

# QUALITY OF GOVERNANCE AND ELECTRICITY REFORMS: THE CASE OF ENERGY COMMUNITY IN SOUTHEAST EUROPE<sup>1</sup>

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## **Abstract:**

*Eight Southeast European countries in 2005 signed the Treaty on establishing the Energy Community and took the obligations to adopt the EU Acquis on energy and to conduct all the necessary reforms. This process strongly depends on the SEECs' institutional capacity, especially the quality of national governance, and, at the same time, the appropriate level of institutional resources is crucial for the SEE countries in order to benefit from the reforms in electricity sector. The paper identifies the key reform steps in SEECs, how much of these reforms have taken place till today and to relate the reform progress with the quality of governance.*

*Our empirical research confirms the mediation hypothesis that regulatory quality mediates the effects of government effectiveness on the success in implementation of reforms in electricity sector of transition countries. The results of regression analysis show that the regulatory quality is a crucial condition for the success of electricity reforms in transition countries. Having in mind the fact that these countries have relatively poor institutional performance, the dilemma is weather the well designed reform model can be successfully implemented in countries where certain institutional resources are still missing.*

**Key words:** governance, regulatory quality, electricity reforms, Southeast Europe

**JEL classification:** L94, P36, Q48

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## **1. Introduction**

Economic reforms in electricity sector of Southeast European countries were implemented as the part of the structural adjustment reforms and were driven by the need for consolidation of public finances, increase in investments and technological upgrading of the sector, as well as stability of electricity supply. Electricity reforms in the SEE countries have been also motivated by the aim of establishing the Energy Community. In October 2005 the Treaty on establishing the Energy Community was signed as the only legally binding document for all SEE countries and it obliges the signatories to adopt the EU *Acquis communautaire* in energy, competition and environment. The Energy part has arranged the cooperation and establishment of common regulatory frame for electricity trade across the whole EU and within the SEE region under the same rules and it has included gradual liberalisation of electricity markets, restructuring electricity companies, maintaining cost recovery tariffs, tariff methodologies and technical codes for network access.

Although all SEE countries have taken obligations, the process of implementation of the Energy Community is still under way. This process strongly depends on the SEECs' institutional capacity, especially the quality of national governance and, at the same time, the appropriate level of institutional resources is crucial for the SEE countries in order to benefit from the reforms in electricity sector. The importance of institutional capacity for the design and implementation of an effective economic policy has been demonstrated in various empirical studies, but there have been no such studies focusing electricity sector in Southeast Europe. Therefore the aim of the paper is to identify the key reform steps in SEECs, how much of these reforms have taken place till today and to relate the reform progress with the quality of governance. In assessing the governance quality we use the World Bank's Worldwide Governance Indicators that include voice and accountability, political stability, government effectiveness, regulatory quality, the rule of law and control of corruption. Since the focus of the paper is on regulation rather than on governance in its political aspects, we use two variables in the World Bank data set that come closest to capture the quality of the outcome and process dimensions of regulation: government effectiveness and regulatory quality.

Since it is assumed that better government effectiveness increases the success of electricity reforms, our empirical work is concerned with whether the regulatory quality mediates the effects of government effectiveness on reform success and whether the effectiveness of the government has its direct impact on reforms in SEE countries that have signed the Treaty on establishing Energy Community.

## **2. Reforms in electricity sector of Southeast European countries**

### ***2.1. Key reform phases***

Although different countries have chosen and implemented different reform models because of diverse sector and macroeconomic characteristics and different institutional environment, still all European economies, including SEE countries, have followed the EU reform model that involves the following reform steps:

- Corporatisation of state-owned companies

Corporatisation is the first step and it means the separation of the utility from the Ministry. This step involves at least the creation of clear accounting framework and separation of accounts for different parts of the business. Although the separation of accounts has been achieved in all countries, some governments have still retained the final authority to set prices.

- Enactment of an electricity (energy) law and implementation of regulatory reforms

Electricity or energy law is generally recognised as a formal precondition for regulatory reforms and establishment of a formally independent regulatory agency. Regulatory reforms are often considered as the most important element of the economic reforms in electricity sector. An independent regulator whose regulatory function is clear and removed from the Ministry should set tariffs, entry and exit terms for those parts of the industry that remain a monopoly.

- Restructuring

The process of restructuring involves the unbundling of network operation from the competitive activities. Profitable parts may be separated for sale to private investors (generation and supply) where competitive elements exist, from those parts that are natural monopolies (transmission and distribution).

- Establishment of a competitive wholesale generation market

The breaking of the monopoly in generation involves some form of competition so the generators have to compete with each other to sell their electricity. This experience seemed to show that independent generators could often provide power more cheaply than traditional utilities and seemed to show benefits in breaking the absolute generation monopoly of traditional generation utilities. (Thomas and Hall, 2006, 18)

- Privatisation

Privatization of state owned utility is final, but the least common step of electricity reforms and the most controversial one. Although the privatization has no necessary connection to liberalization process, the international financial institutions, especially the World Bank and International Monetary Funds, have made the pressure on developing countries during the 90s to conduct privatization in electricity sector. It has become more evident over the years that changes in ownership may not be sufficient to improve sector performance. Moreover, privatizing loss-making state-owned enterprise may improve microeconomic efficiency but may result in output losses and increased unemployment.

## ***2.2. The reform results in SEE countries***

The Energy Community Treaty that was signed in Athens on 25 October 2005 represents the achievement of the largest internal market for electricity and gas in the world, with effectively 34 participating countries: the 25 European Union Member States and Croatia, Bosnia and Herzegovina, Serbia, Montenegro, Albania, the Former Yugoslav Republic of Macedonia,

Romania, Bulgaria, and UNMIK Kosovo. (Figure 1) The Energy Community Treaty is a key element of the EU strategy in Southeast Europe that aims to extend the benefits of the Internal Energy market before the states of the region may become members of the European Union.

Figure 1: Energy Community



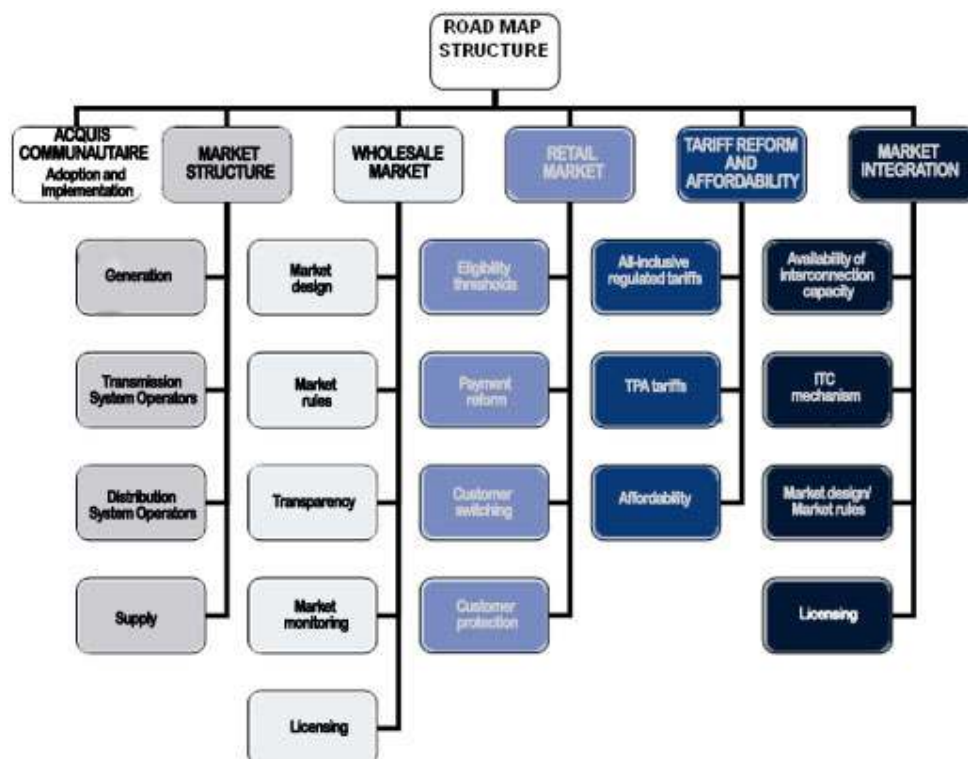
Source: <http://www.energy-community.org>

There are several reasons why the European Commission spearheads this process of energy restructuring and integration into EU internal energy market. Firstly, improving the balance between energy supply and demand is crucial to improve and sustain economic development in Southeast Europe. It requires a strong legal commitment by the countries of the region towards market oriented reforms, regional integration and investment security. Secondly, the security of supply of the European Union is based on diversifying supply of electricity and gas and is being politically able to counter threats to energy disruption in the European Union.

The legally binding obligations of the Treaty establishing the Energy Community in the area of electricity are far-reaching and complex. Figure 2 shows the common framework programme that has to be done in all SEE countries.

The Treaty imposes that the national electricity markets should be opened for all non-household customers as of 1<sup>st</sup> January 2008 and for all customers as of 1<sup>st</sup> January 2015. However, three years after the deadline for implementing the electricity *Acquis* and almost two year after the deadline for market opening for non-household customers, de facto degree of market opening has not reached an acceptable level offering customers an adequate choice. One of the main reasons for this is general persistence of regulated electricity supply tariffs significantly lower than the market level prices available also to the eligible customers, which still include elements of public service obligation, cross-subsidised and various kinds of state support aimed at protection of the household customers (except for Croatia).

Figure 2: Road map of SEE obligations towards the Energy Community



Source: <http://www.energy-community.org>

According to the newest Progress report on electricity (EC, 2009), not all national regulatory authorities have approved non-discriminatory transmission and distribution tariffs, or more often such tariffs are not treated in a transparent manner by responsible network operators. This further restrains the new entrants to access the market. Similarly, the market rules are either missing or pending for further improvement in most of Contracting Parties.

In general, the unbundling and access to accounts of transmission system operators (TSOs) is more advanced than that of distribution system operators (DSOs). TSOs are established as state-owned network companies legally unbundled from commercial electricity activities in all Contracting Parties. In all cases except Croatia the TSO also performs as market operator – in Croatia a separate entity acts as an independent Energy Market Operator. In Albania, Bosnia and Herzegovina, Montenegro, FYR of Macedonia and Serbia the TSOs are ownership unbundled from other electricity undertakings. In Montenegro the TSO was recently spun-off from the integrated utility as a separate company and set to perform the same activities as in the other systems.

In all Contracting Parties DSOs network activities are still legally bundled with the supply of electricity for captive customers connected to the distribution network. In all cases there is financial/accounting unbundling. In B&H (in two out of three electricity companies),

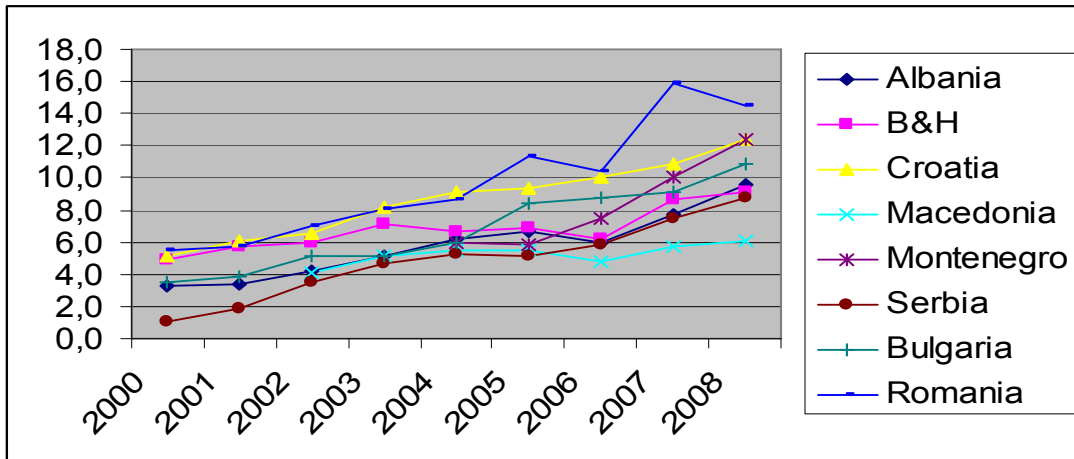
Montenegro and UNMIK DSOs are still legally (but not in financial/accounting aspects) bundled with the regulated generation. Assets of the DSO are unbundled in the FYR of Macedonia and in Albania, and these DSOs (together with the corresponding supply activities) are privatized.

Considering market opening, all non-household customers are legally eligible to switch their suppliers in Albania, B&H, Croatia, Montenegro and Serbia, which brings these Contracting Parties in compliance with the Treaty in this respect. In Croatia the market is legally open 100 % - for all customers including households. On the other hand, in the FYR of Macedonia the electricity market is legally available only for the customers directly connected to the high-voltage (110 kV) network, and in UNMIK only those customers connected to the network of 10 kV or above are allowed to switch their supplier. Still, in practical terms, the implementation of eligibility is less effective. The only exception is Croatia where a large number of commercial customers has switched from tariff supply and close to 40 % of the consumed electricity is sold to eligible customers by the only supplier active on the free market – all high and medium-voltage customers are compelled to exercise their eligibility. In the FYR of Macedonia the switching is mandatory for all (nine large industry customers directly connected to high voltage network) eligible customers which results in an average of 30 % of the consumed electricity to be purchased on the market. In Albania, B&H, Montenegro and UNMIK there are only few eligible customers (usually one of two large industry companies) who are purchasing whole or part of consumed electricity on the market. In Albania the only eligible customer from 2006 has currently reiterated to a supply under tariff conditions which are more favourable.

The price convergence is usually an independent indicator of market integration reflecting effectiveness of measures, rules and practices to integrate particular markets into functioning regional market. The level of regulated prices for final customers and the tendency in price convergence in Contracting Parties showed continuous increase over the last three years by narrowing the gap over the period from 1:2 in 2005 to 1:1,6 in 2008. However, under the current circumstances when regional wholesale market institutions do not exist or do not yet function well, the regulated retail price convergence can be observed only as an indication of enhanced cost-reflectivity and better chances for smooth implementation of other policy measures for integration of regional markets. (EC, 2009)

Still, the process of convergence for residential electricity tariffs has not been reached (Figure 3)

*Figure 3: Residential electricity tariffs in SEE countries, 2000-2008 (in USc/kWh)*



Source: <http://www.ebrd.com/country/sector/econo/stats/tis.xls>

Most Southeast European countries with low wages like Macedonia, Bosnia and Herzegovina, Serbia and Albania still have very low tariffs that are not cost-based. Prices in Croatia, Montenegro and especially Romania have been increasing substantially, reaching a level comparable or higher with those found in the new EU Member States. The existence of tariffs that are not cost reflective in some Southeast European countries have become more acute by the payments arrears and low collection rates. The newest data show that Albania and Macedonia still have difficulties with the low level of collection rates, while Bulgaria, Bosnia and Herzegovina and Serbia succeeded to solve these problems in the past couple of years.

### 3. The role of institutional environment in conducting electricity reforms

During the last years there has been a considerable growth in research on “good governance” and the quality of government institutions. This development has been induced by empirical findings among economists that such institutions can be considered as the key to understanding economic growth in developing countries (Acemoglu, Johnson, and Robinson, 2002; Acemoglu, Johnson, and Robinson, 2001; Easterly, 2001, Easterly and Levine 2003, Rodrik, Subramanian, and Trebbi, 2004). Consequently, the neoclassical economic thought has been expanded and incorporated such new ideas. New institutional economics has been developed and provided with new evidence of the role of institutions in market economies. Overall institutional environment and especially economic institutions, influence the structure of economic incentives in an economy. Without property rights economic agents will not have the incentives to invest in human or physical capital or adopt more efficient technologies. Economic institutions are also important because they help to allocate resources to their most efficient uses, they determine who gets profits, revenues and residual rights of control. (Acemoglu, Johnson, Robinson, 2004) Rodrik argues that there is a requirement for a "cumulative process of institution building to ensure that growth does not run out of steam and that the economy remains resilient to shocks." (Rodrik, 2003, 25) The laws and political and social rules and conventions are also included in this institution building. In particular, relevant modes of conduct in the context of the regulatory state might include probity in public administration, independence of the courts, low corruption and cronyism and traditions of civic responsibility. (Jalilian et.al., 2006, 89) This perspective has shifted the focus away from variables such as physical capital, natural resources, and human capital to matters directly related to the sphere of government and politics.

Kaufmann and associates at the World Bank, responsible for providing the most widely used governance indicators, define governance as “the traditions and institutions by which authority in a country is exercised”. More specifically, this includes: (1) the process by which government are selected, monitored and replaced, (2) the capacity of the government to effectively formulate and implement sound policies, and (3) the respect of citizens and the state for the institutions that govern economic and social interactions among them (Kaufmann, Kraay, and Mastruzzi 2004, 3). Other economists have tried to be more specific by defining “good governance” as “good-for-economic-development” (La Porta et al., 1999, 223). But this view excludes other non-economic consequences of the quality of government referred to above, such as interpersonal trust and subjective well-being.

The importance of institutional framework is crucial for sustainable growth in output and efficiency in utility service industries like electricity. The institutional environment via its effect on regulatory quality influences investment rates, particularly in industries such as electricity (especially distribution) where assets are long-lived and investments are generally irreversible to some degree. The regulatory quality is of crucial importance in electricity sector and is a function not only of regulatory institutions, but also of the wider institutional environment.

As it has been already mentioned, the standard institutional solution to handle these infrastructure industry issues is to introduce an independent regulatory agency, instead of direct regulation by a government department, operating within a clearly defined legal framework. The independent regulator is intended to provide the high-quality institution that permits and fosters sustained growth in capacity and efficiency in the utility service industries, particularly the network elements. (Cubbin, Stern, 2006, 115)

Although theory strongly confirms the positive impact of institutional framework and regulatory quality on electricity outcomes, there have been a limited number of empirical studies focusing this issue. Our aim is to investigate the importance of economic institutions in the process of conducting economic reforms in electricity sector. The following analysis focuses the role of government effectiveness and regulatory quality in the success of conducting electricity sector because these two variables are closest to capture the quality of the outcome and dimensions of regulation. The next section presents the data, model explanation and the results.

### ***3.1. Data***

The most commonly used governance indicators are those developed by the World Bank and drawn from 194 different measures (Kaufmann, Kraay and Mastruzzi, 2009) These indicators consist of six variables that provide different aspects of a country's quality of governance:

- Voice and accountability: respect for political rights and civil liberties, public participation in the process of electing policy-makers, independence of media, accountability and transparency of government decisions.
- Political instability: political and social tension and unrest, instability of government.
- Government effectiveness: perceptions of the quality of public provision, quality of bureaucracy, competence of civil servants and their independence from political pressure and the credibility of government decisions.



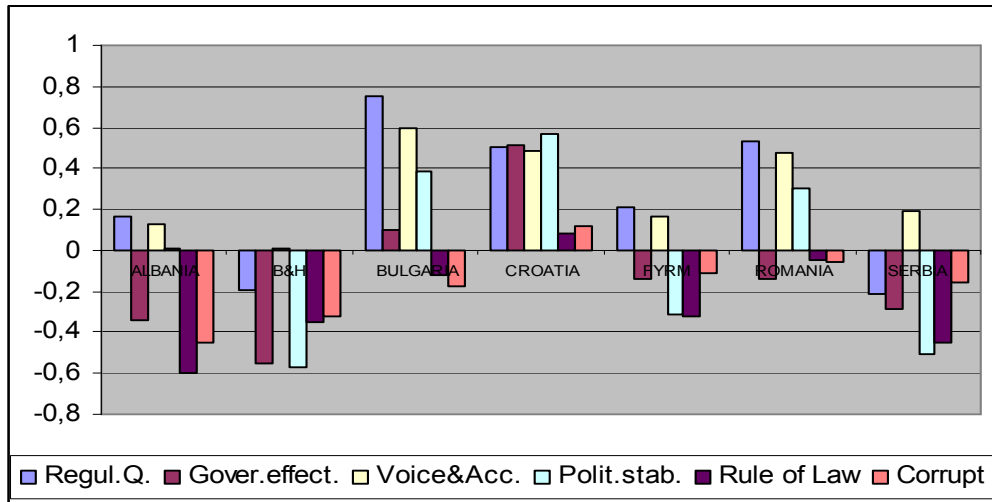
- Regulatory quality: burden on business via quantitative regulations, price controls and other interventions in the economy.
- Rule of law: respect for law and order, predictability and effectiveness of the judiciary system, enforceability of contracts.
- Control of corruption: perceptions of the exercise of public power for private gain.

The indicators are normalized with higher values denoting better governance.

Figure 4 shows the governance indicators in SEE countries in 2008.

On average, SEE countries have recorded highest scores in regulatory quality and voice and accountability, while the rule of law is estimated with the lowest scores. Croatia and Bulgaria have been graded with highest scores and together with Romania and Montenegro, their achievements are above regional average. On the other hand, Kosovo and Bosnia and Herzegovina have the lowest overall score, especially in government effectiveness, political stability and rule of law.

Figure 4: Governance indicators in SEE countries in 2008



Source: World Bank database, 2010

As one could expect, data on governance indicators are highly correlated (see Table 1) because all these variables are affecting each other.

Table 1: Correlation coefficient matrix

Spearman Rank Order Correlations (Government efficiency and reforms) MD pairwise deleted Marked correlations are significant at $p < .05000$						
Variable	REG.Q	GOV.EFF	VOICE&ACC	POL.STAB	RULEofLAW	CORRUPT
REG.Q	1,000000	0,927350	0,902930	0,601343	0,957875	0,929792
GOV.EFF	0,927350	1,000000	0,881563	0,621490	0,926129	0,909646
VOICE&ACC	0,902930	0,881563	1,000000	0,702686	0,949939	0,952381
POL.STAB	0,601343	0,621490	0,702686	1,000000	0,663614	0,656288
RULEofLAW	0,957875	0,926129	0,949939	0,663614	1,000000	0,967033
CORRUPT	0,929792	0,909646	0,952381	0,656288	0,967033	1,000000

Although all these variables are affecting the dynamics and success of the reforms conducted in electricity sector, the focus of this paper is on government effectiveness and regulation rather than on governance in its political aspects, which is included in other three variables (voice and accountability, political stability and rule of law). We therefore use two variables in the World Bank data set that come closest to capture the quality of the outcome and process dimensions of regulation: government effectiveness and regulatory quality.

The dependent variable in the regressions is the success in conducting reforms in electricity sector. In order to evaluate the progress in electricity reforms achieved by transition countries, we use the reform indexes made by European Bank for Reconstruction and Development (EBRD). These indicators range from 1 to 4+:

Grade 1: Energy sector operates as government department with few commercial freedoms or pressures. Average prices are well below costs, with extensive cross-subsidies. There is a monolithic structure with no separation of different parts of the business.

Grade 2: Energy company is distanced from the government, but there is still a political interference. There are some attempts to harden budget constraints, but effective tariffs are low. Management incentives for efficient performance are weak, institutional reforms have been insufficient and there is a minimal, if any, private sector involvement.

Grade 3: Law passed providing for full-scale restructuring of industry, including vertical unbundling through account separation and set-up of regulator. There are some tariff reforms and improvements in revenue collection, with some private sector involvement.

Grade 4: Generation, transmission and distribution have been separated and an independent regulator has been set up. Rules for cost-reflective tariff-setting have been formulated and implemented. There is a substantial private sector involvement in distribution and/or generation with some degree of liberalisation.

Grade 4+: Tariffs have been cost-reflective and provide adequate incentives for efficiency improvements. There is a large-scale private sector involvement in the unbundled and well-regulated sector. Sector has been fully liberalised with well-functioning arrangements for network access and full competition in generation.

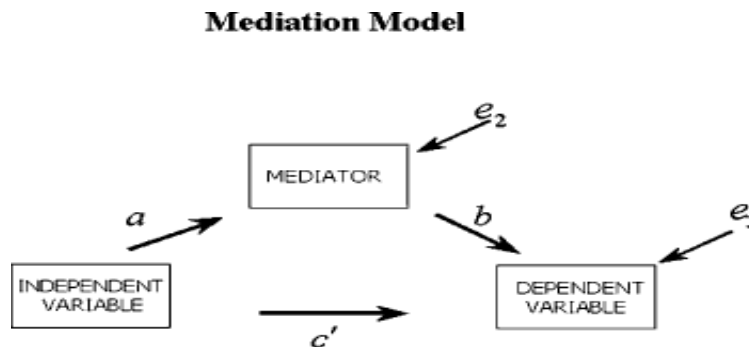
Since it is assumed that better government effectiveness increases the success of electricity reforms, our empirical work is concerned with whether the regulatory quality mediates the effects of government effectiveness on reform success and whether the effectiveness of the government has its direct impact on reforms in SEE countries that have signed the Treaty on

establishing Energy Community. We put these eight SEE countries in a much wider context of all transition countries. Having a bigger sample of 27 countries gives us a more reliable pattern for cross-section analysis with economies that have relatively similar characteristics and development path from centrally planned to market economies.

### 3.2. The model

The mediation analysis examine whether an effect of one variable on another is direct or indirect or both. Therefore the mediation analysis is used to identify possible causal mechanisms. (Figure 5)

Figure 5: The mediation model



This method uses information from the following three regression equations:

$$Y = i_1 + cX + e_1 \quad (1)$$

$$Y = i_2 + c'X + bM + e_2 \quad (2)$$

$$M = i_3 + aX + e_3 \quad (3)$$

where  $i_1$  and  $i_2$  and  $i_3$  are intercepts,  $Y$  is the dependent variable,  $X$  is the independent variable,  $M$  is the mediator,  $c$  is the coefficient relating the independent variable and the dependent variable,  $c'$  is the coefficient relating the independent variable to the dependent variable adjusted for the mediator,  $b$  is the coefficient relating the mediator to the dependent variable adjusted for the independent variable,  $a$  is the coefficient relating the independent variable to the mediator, and  $e_1$ ,  $e_2$ , and  $e_3$  are residuals.

Although there are many methods available for testing hypotheses about intervening variable effects, the most widely-used method is the *causal steps approach* popularized by Baron and Kenny (1986). They proposed a three step approach in which several regression analyses are conducted and significance of the coefficients is examined at each step. (Table 2)

Table 2: Steps in mediation analysis

	Analysis
Step 1	Simple regression analysis with X predicting Y to test for path c alone
Step 2	Simple regression analysis with X predicting M to test for path a

<i>Step 3</i>	Simple regression analysis with M predicting Y to test the significance of path b Multiple regression analysis with X and M predicting Y to test for path c'
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The significance of the mediated effect is calculated according to the following equation:

$$z_{ab} = \frac{a * b}{se_{ab}}$$

Formula for the standard error ( $se_{ab}$ ) of the mediated effect ( $a*b$ ) is: (Sobel 1982, 1986).

$$se_{ab} = \sqrt{(a^2 \times se_b^2) + (b^2 \times se_a^2)}$$

### 3.3. Results

Table 3 shows the descriptive statistics for the above mentioned variables.

*Table 3: Descriptive statistics for the analysed variables*

Variable	Descriptive Statistics (Government efficiency and reforms)							
	Valid N	Mean	Median	Minimum	Maximum	Std.Dev.	Skewness	Kurtosis
REG.Q	27	0,092758	0,163313	-2,02605	1,469590	0,868871	-0,53733	-0,011310
REFORM	27	2,912593	3,000000	1,00000	4,000000	0,748746	-1,14253	1,495716
GOV.EFF	27	-0,098516	-0,141852	-1,15859	1,148817	0,650595	0,29996	-0,843114

While changes in variable REFORM is border line normally distributed, other two variables REG.Q and GOV.EFF are normally distributed. Variable REG.Q has slight negative skew meaning that more countries have higher results in regulatory quality. On the other hand, variable GOV.EFF has slight positive skewness, which means that more countries have recorded lower values of government effectiveness. Both variables are platokurtotic, meaning that extreme changes were not recorded in the observed period, while variable REFORM is more leptokurtotic.

We have conducted bivariate and multiple regression analysis in order to see whether the regulatory quality mediates the effects of government effectiveness on the success of implementing reforms in electricity sector. We have based the model on the theoretical knowledge on the role of government in creating regulatory environment, as well as direct effect of government effectiveness on reform success.

Table 4 presents the results of the mediation analysis.

*Table 4: Testing mediator effects using multiple regression*

Testing steps in mediation model	B	SE B	$\beta$
Testing step 1 (Path c) Outcome: success in conducting electricity reforms Predictor: government efficiency R=0.69; F(1,25)=22,32; p<.001	0.79	0.17	0.69*
Testing step 2 (Path a)			

Outcome: regulatory quality Predictor: government effectiveness R=0,91; F(1,25)=116,16; p<.001	1.21	0.11	0.91*
Testing step 3 (Paths b and c') Outcome: success in conducting electricity reforms Mediator: regulatory quality (Path b) Predictor: government effectiveness (Path c') R=0.83; F(2,24)=26.10; p<.001	0.95 -0.36	0.24 0.31	1.10 -0.31
Sobel mediation test: 5.91 Direct effect = -0.31 Indirect effect = 1.00			

\*Note: p<0.01

The presented data show that the effect of government effectiveness (GOV.EFF) on the reform success (REFORM) after the introduction of the mediator (REG.Q) in the model (step 3 - path c') becomes statistically insignificant comparing with the effect before having the mediation model (step 1 - path c). Mediation effect is high and statistically significant ( $r_{axb}=1.001$ ; Sobel  $z=5.905$ ;  $p<0.05$ ). These results confirm the mediation hypothesis that regulatory quality mediates the effects of government effectiveness on the success in implementing reforms in electricity sector of transition countries. Our findings confirm that the regulatory quality is a crucial condition for the success in implementing electricity reforms in transition countries.

These results should be seen in the context of country specifics and huge differences in the speed and success of governance reforms among transition countries. Because of the different economic, social and political environments, as well as differences in institutions that are embedded in the social, political and administrative infrastructure of particular country, transition economies have followed different reforms paths. According to governance data, the Central and East European and Baltic countries proved to be more successful reformers and achieved better governance than the former Soviet Union countries. However, all countries have reached lower grades for government effectiveness, while the reforms in conducting better regulation and higher regulatory quality have been much more successful.

The limitation of this study is the problem of calculation of the used variables. Governance indicators are based exclusively on subjective or perceptions-based data on governance reflecting the views of a diverse range of stakeholders. Also, the estimates are done with margins of error that indicate the unavoidable uncertainty associated with measuring governance across countries. The scores of the success in implementing electricity reforms have been also dubious. The transition indicator scores reflect the judgment of the EBRD's Office of the Chief Economist about country-specific progress and inevitably cannot be completely objective. Still, these indicators have been widely accepted since there are no hard data for measuring institutional environment and implementation of reforms.

#### 4. Conclusion

During the 90s all transition countries have started with economic reforms in electricity sector, changed the centralized organization of monopolistic infrastructure utilities and introduced market-oriented structures and public regulation. These reforms were implemented as the part of the much wider transition processes and structural adjustment reforms and their

success have been strongly related to the quality of institutions and overall institutional capacity. Consequently, the focus of the research has been oriented towards the quality of government institutions and their impact on reform process and economic growth.

Our analysis show that transition countries of Southeast Europe have done some important reform steps in conducting electricity reforms, but there are still a lot of measures to be done. An important driver for the reforms is the Treaty on establishing Energy Community which has been signed by all SEE countries. It obliges the signatories to adopt the EU *Acquis communautaire* in energy, competition and environment. The Energy part has arranged the cooperation and establishment of common regulatory frame for electricity trade across the whole EU and within the SEE region under the same rules and it has included gradual liberalisation of electricity markets, restructuring electricity companies, maintaining cost recovery tariffs, tariff methodologies and technical codes for network access.

Although all SEE countries have taken obligations, the process of implementation of the Energy Community is still under way. This process strongly depends on the SEECS' institutional capacity, especially the quality of national governance and, at the same time, the appropriate level of institutional resources is crucial for the SEE countries in order to benefit from the reforms in electricity sector. Since it is assumed that better government effectiveness increases the success of electricity reforms, our empirical work is concerned with whether the regulatory quality mediates the effects of government effectiveness on reform success and whether the effectiveness of the government has its direct impact on reforms in SEE countries. Our research results confirm the mediation hypothesis that regulatory quality mediates the effects of government effectiveness on the success in implementing reforms in electricity sector on a wider sample of transition countries. Our finding that the regulatory quality is a crucial condition for the success in implementing electricity reforms in transition countries induces a dilemma for the policy-makers in SEE countries whether the EU electricity model is appropriate at this stage. The EU reform model in electricity sector needs certain institutional resources that are still missing in SEE countries. The question whether the well designed reform model can be successfully implemented regardless of the specific political and economic system, institutional capacity or development stage of a country and industry, has become a controversial issue in times of global economic and energy crisis.

## References:

- Acemoglu, D., Johnson, S. and Robinson, J.A. (2001), The Colonial Origins of Comparative Development: An Empirical Investigation, *The American Economic Review*, Vol. 91, No. 5, 1369-401.
- Acemoglu, D., Johnson, S. and Robinson, J.A. (2002), Reversal of Fortune: Geography and Institutions in the Making of the Modern Income Distribution, *The Quarterly Journal of Econometrics*, Vol. 118, 1231-94.
- Acemoglu, D., Johnson, S. and Robinson, J.A., (2004), Institutions as the Fundamental Cause of Long-Run Growth, NBER Working Paper No. 10481, May 2004
- Baron, R. M., & Kenny, D. A. (1986), The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations, *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Cubbin, J., Stern, J. (2006), The Impact of Regulatory Governance and Privatization on Electricity Industry Generation Capacity in Developing Economies, *The World Bank Economic Review*. Vol. 20 No.1
- Easterly, W., (2001), *The Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics*, Cambridge, Mass.: The MIT Press.
- Easterly, W. and Levine, R. (2003), Tropics, germs, and crops: how endowments influence economic development, *Journal of Monetary Economic*, Vol.50, 3-39.

Energy Community Secretariat, (2009), Report on the Implementation of the Acquis under the Treaty establishing the Energy Community - Status of Electricity and Gas Market Development, June 2009

Hayes, A.F. (2009), Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium, *Communication Monographs*, Vol. 76, no. 4, December 2009, p. 408-420.

<http://www.energy-community.org>

<http://www.ebrd.com/country/sector/econo/stats/tis.xls>

<http://www.ebrd.com/country/sector/econo/stats/tis.xls>

EC (2009), Progress report on electricity, European Commission

Jalilian, H., Kirkpatrick, C. and Parker, D. (2006), The Impact of Regulation on Economic Growth in Developing Countries: a Cross-Country Analysis, *World Development*, Vol. 35, 87-103.

Judd, C.M. and Kenny, D.A. (1981), Process Analysis: Estimating mediation in treatment evaluations, *Evaluation Review*, Vol. 5, no.5, 602-619.

Kaufmann, D., Kraay, A. and Mastruzzi, M., (2004), Governance Matters III: Governance Indicators for 1996-2002: The World Bank Policy Research Working Paper 3106, The World Bank

Kaufmann, D., Kraay, A. and Mastruzzi, M., (2009), Governance Matters VIII: Aggregate and Individual Governance Indicators, 1996-2008, The World Bank Policy Research Working Paper 4978, The World Bank

La Porta, R., Lopez-de-Silanes, L., Shleifer, A. and Vishny, R. (1999), The Quality of Government, *Journal of Law, Economics and Organization*, Vol. 15, no. 1, 222-79.

Rodrik, D., Subramanian, A. and Trebbi, F. (2004), Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development, *Journal of Economic Growth*, Vol. 9, 131-65.

Sobel, M. E., (1982), Asymptotic confidence intervals for indirect effects in structural equation models, in: Leinhardt, S. (Ed.), *Sociological Methodology*, Washington, DC, American Sociological Association, 290-312.

Sobel, M. E. (1986). Some new results on indirect effects and their standard errors in covariance structure models. In N. Tuma (Ed.), *Sociological Methodology 1986* (pp. 159-186). Washington, DC: American Sociological Association.

Thomas, S., Hall, D., (2006), *GATS and the Electricity and Water Sectors*, PSIRU, Business School. London: University of Greenwich

World Bank, (2010), WGI database