Section 4, the interpretation and discussion of the results; and finally, section 5 provides us with a conclusion and policy recommendation.

2. Democracy and regulatory reforms: theoretical framework

This section presents a brief discussion about the impact of political variables like democracy on policymaking within the domain of regulatory reforms. Regulatory reforms in the context of the post-communist transition nations are usually thought of as the wide-ranging changes which can be made to the existing economic regulatory, institutional and structural organization. Figure 2 borrowed from Staehr et al. (2009) is a diagrammatical piece showing a few of the variables influencing economic reforms. To avoid cluttering the figure 2, several other possibly critical components such as external economic and political improvements are left out. Besides, only parts of the complex interactions between diverse variables are shown.

Figure 2 : Factors affecting the implementation of economic reforms.



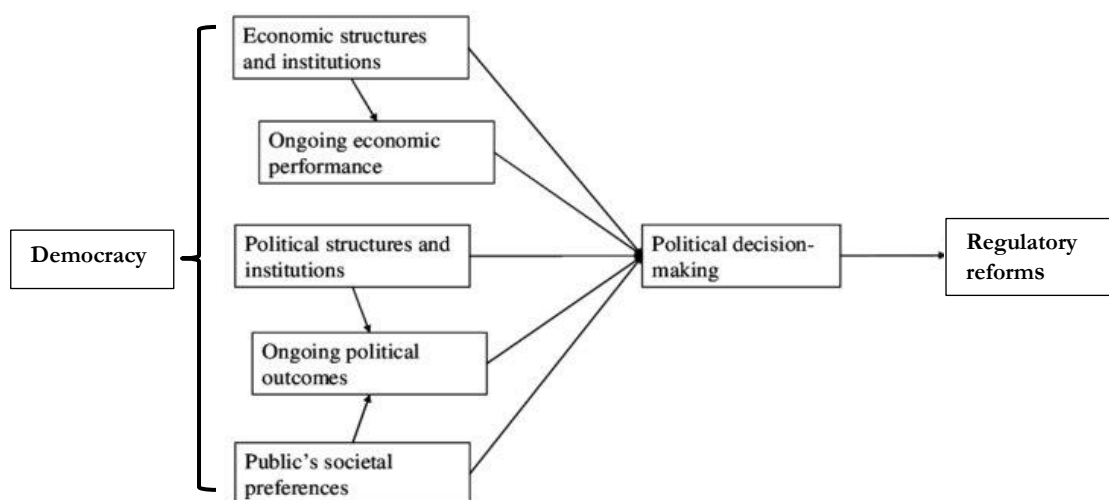
Source: Staehr et al. (2009)

Starting from the bottom of Figure 2, the economic reforms are assumed to result from the political decision-making process. The composition of parliament, the

government's ideological orientation and the regular political wheeling and managing are among the components enveloping the political decision-making process. It is, in principle, critical to recognize between the reforms chosen by the political decision-makers and the reforms executed (Staehr et al., 2009). Lack of execution capacity, time-lags from decision-making to execution, corruption and different bureaucratic obstacles might lead to a disparity between the reforms chosen by the policymakers and the reforms executed.

Figure 3 below is been derived from the representation of figure 2 above, which is closer to our main concept of interest. Indeed, democracy through its influence on political structures and institutions, ongoing political outcomes and public societal preferences can affect the political decision-making process and thus regulatory reforms.

Figure 3: Factors affecting economic reforms



Source: Author construction.

It is reasonable to accept that the particular policy-making within the areas of regulatory, institutional and structural reforms comes from at least four factors agglomerating within the political process. Firstly, the existing economic structures and institutions set the outline for reforms. Secondly, the economic performance may influence the “need” for reforms, but moreover the evaluation of costs and benefits of reforms. Thirdly, given the economic structure and performance, the population in several nations might have diverse preferences concerning reforms. The preferences

may reflect societal and individual values, the socioeconomic characteristics of the population and the available information. Fourthly, political institutions such as the electoral framework will impact the political decision-making process. The dashed line demonstrates that reforms will influence the country's economic structure and institutions, the economic performance and conceivably moreover the preferences of the public. This criticism circle may advance over a while.

Figure 3 moreover highlights two (related) issues, which raise significant challenges in econometric investigations of the political determinants of regulatory reforms. Firstly, there's a conceivable interdependency (correlation) between a few of the variables influencing reform which may lead to multicollinearity issues, hampering the identification of the isolated impact of each factor. For instance, the economic structures and institutions determine the reforms to be implemented but moreover influence the current economic performance which once more impacts reforms. Secondly, the common dependence between the factors may grant rise to interaction impacts. For instance, the level of democratic governance may influence how the public's preferences concerning reforms influences the actual policy-making.

Even though there's moreover a potential causality from regulatory reforms to democracy. The usage of regulatory reforms may initially destabilize democracy due to popular backlash or overzealous reformers' usurpation of democratic institutions. Moreover, the potential outcome of regulatory reforms may afterwards foster or fortify democracy by dispersing economic assets, making rulers more vulnerable to universal limitations, or demobilizing social bunches that will otherwise make politically destabilizing redistributive requests. In any case, the main presumption held in this paper is the causality from democracy to administrative reforms.

We thus turn to a brief review of the theoretical and empirical findings concerning a number of the components influencing regulatory reforms. The main focus will be on empirical findings for post-communist transitional countries. It is thus, outside the scope of this paper to provide a comprehensive overview of the voluminous literature in political science, economics and sociology seeking to clarify reforms. Ghastly & Kaufman (1992) and Rough & Webb (1993) give overviews of and lessons from the literature basically within the context of structural reforms in developing countries;

Roland (2002) provides an overview of the literature with specific accentuation on the post-communist transition nations.

As would be anticipated, the literature on the political determinants of regulatory reforms is both hypothetical and observational. It can moreover be partitioned into normative prescriptions and positive investigations (Roland 2002). The normative literature was especially abundant at the beginning of the 1990s as the early reforms were executed, and worldwide organizations, local policy-makers and academics were looking for points of orientation within the transition process. The normative literature has centered on the political conditions for gaining and supporting public support for reforms. Thematic such as big-bang versus gradualism and sequencing to explain reforms have been highlighted in the existing literature (Dewatripont & Roland, 1992; Kolodko 1999; Roland, 2002).

It is commonly found that a beneficial starting point at the beginning of the transition process has been conducive for economic reforms. Nations with higher per capita income and a less misshaped economic structure have executed more reforms than less advantaged nations (De Melo et al. 2001; Staehr, 2006; Roland, 2002). The economic performance appears to influence economic policy-making in subtle patterns: Inflation is, for the most part, found to speed up reforms, whereas unemployment is regularly found to have the same impact even though the empirical evidence is heterogeneous within the last-mentioned case. Taking the results at face value, the lesson could be that economic crises exhibited by high inflation and unemployment have made clear the need for change and hence been catalysts for reforms. The values and political standards changed extraordinarily over the transition nations.

It has been pointed out that the western-most transition nations traditionally have shared political and social values with Western Europe which has encouraged the adoption of Western economic structures and institutions (Roland, 2002). At last, the political structures and processes have been of major importance. Fidrmuc (2003) and Staehr (2006) show that democratization has been a critical factor behind reforms which is typically a causal linkage from democratization to reforms. This may simply reflect that the voters have had a wish for economic change and that democratic institutions have implied that the prevalent support for reforms was carried into the policy-making process (Hellman, 1998; Roland, 2002).

A range of factors reflecting the specificities of the policymaking process is habitually found to be of significance. A critical result from the empirical literature is that the political determinants of reforms change particularly between the region of post-communist transition countries and other locales such as Latin American and Africa (Wayland 2002). This underscores the basis of undertaking empirical investigations on the East European transition nations independently and not pooling them with nations in other locales.

3. Data, model specification and methodology

3.1. Model specification and empirical strategy

Based on the foregoing argument, the focus and the motivation for this paper are to understand the reforms gap between transition and other countries and the role democracy plays in driving this gap. By doing this, we implicitly highlight the effect of democracy on regulatory reforms.

To do this, we implement an empirical investigation focusing on the following stages:

- A baseline estimation of the model including a transition dummy;
- Estimation of a random and fixed-effects Poisson model given the count nature of the dependent variable to calculate the marginal effects;
- Estimation of a model using the Blinder-Oaxaca decomposition method which is an interesting tool when studying the dynamics of regulatory reforms.

3.1.1. The Poisson model

The Poisson distribution is the basic assumption in many econometric models of count data. According to Greene (2007), the Poisson regression is derived from the following model:

$$P(Y_i|X_i) = \frac{e^{-\gamma_i} \gamma_i^{Y_i}}{Y_i!} \quad Y = 0, 1, \dots \quad i = 1, \dots, N \quad (1)$$

$$\gamma_i = e^{X_i \alpha} \quad (2)$$

where P is the probability, Y_i is an observed count variable (some events) for individual i , X_i is a vector of K linearly independent explanatory variables observed for individual i , and α is a vector of parameters of appropriate dimension $K \times 1$. The form of the exponential function ensures the non-negativity of the parameter of the mean γ . The conditional mean and variance of the Poisson model are equal to the parameter γ_i .

$$E[Y_i : X_i] = Var[Y_i : X_i] = \gamma_i \quad (3)$$

The log-likelihood function of the model is given by the following equation:

$$\ln L(\alpha|Y_i) = \sum_{i=1}^N [-\gamma_i + Y_i(X_i\alpha) - \ln \varphi(1 + Y_i)] \quad (4)$$

where φ is the Gamma function. The parameters are chosen to maximize the value of the log-likelihood function. The first-order conditions are:

$$\frac{\partial \ln L}{\partial \alpha_j} = \sum_{i=1}^N (Y_i - e^{X_i\alpha}) X_i = 0, \quad j = 1, 2, \dots, K \quad (5)$$

Once the parameters are known, the marginal effects in the Poisson model are calculated as follows:

$$\frac{\partial E[Y_i : X_i]}{\partial \alpha_j} = \gamma_i \alpha \quad (6)$$

When we move to panel data, the model is specified by including the fixed effect (indicator variable) in the conditional expectation. Thus, the distribution for Y_{it} , becomes:

$$P(Y_{it}|X_{it}) = \frac{e^{-\gamma_{it}} \gamma_{it}^{Y_{it}}}{\varphi(1+Y_{it})} \quad (7)$$

$$E_t \ln \gamma_{it} = \theta_i + X_{it}\alpha \quad (8)$$

where θ_i is the fixed effect (specific individual effect), X_{it} is a vector of explanatory variables observed at time t for individual i , and α is a vector of parameters of appropriate dimension.

3.1.2. Oaxaca-Blinder decomposition model

The choice of the use of the decomposition approach of Blinder (1973) and Oaxaca (1973) is driven by the following main reasons:

The Oaxaca-Blinder decomposition technic is broadly utilized to recognize and evaluate the isolated contributions of group differences in quantifiable characteristics, such as education, experience, marital status, and geographical differences to racial and gender gaps in outcomes (Fairlie, 2005). Hence, in comparison with other decomposition strategies, this last is closer to our investigate question since it considers geographical differences. Given our objective, this technique may be applied as a means of breaking down the effects of the political system on regulatory reforms driven by (i) existing stages of democracy (i.e., mean value), and (ii) the effects of the change in the stages of democracy.

As Fortin et al. (2011) point out, there's an effective relationship between the Oaxaca-Blinder decomposition strategy and treatment effect analysis. Undoubtedly, these authors give a precise interpretation of decomposition strategies within the rationale of program impact assessment.

Mean - distributional strategies such as the Oaxaca-Blinder decomposition technic is closer to our objective. There's, therefore, no need to go beyond the consideration of conditional distributional strategies or reweighting based strategies such as Juhn–Murphy–Pierce decomposition strategy, variance decomposition strategy and Machado and Mata (2005) conditional quantile regression strategy.

One potential limitation of Blinder-Oaxaca decompositions is that they may not give consistent estimates of the wage structure and composition impact when the conditional mean is a non-linear function (Barsky et al., 2002); this conclusion was based on its objective to look at the role of earnings and other components within the racial wealth gap. The standard Oaxaca-Blinder decay in their case is insufficient since the wealth-earnings relationship is non-linear, but this specificity does not apply in our case since our reform's equation is linear. There is in this manner no need to propose a more adaptable approach as Barsky et al. (2002) did. Since the strategy is robust to these

departures and remains the strategy of choice when linearity holds, Kline (2009) points out that it is « doubly vigorous » within the sense of Robins et al. (1994) and Egel, et al. (2009).

We adopt the formulation of Yun (2005) which seems the most suitable. Let's consider a reform variable which is a linear combination of the independent variables such that we have:

$$\text{Reform} = F(V\varphi) \quad (9)$$

F is a function that can take the linear form like any other form. V is the $K * N$ matrix of independent variables which include democracy. By hypothesis, we retain two groups : group A (other countries) and group B (economy in transition).

The following expression provides the average difference between these two groups :

$$\text{Reform}_A - \text{Reform}_B \equiv [\bar{F}(V_A\bar{\varphi}_A)] + [\bar{F}(V_B\bar{\varphi}_A)] + [\bar{F}(V_B\bar{\varphi}_A)] + [\bar{F}(V_B\bar{\varphi}_B)] \quad (10)$$

Where φ is the vector of the estimated coefficients of equation (10). The first component in parentheses measures the differences in observable characteristics (explained component) and the second component measures the difference in coefficients (unexplained component).

Following, in particular, Yun (2005), the explanatory power of a variable k to the differences in the reforms undertaken is given by the expression:

$$C_k = [\bar{F}(V_A\bar{\varphi}_B)] + [\bar{F}(V_B\bar{\varphi}_B)] \left[\frac{(\bar{V}_A^k - \bar{V}_B^k)\hat{\varphi}_A^k}{(\bar{V}_A - \bar{V}_B)\hat{\varphi}_A} \right] \quad (11)$$

Where \bar{V}_g^k is the mean of the observations of variable k in group g : A, B. $\hat{\varphi}_k^k$ is the estimated coefficient of variable k in group g .

The next section presents data, sample and preliminary statistics description.

3.2. Data, sample and descriptive Statistics

The sample consists of 141 countries for which information on our main variables is available. The time period covered by the study is 2003-2013. In the analysis, we use several sources of data including Inter-Parliamentary Union (IPU), World Bank's Doing Business, World Development Indicators, Freedom House, Polity IV, Djankov et al. (2007), and La Porta et al. (1999). The definition of all variables and their sources is provided in Table 1 below. Mainly, the choice of World Bank's Doing Business to extract and construct reforms data is guided by the fact that these data tend to be less correlated with overall economic development than some of the other indicators of business reforms (macro-level) used in the literature. Moreover, the countries in the global sample presented in table A1 in the appendix, are heterogeneous in terms of socio-economic development, size, political and investment climate and regional position.

Table 1: Description of variables

Variable	Description
Reform	Dummy equal to 1 if a country implemented one or more reforms during the year and 0 otherwise. Source: Doing Business. www.doingbusiness.org .
Reform 2	The number of reforms: Log of 1 plus the total number of reforms for a given country-year. Source: Doing Business.
Reform 3	Business Freedom (graded from 0 to 100). Source: Heritage Foundation.
Democracy	Dummy equal to 1 if a country has a democracy score of 5 or higher and 0 otherwise. Source: Polity IV.
Election	Dummy variable equal to 1 if an election took place 12 months before the start of the Doing Business reforms period for the Lower House of the country and 0 otherwise. Source: Inter-Parliamentary Union (IPU) and website searches.
Education	Dummy equal to 1 if significant value of secondary school enrollment and 0 if not. Source: World Development indicator.
Inflation	Dummy equal to 1 if significant value of secondary school enrollment and 0 if not. Source: World Development indicator.

Variable	Description
Ethnic diversity	Measures for each country the probability with a random draw that two generic individuals are not members of the same ethnic group (Alesina et al., 2003)
Trade openness	Dummy equal to 1 if significant value of exportations and 0 if not. Source: World Development indicator.
GDP per capita	Log of Gross Domestic Product (GDP) per capita in 2003. Source : Penn World Tables.
Latitude	The absolute distance of a country from the equator divided by 90. Source: La Porta <i>et al.</i> (1999).
Rule of Law	Values of Rule of Law index in 2003. Source: World Bank. www.worldbank.org/wbi/governance/data
Muslim	Dummy indicating the main religion in the country is Islam. Source: La Porta <i>et al.</i> (1999).
Catholic	Dummy indicating the main religion in the country is Catholicism. Source: La Porta <i>et al.</i> (1999).
Protestant	Dummy indicating the main religion in the country is Protestantism. Source: La Porta <i>et al.</i> (1999).

Source : Author's calculations.

Considering this effective heterogeneity, we consider two samples namely transition economies (in table A2 in appendix) and other economies (in table A3 in appendix). There are 25 economies in transition concerned in this study: Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Macedonia, Moldova, Mongolia, Poland, Romania, Russian Federation, Slovak Republic, Slovenia, Tajikistan, Ukraine and Uzbekistan.

The explanatory and explained variables used in our model will be modelled on the specification used by Amin and Djankov (2014) along with the consideration of additional variables for which we consider the theoretical hypothesis of an impact on our dependent variable. Summary statistics of the explanatory and explained variables used are provided in Table 2 below.

Table 2 : Summary statistics

Variable	Obs.	Country	Mean	Std. Dev.	Min.	Max.
Latitude	1409	144	.3019585	.1905559	.0111	.7111
Reform	1409	144	.6813343	.4661245	0	1
Reform1	1409	144	.6981458	.5594623	0	2.197225
Reform3	1409	144	81.21	10.61	53.70	100.00
Democracy	1409	144	5.621008	3.848666	0	10
Education	1409	144	.7104771	.3917782	0	1
Inflation	1409	144	.8922049	.1245933	0	1
Ethnic diversity	1409	144	.3018051	.4748126	0	1
Trade openness	1409	144	.3437013	.6610225	0	1
Corruption	1409	144	.23002	.4212115	0	1
GDP per capita	1361	139	8.574096	1.165828	6.36308	10.49635
Rule of Law	1400	143	-.0807643	.9534134	-1.61	1.95
Muslim	1409	144	.2647268	.4413442	0	1
Catholic	1409	144	.3427963	.4748126	0	1
Protestant	1409	144	.1483322	.3555551	0	1
Election	1409	144	.23066	.4214048	0	1

Source : Author's calculations. Obs.= Observations. Std. Dev.=Standard Deviation. Min.=Minimum. Max.=Maximum

Figure 4 below show both increasing and decreasing trends of regulatory reforms over time across our sample countries. Democracy index follow a decreasing trend with a stagnation after 2007 (figure 5). The stylized fact which can be derived from these last figures is that there is a relative opposite correlation between both mechanisms.

Figure 4. Average regulatory reform index, 2003 to 2013 Figure 5. Average democracy index, 2003 to 2013



Source: Author construction

4. Empirical investigation and result discussion:

Here we present the results of the empirical investigation following the methodology presented above. We intend to analyze firstly the results of our baseline investigation which simply verifies the effect of belonging to the sample of transition economies on the implementation of reforms and secondly, the results of our investigation using the Blinder-Oaxaca decomposition. We present also the results of the estimation of the fixed-effect Poisson model along with robustness check investigation results.

4.1. Baseline investigation results

Table 3 below shows the compilation of the results of our baseline and Blinder-Oaxaca decomposition investigation.

Table 3. Explanatory contributions of democracy to reform gaps

Variable	OLS	Blinder-Oaxaca decomposition					
		Other economies	Transition economies	Overall	Endowments	Coefficients	Interaction
Transition economies	.199*** (.043)						
Democracy	.131*** (.034)	.126*** (.039)	.119 (.080)		-.021 (.014)	.005 (.070)	-.001 (.016)
GDP per capita	-.008 (.019)	-.014 (.021)	-.022 (.064)		.009 (.027)	.070 (.604)	-.003 (.028)
Protestant	-.188*** (.045)	-.173*** (.050)	-.283** (.130)		-.035** (.017)	.005 (.006)	.014 (.017)
Catholic	-.064** (.032)	-.052 (.044)	-.009 (.081)		-.000 (.002)	-.0135 (.029)	-.001 (.003)
Muslim	-.019 (.036)	-.016 (.042)	-.056 (.082)		-.004 (.006)	.008 (.019)	.003 (.006)
Latitude	.038 (.109)	.018 (.114)	-.098 (.448)		.026 (.119)	.061 (.244)	-.030 (.123)
Election	.016 (.029)	.037 (.034)	-.079* (.045)		.004 (.003)	.032** (.016)	-.005 (.005)
Rule of Law	.020 (.026)	.033 (.030)	-.044 (.065)		-.013 (.020)	-.023 (.021)	.023 (.022)
Constant	.679*** (.160)	.723*** (.174)	1.082** (.524)			-.742 (.890)	
Other economies				.645*** (.014)			
Transition economies				.895*** (.021)			
Difference				-.250*** (.025)			

Variable	OLS	Blinder-Oaxaca decomposition					
		Other economies	Transition economies	Overall	Endowments	Coefficients	Interaction
Endowments				-.034 (.111)			
Coefficients				-.213*** (.048)			
Interaction				-.003 (.118)			
Observations	1361	1132	229	1361	1361	1361	1361

Source: Author's calculations. Significant at 1% (***) 5% (**) and 10% (*). Obs.= Observations. OLS= Ordinary Least Squares; GDP= Gross Domestic Product.

The first column of Table 3 above shows an augmented estimation using a dummy to capture transition economies. The coefficient of this dummy is statistically significant. This result is interesting because it tends to support the figure 1 presented at the level of the introduction. Indeed, the result means that regulatory reforms are sensitive to been transition economies or not.

The hypothesis of a positive effect of the transition economies dummy and democratization on pro-market reforms (Tresiman, 2014) is verified ipso facto. The transition to market economies of these economies mostly communist at the base (Tresiman, 2014) on one hand, and the movement of these economies to the democratic Western block, for instance on the other hand, provide a favourable climate for the implementation of reforms (Senik and Grosjean, 2007, 2008, 2011; EBRD, 1999; Aslund, 2013).

Considering this basic result and to push the analysis further, we carried out an additional empirical investigation to understand this statistical significance.

4.2 Poisson model estimation results

To take into account the questioning of the estimation by OLS with the consideration of the possibility that the individual constant error term may be dependent on the explanatory variables, we have implemented the estimation of a Poisson model. The implementation of the Hausmann test allowed us to reject the null hypothesis; the most appropriate model is, therefore, the fixed effects model instead of the random effect model. Table 4 below presents the estimation results of the Poisson fixed effects models considering overall, other economies and transition economies samples.

Table 4. Marginal effects from fixed-effects Poisson model: Overall, other economies and transition economies samples.

Variables	Transition economies		Other economies		Overall	
	(1)	(2)	(1)	(2)	(1)	(2)
Democracy	.119 (.080)	.123 (.086)	.113** (.053)	.122*** (.024)	.090* (.081)	.118* (.079)
GDP per capita	-.002 (.0069)	-.002 (.062)	-.016 (.023)	.211 (.648)	.010 (.088)	.023 (.063)
Protestant	-.108** (.045)	-.52*** (.191)	-.122*** (.033)	-.174*** (.015)	-.37*** (.178)	-.55*** (.199)
Catholic	-.009 (.081)	-.007 (.078)	-.005 (.022)	-.006 (.023)	-.18*** (.019)	-.21*** (.020)
Muslim	-.018 (.083)	-.052 (.079)	.014** (.041)	.041** (.019)	.061 (.028)	.051 (.018)
Latitude	-.025 (.056)	-.025 (.462)	.002 (.007)	.023 (.460)	.42*** (.131)	.019 (.136)
Election	-.069 (.048)	-.871*** (.038)	-.003 (.006)	-.209*** (.079)	.013 (.149)	.32*** (.162)
Rule of Law	-.044 (.065)	-.574 (1.009)	.033 (.03)	.081 (.265)	.035 (.132)	.042 (.111)
Constant	.82** (.524)	.082** (.522)	.481*** (.028)	.680*** (.117)	.015 (.771)	.008 (.149)
Obs.	229	229	1132	1132	1361	1361

Source: Author's calculations. Significant at 1% (***) 5% (**) and 10% (*). Obs. = Observations. GDP = Gross Domestic Product. (1) = number of reforms; (2) = Business freedom.

Fixed effects have an impact on the effect of explanatory variables. Thus, these results serve as evidence that this method is extremely important in the study to determine fixed effects, such as the governance effect and the effect of social indicators. Note that the estimation results for the fixed effects Poisson model are relatively similar to those obtained with the respective initial models. The major conclusion that can be drawn from this analysis is that the results obtained are relatively different when we adjust for fixed effects.

Considering a large number of binary variables to estimate the unconditional model specification is practically not possible since the database contains 144 countries. However, we obtain estimates using conditional fixed-effects models. Compared to the results of the estimation using alternative methods (Ordinary Least Square and Blinder-Oaxaca decomposition), we acknowledge that the coefficients are somewhat smaller in absolute value. In addition, some coefficients become insignificant and others present a different sign. The standard deviations, for their own, are higher.

Religion appears to impact negatively and significantly on reforms independently of the sample and the reform index. Specifically, protestant and catholic present a negative impact for respectively all samples and the overall sample while Muslim impact positively for the other economies sample (non-transition countries). Therefore, Election is not a guarantee of implementation of reforms even if there is usually a political pledge; the public choice theory explaining that politicians invest and promise a lot before elections; but later, there is a gap between their promise and the effective realization.

The variable election shows a negative and significant impact on reform (business freedom) when we consider either transition countries or non-transition countries; however, this impact becomes negative and significant for the overall sample. We can, therefore, conclude that investigating the impact of election should consider the heterogeneity of the sample which implies that estimation results from the overall sample cannot imply robust economic policy recommendations.

More interestingly, democracy presents a positive and significant impact independently of the reform index only for economies that are not transition economies. When we consider transition economies, the relation becomes non-significant. The hypothesis of a positive relation is therefore validated. However, we cannot at this stage answer our research question which is to verify if we can explain the difference in terms of reforms implementation with the country level of democracy. It is therefore, necessary to implement the Blinder-Oaxaca decomposition method.

4.3 Model using the Blinder-Oaxaca decomposition method

The last 6 columns of Table 3 above report the results of our investigation based on the Blinder-Oaxaca decomposition.

The first two columns of the decomposition present the estimates for each group considered. The variable Protestant also presents a negative and significant impact independently to the sample used. More interestingly, our variable of interest always shows a positive sign but with a statistical significance only for the sample of other economies.

However, the column « overall » comes to relativize this result because we notice that the significance now concerns the two samples. The comparison now returns to the

magnitude as the magnitude of the impact is greater for transition economies than for other types of economies. Indeed, we note that the difference on average of the number of reforms undertaken (in log) is 0.645 for the other economies and 0.895 for the transition economies; the latter result suggests a difference of -0.25 in favour of transition economies. At this level, we acknowledge that there is indeed a statistically significant difference.

The « endowments » columns indicate the average increase in the number of reforms in transition economies, assuming that they had the same characteristics as other economies. We can see that the value of 0.034 is very far from the mean of the difference. This reinforces our conclusion from the previous paragraph. The second term of -0.213 quantifies the change in economic transition's reform when applying the other economies' coefficients to the economic transition's characteristics. The third term of -0.003 is the interaction term that measures the simultaneous effect of differences in endowments and coefficients.

When we look closely at these last three columns of Table 3 above, we find that probably the differences linked to religion seem to be the main explanation for the differences observed in terms of reform between the transition economies and the other economies. This confirms the results of Tresiman (2014) who emphasized historical factors like the exposure to communism and the influence of religion. It confirms the roles of these factors in pro-market reforms for transition economies. Grosjean and Ben Yishay (2014) also insisted on the role of initial factors.

Furthermore, the results show that democracy is not significant in explaining differences. Such a conclusion contrasts with the results of Tresiman (2014). This is also confirmed by regional estimates where we find that democracy is relevant for the rest of the world but not for transition economies.

4.4. Robustness check

For robustness purposes and to address the external validity of our results, we checked whether our estimation techniques would yield the same results if applied into a different context with different estimation methods. We have repeated the previous estimation considering additional measures of reforms namely the number of reforms and business freedom index. Indeed, the notion of regulatory reforms is particularly

problematic. The key problem arises from the inherent tension between the number of reforms and their effectiveness. A sufficiently large number of regulatory reforms may signal the extent of legislative over-production whereas a smaller number of reforms can testify to their effectiveness. In the same way, to appropriately operationalize the quantity-quality trade-off in the identification strategy, we have included the decomposed index of business freedom from Heritage Foundation. We have included also additional explanatory variables highlighted in the literature such as education, inflation, ethnic diversity, trade openness and corruption.

Table 5. Robustness check of Reform variable (alternative reform index; alternative estimation methods: Ordinary Least Square and marginal effects).

Variables	Ordinary Least Squares			Marginal effects		
	(1)	(2)	(3)	(1)	(2)	(3)
Democracy	.085* (.079)	.118* (.079)	.118* (.079)	.090* (.081)	.102** (.041)	.102** (.041)
GDP per capita	.012 (.09)	.015 (.051)	.015 (.051)	.010 (.088)	.023 (.063)	.023 (.063)
Protestant	-.45*** (.186)	-.55*** (.199)	-.55*** (.199)	-.37*** (.178)	-.643*** (0.102)	-.64*** (0.102)
Catholic	-.069 (.048)	-.34*** (.038)	-.34*** (.038)	-.18*** (.019)	-.21*** (.020)	-.21*** (.020)
Muslim	.1 (.072)	.078 (.046)	.078 (.046)	.061 (.028)	.051 (.018)	.051 (.018)
Latitude	.028 (.157)	.067 (.183)	.067 (.183)	.013 (.149)	.019 (.136)	.019 (.136)
Election	-.42*** (.131)	-.48*** (.184)	-.45*** (.184)	-.42*** (.131)	-.32*** (.162)	-.32*** (.162)
Rule of Law	.044 (.142)	.081 (.131)	.081 (.131)	.035 (.132)	.042 (.111)	.042 (.111)
Education	.055*** (.007)	.0002*** (.0001)	.001*** (.0004)	.182*** (.015)	.077** (.03)	.077** (.03)
Inflation	-.182*** (.015)	-.019 (.026)	.039 (.111)		-.014 (.023)	.042 (.122)
Ethnic diversity		.211*** (.017)	.206*** (.075)		.162*** (.035)	.162*** (.035)
Trade openness			.058 (.043)			0.0781 (0.256)
Corruption			-.374*** (.055)			0.512*** (0.061)
Constant	.723*** (.174)	1.082** (.524)	1.82** (.524)	.2** (.524)	.008 (.149)	.811 (.146)
Obs.	1361	1361	1361	1361	1361	1361

Source: Author's calculations. Significant at 1% (***); 5% (**) and 10% (*). Obs. = Observations. GDP = Gross Domestic Product. (1) = number of reforms; (2) & (3) = Business freedom.

Table 5 above reports regression results using the Ordinary Least Squares and marginal effects estimation method considering either the number of reforms or business freedom as the dependent variable. Mainly, the results, with a couple of exceptions, are qualitatively similar to what we found above using other methods. That is the number of reforms is significantly and positively correlated with democracy in the various specifications implying more reforms in countries is caused by more democracy. This result confirms the one of Amin and Djankov (2014) which used a different sample.

The first exception is when along with the elections variable we control for inflation, ethnic diversity, trade openness and corruption; the variable election now is absolutely negatively and significantly related to reforms. In addition, adding the various control variables does lead to changes in the estimated impact value of the democracy variable which increases from 0.085 to 0.118 for Ordinary Least Square and from 0.09 to 0.102 when we use marginal effect (the significance level is also increasing from 10 to 5 per cent).

The control variables education and ethnic diversity present positive and significant impacts on reforms. Investing in human capital improvement through education is therefore important for the implementation of reforms; the diversity of ethnic presentation appears also to be a good thing for the implementation of reforms. Inflation presents a negative and significant impact only for the consideration of the number of reforms and the usage of the Ordinary Least Square method. The variable corruption presents a contradictory result when we use different methods: with the Ordinary Least Square method, the impact is negative and significant while using the marginal effect method this impact is now positive and significant.

5. Conclusion

The rapid and heterogeneous expansion of democratic regimes around the world has produced a lively debate concerning their prospects for survival and consolidation of regulatory reforms. This issue assumes a particular importance in the face of another global trend: the introduction of reforms. The questions of whether the two processes are complementary, the impact of one on the other, the causality direction have been partially addressed in the literature. Going beyond, and in the view to contribute to the

existing literature, we questioned the importance of democracy in the implementation of regulatory reforms with a comparative approach based on the Oaxaca - Blinder decomposition technics.

The effect of democracy on reforms is not obvious. Many studies on this subject have focused on macro reforms. It is only recently that authors like Amin and Djankov (2014) have been able to establish an empirical link at the micro-level. In this article, the objective was to analyse the effect of democracy on reforms by checking whether the differences observed between the transition economies and the rest of the economies in terms of the reforms undertaken are linked to the level of democracy. This study has thus considered the importance of democracy on regulatory reforms in the case of 141 countries during the period 2003-2013 with a comparison approach. Given our objective, we have mainly used an Oaxaca - Blinder decomposition approach, a method consistent with our investigation purpose.

This research is at the micro-level, a continuation of Tresiman (2014), directly confronting the positive effect of democracy on pro-market reforms in transition economies. In fact, most studies were done at a macro-level without questioning the differences related to the heterogeneity of the sample. Two main conclusions were derived from the results of our investigation.

We firstly reported a baseline estimation and then an estimation adopting a Blinder - Oaxaca decomposition approach to understand the impact of democracy on the differences between transition economies and the rest of economies. Our empirical results do not suggest a significant impact of democracy in these observed differences. Democracy does not affect the results of the reform undertaken in transition economies.

The estimation using the Poisson model and marginal effect estimation method were in agreement with the previous result. The robustness check permits us to confirm the robustness of our estimation and to identify some other factors affecting reforms. The control variables education and ethnic diversity present a positively significant impacts on reforms. Investing in human capital improvement through education is therefore important for the implementation of reforms; ethnic diversity appears also to be interesting for the implementation of reforms. Inflation presents a negative and significant impact only when the number of reforms and the usage of the Ordinary

Least Square method are considered. The variable corruption presents a contradictory result when we use different methods: with the Ordinary Least Square method, the impact is negative and significant while using the marginal effect method this impact becomes positive and significant.

Moreover, the results based mainly on the Oaxaca - Blinder decomposition approach demonstrate that democracy is not the basis of the difference observed. This underlines the importance of democracy when it comes to unleashing the reform potential of the economies concerned since a democratic political system does not increase the probability of regulatory reforms. Many growth and efficiency-enhancing regulatory reforms during the study period we used were carried out by weak democracies (i.e., Israel) or authoritarian regimes (i.e., China).

Overall, our investigation lead to the validation of two main ideas. Firstly, we found that democracy has not affected the results of reforms put in place by economies in transition; secondly, democracy is not the basis of the differences observed between economies in transition and the rest of the world. This brings forward the question of the importance of democracy when it comes to unleashing the reform potential of an economy; in the same light, democracy does not seem to affect the differences in the number of business reforms between the two groups.

Appendix

Table A1: List of Countries in our sample

1) Afghanistan	38) Canada	73) Austria	110) Guinea
2) Burundi	39) El Salvador	74) Chile	111) Kuwait
3) East Timor	40) India	75) Ethiopia	112) Morocco
4) Haiti	41) Lesotho	76) Ireland	113) Syria
5) Laos	42) Netherlands	77) Luxembourg	114) Zimbabwe
6) Rwanda	43) Serbia	78) Nigeria	115) Burkina Faso
7) Tajikistan	44) Togo	79) Slovenia	116) D. R. Congo
8) Albania	45) Argentina	80) Azerbaijan	117) Kyrgyzstan
9) Cambodia	46) Equatorial	81) China	118) Greece
10) Ecuador	Guinea	82) Fiji	119) Korea North
11) Latvia	47) Indonesia	83) Israel	120) Moldova
12) Namibia	48) Liberia	84) Norway	121) Mauritius
13) Saudi Arabia	49) New Zealand	85) Solomon Is.	122) Sudan
14) Tanzania	50) Sierra Leone	86) Bahrain	123) Uzbekistan
15) Algeria	51) Armenia	87) Colombia	124) Bolivia
16) Cameroon	52) Cen. Afr.	88) Finland	125) Cyprus
17) Egypt	Rep.	89) Italy	126) Ghana
18) Hungary	53) Libya	90) Madagascar	127) Kenya
19) Lebanon	54) Nicaragua	91) Oman	128) Mexico
20) Nepal	55) Singapore	92) Somalia	129) Philippines
21) Senegal	56) Australia	93) Uganda	130) Suriname
22) Thailand	57) Chad	94) Bangladesh	131) Venezuela
23) Swaziland	58) Estonia	95) France	132) Bosnia
24) Vietnam	59) Lithuania	96) Ivory Coast	133) Czech
25) Botswana	60) Niger	97) Pakistan	Republic
26) Denmark	61) Slovak Rep.	98) South Africa	134) Poland
27) Korea, South	62) Turkey	99) Ukraine	135) Mali
28) Mongolia	63) Benin	100) Belarus	136) Spain
29) Portugal	64) Croatia	101) Gabon	137) United States
30) Sweden	65) Georgia	102) Jamaica	138) Mozambique
31) Yemen	66) Jordan	103) Malaysia	139) Taiwan
32) Brazil	67) Mauritania	104) Panama	140) Russian
33) Djibouti	68) Paraguay	105) South Sudan	Federation
34) Qatar	69) Uruguay	106) UK	141) Romania
35) Switzerland	70) Cuba	107) Costa Rica	
36) Macedonia	71) Germany	108) Zambia	
37) Angola	72) Kazakhstan	109) Bulgaria	

Source: Author compilation

Table A2: List of economies in transition

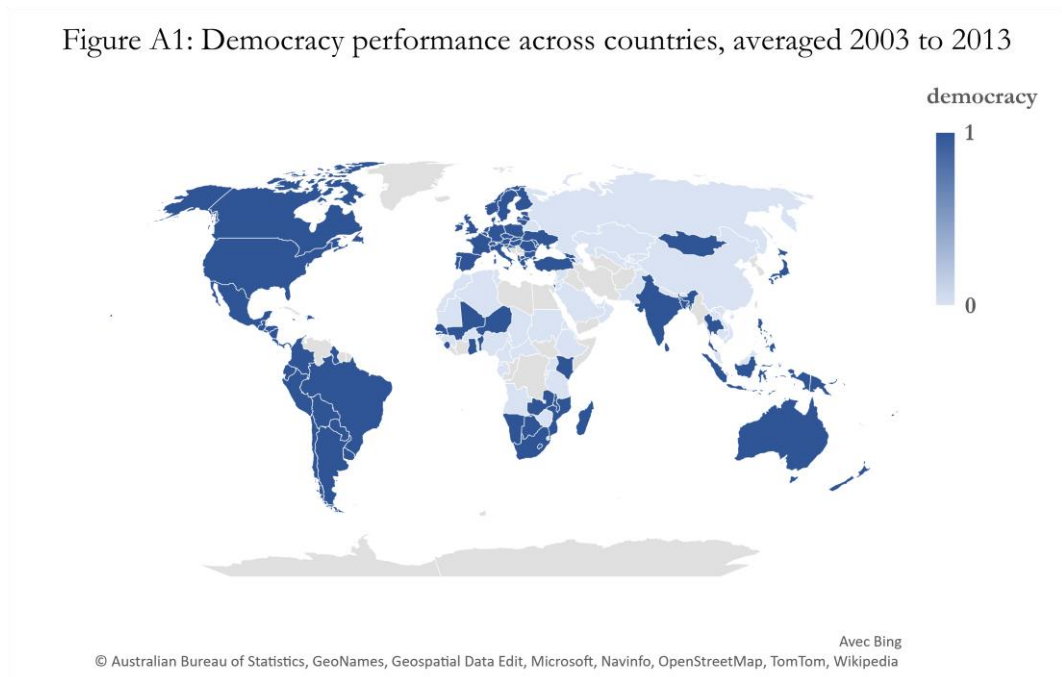
1) Albania	8) Estonia	16) Moldova	22) Slovenia
2) Armenia	9) Georgia	17) Mongolia	23) Tajikistan
3) Azerbaijan	10) Hungary	18) Poland	24) Ukraine
4) Belarus	11) Kazakhstan	19) Romania	25) Uzbekistan
5) Bulgaria	12) Kyrgyzstan	20) Russian Federation	
6) Croatia	13) Latvia	21) The Slovak Republic	
7) The Czech Republic	14) Lithuania		
	15) Macedonia		

Source: Author compilation

Table A3: List of other economies

1) Afghanistan	31) Canada	59) Austria	89) Guinea
2) Burundi	32) El Salvador	60) Chile	90) Kuwait
3) East Timor	33) India	61) Ethiopia	91) Morocco
4) Haiti	34) Lesotho	62) Ireland	92) Syria
5) Laos	35) Netherlands	63) Luxembourg	93) Zimbabwe
6) Rwanda	36) Serbia	64) Nigeria	94) Burkina Faso
7) Cambodia	37) Togo	65) China	95) D. R. Congo
8) Ecuador	38) Argentina	66) Fiji	96) Greece
9) Namibia	39) Equatorial Guinea	67) Israel	97) Korea North
10) Saudi Arabia	40) Indonesia	68) Norway	98) Mauritius
11) Tanzania	41) Liberia	69) Solomon Is.	99) Sudan
12) Algeria	42) New Zealand	70) Bahrain	100) Bolivia
13) Cameroon	43) Sierra Leone	71) Colombia	101) Cyprus
14) Egypt	44) Cen. Afr. Rep.	72) Finland	102) Ghana
15) Lebanon	45) Libya	73) Italy	103) Kenya
16) Nepal	46) Nicaragua	74) Madagascar	104) Mexico
17) Senegal	47) Singapore	75) Oman	105) Philippines
18) Thailand	48) Australia	76) Somalia	106) Suriname
19) Swaziland	49) Chad	77) Uganda	107) Venezuela
20) Vietnam	50) Niger	78) Bangladesh	108) Bosnia
21) Botswana	51) Turkey	79) France	109) Mali
22) Denmark	52) Benin	80) Ivory Coast	110) Spain
23) Korea, South	53) Jordan	81) Pakistan	111) United States
24) Portugal	54) Mauritania	82) South Africa	112) Mozambique
25) Sweden	55) Paraguay	83) Gabon	113) Taiwan
26) Yemen	56) Uruguay	84) Jamaica	114) Costa Rica
27) Brazil	57) Cuba	85) Malaysia	115) UK
28) Djibouti	58) Germany	86) Panama	116) Switzerland
29) Qatar		87) South Sudan	
30) Angola		88) Zambia	

Source: Author compilation



Source: Author construction based on Democracy score extracted from Polity IV.

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